

TABLES

TABLE 1
HYDRAULIC CONTROL INTERIM MEASURE TIMELINE^{1,2}

 Former Rhone-Poulenc Site
 Tukwila, Washington

Approximate Date	Description or Activity
March 2000	<ul style="list-style-type: none"> EPA notifies RCI that Interim Measures to address groundwater are necessary.
May 2000	<ul style="list-style-type: none"> Hydraulic Control Interim Measures Work Plan (HCIMWP) submitted to EPA.
August 2000	<ul style="list-style-type: none"> HCIM Work Plan disapproved by EPA.
November 2000	<ul style="list-style-type: none"> Revised HCIM Work Plan submitted to EPA on November 15.
February 2001	<ul style="list-style-type: none"> Contained-In Determination Soil Sampling- Proposed Barrier Wall-Former Rhone Poulenc Facility report sent to EPA.
April 2001	<ul style="list-style-type: none"> EPA sends RCI a letter dated April 5, 2001- Determination of need for additional work. RCI and EPA meet to discuss additional work requested by EPA and technical issues with the proposed barrier wall on April 26, 2001.
June 2001	<ul style="list-style-type: none"> Addendum 2 to the Groundwater Monitoring Plan with a proposed Geoprobe sampling program is submitted to the EPA on June 4, 2001. EPA sends a letter of Approval for Addendum 2 to RCI on June 26, 2001.
July 2001	<ul style="list-style-type: none"> Geoprobe sampling program (as approved by EPA on June 26) is completed between July 25 and July 30, 2001.
October 2001	<ul style="list-style-type: none"> RCI submits the final report for the Geoprobe sampling program to EPA on October 9, 2001.
November 2001	<ul style="list-style-type: none"> EPA and RCI meet on November 28, 2001, to discuss the HCIMWP.
March 2002	<ul style="list-style-type: none"> EPA issued draft interim measures approval with modifications letter for the November 15, 2000, HCIMWP on March 18, 2002.
April 2002	<ul style="list-style-type: none"> EPA continues to review November 2000 HCIMWP. EPA and RCI hold a technical meeting on April 24, 2002. EPA grants temporary suspension request of groundwater monitoring activities by RCI.
May 2002	<ul style="list-style-type: none"> EPA approves HCIMWP with extensive modifications, on condition that HCIMPMP (Hydraulic Control Interim Measures Performance Monitoring Plan) will be submitted within 30 days and that HCIM Construction Work Plan (HCIMCWP) will be submitted within 60 days.
June 2002	<ul style="list-style-type: none"> Draft HCIMPMP submitted to EPA.
July 2002	<ul style="list-style-type: none"> Draft HCIMCWP, HCIMPMP QAPP, and a Draft Biological Assessment (BA) submitted to EPA.
August 2002	<ul style="list-style-type: none"> Revisions made to HCIMPMP QAPP and HCIMPMP.
September 2002	<ul style="list-style-type: none"> EPA comments on HCIMCWP and draft BA received by RCI. RCI receives EPA approval of "Groundwater Monitoring Program - HCIM Pre-Construction Monitoring" and "Revised QAPP" submitted in August 2002. Nine HCIM performance monitoring wells (MW-38 through MW-46) installed and developed. Round 17 preconstruction groundwater monitoring event occurs.
October 2002	<ul style="list-style-type: none"> Final BA and Final HCIMCWP submitted to EPA. Pre-trenching (to a depth of approximately 15 feet) begins along the barrier wall path.
November 2002	<ul style="list-style-type: none"> Revised HCIMPMP submitted to EPA.
December 2002	<ul style="list-style-type: none"> Round 17 groundwater monitoring report submitted to EPA. Round 18 groundwater monitoring event completed. EPA conditionally approves HCIMWP and HCIMPMP (December 2002). HCIM construction commences.
January 2003	<ul style="list-style-type: none"> Baseline acoustic monitoring performed for vibrating beam in Duwamish Waterway. Full-scale wall installation has not yet begun.
February 2003	<ul style="list-style-type: none"> Acoustic monitoring completed and full-scale wall installation commences.
April 2003	<ul style="list-style-type: none"> Synoptic water level measurement event completed. Wall installation completed April 8, with demobilization through April 11, 2003. Installation of groundwater extraction system continues. Performance monitoring activities commence.
May 2003	<ul style="list-style-type: none"> Month-long transducer study commences May 11. Installation of final components of groundwater extraction system continues. Discharge permit from King County Industrial Waste Program (KCIWP) issued for 15,000 gpd. Effective date May 14.

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June 2003	<ul style="list-style-type: none"> Revisions to Round 17 quarterly report made based on comments from EPA. Transducer study completed on June 9.
July 2003	<ul style="list-style-type: none"> Round 18 groundwater monitoring report submitted to EPA. Revised Round 17 report submitted to EPA. Testing and startup activities for HCIM groundwater extraction system begin.
August 2003	<ul style="list-style-type: none"> Groundwater extraction and treatment system starts operation. Monthly water level measurements commence, per the HCIMPMP.
September 2003	<ul style="list-style-type: none"> RCI requests increase of water discharge from King County to 30,000 gpd. Round 21 groundwater monitoring event completed. HCIM Construction Report submitted to EPA.
October 2003	<ul style="list-style-type: none"> Major shutdown of system occurred on October 31 because lift station pump failed. Pretreatment system remained operable, but the failure precluded discharge to county sewer system.
November 2003	<ul style="list-style-type: none"> Pump station repaired and discharge resumed on November 18. Round 21 groundwater monitoring report submitted to EPA. Round 22 groundwater monitoring event completed.
December 2003	<ul style="list-style-type: none"> King County Department of Natural Resources and Parks (KCDNRP) approves request for increased discharge. RCI requests a second increase for water discharge. Groundwater extraction has not yet achieved compliance with 1-foot differential water level goal. Larger GAC units are shipped to the site to upgrade the treatment system for increased flow rates. Request for extension of time to achieve compliance submitted to EPA.
January 2004	<ul style="list-style-type: none"> Pumping rates increased to accelerate achievement of required drawdown. Revised Final Barrier Wall Evaluation Report submitted to EPA.
February 2004	<ul style="list-style-type: none"> RCI requests modification to discharge permit (to discharge at 75 gpm and to use the on-site steel tank as temporary storage). Round 22 groundwater monitoring report submitted to EPA. RCI receives EPA letter denying RCI's request for extension to meet compliance.
March 2004	<ul style="list-style-type: none"> KCDNRP approves second extension request and modification from February 2004. Round 23 groundwater monitoring event completed. Groundwater extraction rates increased. A second bag filter is added to the system. Request made to Ecology for consideration of site for NPDES permit, and Ecology denies request. Preparation of application for an amendment to current discharge authorization begins. On March 24, transformer power failure occurred due to vandalism, shutting down the extraction system.
April 2004	<ul style="list-style-type: none"> The transformer power failure was discovered on April 2, 2005, and the data recorder was restarted on April 5, 2005. Formal inspection and maintenance process commences on April 5 (weekly inspection reports). RCI submits application for new discharge permit requesting discharge rate of 45 gpm. KCDNRP approved the 45 gpm in the interim during the review process. Operation Maintenance Inspection and Monitoring Plan (OMIMP) submitted to EPA. Formal operating and maintenance logs and inspections have not been documented since summer 2003. EPA sends Request for Information to RCI regarding IM.
May 2004	<ul style="list-style-type: none"> Round 23 report submitted to EPA. Response to Request for Information submitted to EPA. Pretreatment system equipment is upgraded (pumps, carbon units, bag filters) to allow increased discharge rate of 30 gpm. RCI receives Wastewater Discharge Permit, and approval from KCDNRP on proposed modification to existing pretreatment system.
June 2004	<ul style="list-style-type: none"> Round 24 groundwater monitoring event completed. Temporary power to system went down June 29 but was back on line June 30.
July 2004	<ul style="list-style-type: none"> EPA issues Request for Information to RCI for four historical reports. RCI requests 30-day extension to respond to Request for Information.

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Approximate Date	Description or Activity
August 2004	<ul style="list-style-type: none"> EPA visits site to observe field activities and to perform compliance inspection of HCIM groundwater extraction system. Round 24 groundwater monitoring report submitted to EPA. EPA grants 30-day extension for Request for Information due date. Response to Request for Information submitted to EPA.
September 2004	<ul style="list-style-type: none"> August monthly report submitted to EPA. Round 25 groundwater monitoring event completed.
October 2004	<ul style="list-style-type: none"> September monthly report submitted to EPA.
November 2004	<ul style="list-style-type: none"> October monthly report submitted to EPA. Round 25 Performance Monitoring Report, Draft Performance Monitoring Annual Report, and letter requesting changes to the HCIMPMP submitted to EPA.
December 2004	<ul style="list-style-type: none"> Monthly water level and groundwater parameter report for November 2005 submitted to EPA. Round 26 groundwater monitoring event completed. Monitoring well B1-B located with a metal detector. A power failure occurs on December 31, 2004, preventing the data recorder from collecting data for 4 days.
January 2005	<ul style="list-style-type: none"> Groundwater Pretreatment System Relocation Plan is submitted to EPA on January 21. Monthly Water Level and Groundwater Parameter Report for December 2005 submitted to EPA on January 28.
February 2005	<ul style="list-style-type: none"> Increased extraction well pumping begins in order to lower the groundwater level inside the barrier wall to 2 feet below the required 1-foot differential in anticipation of EPA's approval of the Groundwater Pretreatment System Relocation Plan. Recovery wells were operated manually to reduce the groundwater level inside the barrier wall. On February 15 Container Properties receives a demand for stipulated penalties from EPA. On February 16 EPA is notified of Container Properties intent to repair perimeter fencing. On February 24 Container Properties requests an extension of time to invoke dispute resolution procedures regarding EPA's demand letter. Monthly Water Level and Groundwater Parameter Report for January 2005 submitted to EPA on February 22. The Round 26 Performance Monitoring report submitted to EPA on February 25. On February 28 repairs to the fence are initiated and Container Properties receives a letter from EPA dated February 22, 2005, indicating that revisions were necessary to the Groundwater Pretreatment System Relocation Plan dated January 21, 2005, prior to EPA's approval.
March 2005	<ul style="list-style-type: none"> The Monthly Water Level and Groundwater Parameter report for February 2005 submitted to EPA on March 9. On March 9, the generator that powers the pretreatment system is replaced with another generator that later failed. Damage to several system components occurs requiring extraction well pumping to be operated manually. Transducer calibration problems are noted. The Round 27 groundwater monitoring event conducted from March 15 through March 17. On March 18, 2005, Container Properties submits a response to EPA's comments on the Draft Interim Measure Performance Evaluation Annual Report, along with copies of the final Interim Measures Performance Evaluation Annual Report. Container Properties completed repairs to the perimeter security fencing during March. The site is kept closed and secured with a lock. Container Properties representatives and EPA RCRA enforcement and compliance staff meet on March 31 at Region 10 offices to discuss the upcoming response to the EPA demand for stipulated penalties.
April 2005	<ul style="list-style-type: none"> A long-term lease is negotiated and signed with Insurance Auto Actions, Inc. (IAAI), for the western half of the property. The Monthly Water Level and Groundwater Parameter Report for March 2005 is submitted to EPA on April 8. Transducers in both wells DM-8 and MW-49 are recalibrated in accordance with a new recalibration procedure on April 9. Depths to the bottom of wells that are sampled during the quarterly monitoring events are measured on April 21. Total depth measurements do not indicate a need to redevelop wells at this time. New pump controls are installed on April 27 to return the system to automatic control. However, at least one of the groundwater pumps will still be operated continuously under manual control to maintain this larger differential water level prior to the planned relocation of the treatment system later this year.
May 2005	<ul style="list-style-type: none"> Monthly water level and groundwater parameter report for April 2005 submitted to EPA on May 10. Replacement autodialer installed on May 12. Round 27 Performance Monitoring report submitted to EPA on May 19.
June 2005	<ul style="list-style-type: none"> Proposed Order Modification to the HCIMCWP and the Demolition Work Plan were submitted to EPA for review on June 3. Monthly Water Level and Groundwater Parameter Report for May 2005 submitted to EPA on June 10. The Round 28 quarterly groundwater monitoring event conducted from June 14 through June 16. Improved program for the programmable logic controller (PLC) installed on June 15. The monthly water level and general parameter measurement event completed on June 16. After June 28, the well control set points are adjusted to increase the drawdown inside the barrier wall to support the planned relocation of the treatment system. The wells are placed under automatic control.

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July 2005	<ul style="list-style-type: none"> • Container Property representatives meet with EPA staff on July 7 to discuss issues related to the relocation plan and pending comments on the Interim Measure Performance Evaluation Report 2003-2004. Container Properties and EPA have settled issues related to the EPA demand for stipulated penalties dated February 15, 2005. • Monthly Water Level and Groundwater Parameter Report for June 2005 submitted to EPA on July 11 (July 10 was a Sunday). • On July 14 the PLC is reprogrammed by ECS Engineering and Geomatrix staff. The new function is tested and successful. Groundwater level inside the barrier is being maintained well below the required 1-foot differential. Wells are operating under automatic control to maintain a lower than required differential groundwater elevation on the inside of the barrier wall. • Electrical Service Installation Plan submitted to EPA on July 27.
August 2005	<ul style="list-style-type: none"> • EPA sends comments on the Draft Demolition Work Plan to Respondents on August 9. The letter recommends updated community notification and reiterates EPA concerns, including the nature of the materials left in both the buried and aboveground structures, and protection of the existing groundwater monitoring wells during redevelopment. • Monthly Water Level and Groundwater Parameter Report for July 2005 submitted to EPA August 10. • Container Properties' representatives meet with EPA staff on August 15 to discuss issues relating to the relocation plan and the scope of work for the proposed predemolition investigation discussed in the July 2005 Monthly Progress Report. • The Round 28 Performance Monitoring Report submitted to EPA on August 25. • EPA approves the Electrical Service Installation Plan (with modifications) on August 29 (originally submitted to EPA in July). • SEPA checklist and a shoreline permit application submitted to the City of Tukwila.
September 2005	<ul style="list-style-type: none"> • The Pre-Demolition Investigation Work Plan and the associated QAPP for the investigation delivered to EPA on September 1. • A revised Electrical Service Installation Plan submitted to EPA on September 6 addresses EPA's comments. • The Monthly Water Level and Groundwater Parameter Report for August 2005 submitted to EPA on September 9. • "Short plat" permit package submitted to the City of Tukwila on September 12, to separate the property into an East Parcel and West Parcel. Approval of the short plat application had not been received as of December 31, 2006. • In a letter dated September 14 (and received on September 19), EPA approves with modifications the Proposed Order Modification: Hydraulic Control Interim Measure Construction Work Plan (Modified IM Work Plan). • A letter detailing the Revised Trenching Plan for the Groundwater Pretreatment System Relocation sent to EPA on September 15. • Letter sent to the City of Tukwila on September 16 requesting an exemption from a substantial development permit for the predemolition investigation field activities which would take place within 200 feet of the shoreline. • Work commences on installation of the new electrical service during the week of September 19. • A letter requesting elimination of the monthly measurement of field parameters and monthly reports (an Addendum to the HCIMPMP) e-mailed to EPA on September 19. • The monthly water level and groundwater parameter measurement event for September completed during the Round 29 quarterly monitoring event, conducted from September 20 through September 22.
October 2005	<ul style="list-style-type: none"> • The City of Tukwila grants an exemption from the substantial development permit for the predemolition investigation in a letter dated October 7. • The Monthly Water Level and Groundwater Parameter Report for September 2005 submitted to EPA on October 10. • EPA responds with comments on the Pre-Demolition Investigation Work Plan and QAPP in a letter dated October 19. • A revised Order Modification for the HCIMCWP sent to EPA on October 20. • A Detailed Construction Plan sent to EPA on October 27. • Design Change Memorandum No. 1 sent to EPA for review on October 28. This memorandum addresses changes to the proposed layout of the pretreatment system building and the type of discharge piping going to King County sewers. No changes in system processes are proposed.
November 2005	<ul style="list-style-type: none"> • Response to comment letter and a revised Pre-Demolition Investigation Work Plan sent to EPA on November 2. Geomatrix holds informal meeting with EPA staff on November 2 to discuss changes to the revised Pre-Demolition Investigation Work Plan. Issues relating to redevelopment were also discussed. • EPA sends a letter received on November 8 concerning the Pre-Demolition QAPP. Letter indicates that comments submitted in October regarding the QAPP were the only comments that would be forthcoming. The version of the QAPP submitted as Appendix C of the revised Pre-Demolition Investigation Work Plan had already been revised to address the comments in October. • Design Change Memorandum No. 2, Modified HCIMCWP, Former Rhone-Poulenc, sent to EPA on November 9. This design change proposes changes in the redundant data storage capacity for groundwater levels measured in DM-8 and MW-49. • Monthly Water Level and Groundwater Parameter Report for October 2005 delivered to EPA on November 10. • Western Parcel Redevelopment Work Plan submitted to EPA on November 14. • EPA approves Design Change Memorandum No.1 in letter dated November 15. • In letter received on November 17 EPA approves the Addendum to the Interim Measures Performance Monitoring Plan (Addendum) submitted to EPA in September. • Design Change Memorandum No. 3, Modified HCIMCWP, Former Rhone-Poulenc, sent to EPA on November 17. This design change proposes retrofitting wellheads for DM-8 and MW-49 as part of the relocation of the groundwater pretreatment system to minimize potential loss of groundwater level data. • EPA sends final letter approving the Pre-Demolition Investigation Work Plan in a letter dated November 21. EPA requests several additional minor changes to this work plan. • The East Parcel Cleanup Work Plan submitted to EPA on November 29. The primary objective of the East Parcel Cleanup Work Plan is to resolve any remaining environmental issues for the parcel so that it can be removed from the Order. • The first phase of the predemolition investigation fieldwork (consisting of the test pits in the buried substructures at the site) completed on November 29 and 30.

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December 2005	<ul style="list-style-type: none"> • The remainder of the predemolition investigation fieldwork, including sampling of sumps and the lower scale pit, completed on December 1. • The Round 29 Performance Monitoring report was submitted to EPA on December 2. • The groundwater extraction and pretreatment system is shut down on December 5 to allow relocation of the system. Water levels in control wells DM-8 and MW-49 are being monitored using a portable data logger while the pretreatment system is being relocated. • The monthly progress report for November 2005 delivered to EPA on December 9. • In letters received on December 12, EPA approves Design Change Memoranda No. 2 and No. 3. EPA requests modifications to the design changes. The requested modifications are incorporated as revisions to the HCIMCWP originally sent to EPA in October 2005. • The Round 30 quarterly groundwater quality monitoring event was completed from December 13 through December 16. • The pretreatment system is operational after December 14 when powered using a generator. Testing of equipment is completed by December 14 when the system was inspected and accepted by King County. • Revised Performance Monitoring Plan (PMP) submitted to EPA on December 16. Monitoring of field parameters will be conducted quarterly and groundwater levels will be measured monthly in the designated wells. • EPA and Geomatrix staff hold informal technical meeting on December 21, 2005, to discuss the redevelopment. During this meeting, the issue of well abandonment was discussed. • The revised final Pre-Demolition Investigation Work Plan resubmitted to EPA on December 21. • A revised well abandonment list submitted to EPA on December 29. • Revisions to the HCIMCWP sent to EPA on December 30. The revisions include replacement pages for the table of contents, figures, spines and cover, and Appendix F. • Seattle City Light had not completed hook-up of permanent power by the end of December. All other relocation work completed prior to December 31. • Water levels through the end of December 2005 indicate that the water level differential was greater than 3 feet.
January 2006	<ul style="list-style-type: none"> • The pretreatment system is operating using temporary generator power until Seattle City Light installs the permanent power on January 4. Water levels in control wells DM-8 and MW-49 monitored using a portable data logger while the pretreatment system is relocated. • The Pre-Demolition Investigation's inspection of the above-grade piping within the main warehouse building conducted by PSC Industrial Services from January 4 through January 6. • The groundwater pretreatment system begins full operation under automatic control using the inputs from the control transducers on January 17. The water level differential between DM-8 and MW-49 is approximately 2.8 feet at the end of January, and the pretreatment system remains under automatic control. • A letter is sent to EPA on January 23 requesting reductions in the frequency of groundwater sampling and elimination of certain analytes, including the general water chemistry parameters. • A soil removal plan is delivered to EPA on January 24 discussing removal of copper-affected soils from the northwest corner of the Western Parcel, and the collection of soil confirmation samples to confirm that the affected soils have been removed. The monthly progress report for December 2005 delivered to EPA on January 10. • The Annual Performance Evaluation Report for 2004-2005 is being prepared during January, with content similar to the revised Annual Performance Evaluation Report for 2003-2004. Since comments on the revised 2003-2004 report had not yet been finalized by EPA, submittal of the 2004-2005 report is delayed until comments on the earlier report had been received.
February 2006	<ul style="list-style-type: none"> • The Pre-Demolition Investigation Report sent to EPA on February 1. • A draft technical memorandum sent to the County on February 8 discussing costs for direct discharge of treated groundwater to the Duwamish Waterway. • EPA provides comments on the Western Parcel Redevelopment Work Plan in a letter received on February 9. • The monthly progress report for January 2006 is delivered to EPA on February 10. • EPA approves the revised well abandonment list in a letter received on February 14. • The Implementation Report and the revised O&M manual submitted to EPA on February 16. • The Round 30 Performance Monitoring Report submitted to EPA on February 23. • A general soil sampling QAPP is developed and sent to EPA on February 24.

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Approximate Date	Description or Activity
March 2006	<ul style="list-style-type: none"> • EPA staff meet with Geomatrix staff in an informal meeting at EPA’s offices on March 6. EPA staff present the concept of dividing the East Parcel into several large areas, and then collecting representative multiincremental soil samples using a statistical approach from throughout each of these areas in order to determine whether the areas could be considered clean. EPA staff also broach this multiincremental sampling approach with Ecology headquarters’ staff to determine the acceptability of using large composite samples to determine whether areas within the East Parcel are clean for the constituents of concern present within the parcel. • In a letter received on March 10, EPA conditionally approves proposed reductions in the frequency of groundwater sampling, and elimination of analytes. EPA specifies that the sampling frequency for performance monitoring wells located inside the barrier wall could decrease to semiannual sampling, but that all performance monitoring wells located outside the barrier wall should still be sampled quarterly. EPA requests that a revised PMP be submitted within 30 days after receipt of the conditional approval letter. • The monthly progress report for February 2006 delivered to EPA on March 10. • EPA provides comments on the Affected Soil Removal Plan (submitted in late January 2006) in a letter received on March 20. EPA has requested that multiple composite samples be collected to both identify the location of the copper-affected soils and confirm that the affected soils had been removed. • The Round 31 quarterly groundwater quality monitoring event completed from March 21 through March 23. • An extension request for the waste discharge permit sent to the County on March 23 requesting extension of the current permit for 3 more years. This request includes a revised version of the technical memorandum submitted to the County in February 2006 that compared costs for direct discharge to the Duwamish Waterway to continued discharge to the County sanitary sewer system. • The County approves the extension request for the waste discharge permit on March 28. • Geomatrix receives letter from the EPA on March 30 requesting that Page 2 of the Western Parcel Redevelopment Work Plan be modified and resubmitted.
April 2006	<ul style="list-style-type: none"> • The Stormwater Pollution Prevention Plan (SWPPP) hard copy is updated on April 1 to reflect upcoming work on the East Parcel. • The single revised page of the Western Parcel Redevelopment Work Plan sent to EPA on April 4. • All but three of the monitoring wells scheduled for abandonment are abandoned on April 4 and April 5. • Monthly Progress Report for March 2006 delivered to EPA on April 7. • A letter from EPA received on April 7 provides EPA’s comments on the Pre-Demolition Investigation Report. • Demolition of the existing site buildings begins on April 10. • The PMP is revised and submitted to EPA by April 10. • Container Properties requests a one time variance for discharge to the County sanitary sewer system for treated liquids from sumps on April 17. • The Affected Soil Removal plan is revised to address EPA comments and submitted to EPA on April 19. • A notice of intent is submitted to the Department of Ecology to update the Construction Stormwater Permit on April 20. • EPA meets with Geomatrix on April 24 to discuss the proposed multiincremental sampling approaches used for the East Parcel, and the delineation and removal of affected soil in the northwest corner of the site. EPA indicates that the general soil sampling QAPP will need to be revised to address the multiincremental soil sampling approaches that will be used for collecting soils samples in the future. • Materials from the Scale Pit Room, Scale Pit Sump, and miscellaneous waste materials that PSC Industrial Services identified in the main building during the predemolition investigation are shipped off site on April 26. • Container Properties request for a one-time variance to discharge treated sump liquids to King County sanitary sewers is approved on April 18. • On April 28 EPA is verbally notified that a petroleum hydrocarbon release was discovered near one of the old transformers located on site. The EPA project coordinator orally approves an interim action to excavate the petroleum hydrocarbon-affected soil on April 28. • Container Properties submits a new public notice concerning the upcoming changes to the stormwater system. The first notice is published on April 30.

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May 2006	<ul style="list-style-type: none"> • In May, four formerly missing groundwater monitoring wells are located (MW-20, MW-21, MW-31, and MW-32). • A report on the interim action for petroleum hydrocarbon-affected soil is sent to EPA on May 5. • Container Properties submits a new public notice concerning the upcoming changes to the stormwater system. The second notice is published May 7. • The Pre-Demolition Investigation Report is revised to address EPA comments and submitted to EPA on May 8. • On May 9 monitoring well MW-38 is severely damaged during tree grubbing in the Northwest Corner of the site. • In a letter dated May 10, EPA directs the Respondents to submit a Corrective Measures Study (CMS) work plan for the East Parcel in accordance with Paragraphs 6.18 to 6.20 of the Order. • On May 10 a sump is discovered during redevelopment activities. EPA is notified verbally. The historical drawings identify this sump as the 1-190 Sump. • Monthly progress report for April 2006 delivered to EPA on May 10. • In a letter dated May 11, EPA is notified that the Round 32 quarterly groundwater event would be conducted during the week of June 6. Container Properties requests that EPA approve suspension of groundwater monitoring during redevelopment activities from July through September 2006. • The revised East Parcel Soil Characterization Work Plan sent to EPA on May 11, along with the final Soil Sampling QAPP. • On May 16, the treated water from the Copper, 1-120, and 1-190 sumps is pumped to King County sewers per the variance obtained in April. • Demolition of buildings continues through approximately May 17. • Sediments in the Copper, 1-120, and 1-190 sumps are removed and disposed. On May 17, these three sumps are demolished and filled with concrete; EPA is notified about the waste removal in a letter dated May 25. This letter includes analytical results from the waste analyses. • EPA provides conditional approval of the revised East Parcel Soil Characterization Work Plan, the soil QAPP, and the Affected Soil Removal Plan in a letter dated May 23. EPA requests that certain pages of the Affected Soil Removal Plan and the QAPP be modified. • The Round 31 Performance Monitoring Report and a letter detailing the interim remedial actions taken for the 1-190 sump are sent to the EPA on May 25. • On May 25, the extraction system piping and electrical supply to EX-3 is disrupted; EX-3 is turned off but the system remains in automatic control. • In a letter dated May 30, EPA is notified that a small sump measuring approximately 2 feet by 2 feet was uncovered at the site. Research shows this sump was a catch basin likely related to the former hazardous waste storage area at the site. Samples indicated it contained water, diesel- and oil-range hydrocarbons, as well as some sediment.
June 2006	<ul style="list-style-type: none"> • EPA is present on site periodically during field investigations. • EX-3 is repaired and returned to automatic operation on June 1. • The field activities associated with the Affected Soil Removal Plan began on June 1 and continue through June 5. • The monthly water level measurement event and the Round 32 quarterly monitoring event for June 2006 are completed on June 5 and June 6. All wells scheduled for water level measurements are measured and sampled, except monitoring well MW-38, which was inadvertently destroyed during site redevelopment activities in May. • The East Parcel Characterization field work begins on June 5, and concludes on June 13. • Monitoring wells MW-21, MW-31, and MW-32 are abandoned by Holt Drilling on June 13, as previously approved by EPA. MW-38 was inadvertently destroyed during site redevelopment activities, and this well as abandoned by overdrilling on June 13. • Final copies of the Soil QAPP and the Affected Soil Removal Plan provided to EPA on June 19. • The East Parcel CMS Work Plan sent to EPA on June 30.
July 2006	<ul style="list-style-type: none"> • The June 2006 progress report required under the Order sent to EPA on July 7. • A letter from King County dated July 13 requests adding a "Slug Discharge Control Plan" to the operation and maintenance manual. • Container Properties receives a comment letter on July 14 that required minor changes to the Implementation Report for the HCIMCWP Modification. • The Revised Implementation Report for the HCIMCWP modification sent to EPA on July 20. • The copper-affected soils in the northwest corner of the site are excavated and temporarily stockpiled on site on July 20 and July 21. • EPA provides conditional approval of the East Parcel CMS Work Plan in a letter received on July 31. • EPA provides conditional approval of this suspension in sampling and water level measurement in a letter received on July 31.

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Approximate Date	Description or Activity
August 2006	<ul style="list-style-type: none"> • Additional soil removal activities at the site continue during August. • On August 7, a contractor inadvertently breaks the communication wiring leading to the control well transducers. The transducers are checked and are not damaged by the disruption to the wiring. Immediate temporary repairs are made to the wiring. • The Round 32 Performance Monitoring Report delivered to EPA on August 7. • On August 8, contractors discover a small buried sump assumed to be a former oil water separator. Liquid and sediment samples are taken for analysis; no record of this sump is found in site documents. • The East Parcel Soil Characterization Data Report and the Well Abandonment Report delivered to EPA on August 8. • A revised CMS Work Plan submitted to EPA on August 9. • The July 2006 progress report required under the Order sent to EPA on August 10. • On August 10, sample results indicate PCB and TPH contamination in the former oil water separator. EPA is informed verbally and a cleanup action is planned. • The transducer wiring is repaired permanently by August 11. • On August 15, contractors damage the groundwater discharge piping leading from EX-1 to the pretreatment system. • The Former Oil/Water Separator interim action report delivered to EPA on August 17. • Container Properties requests a one-time variance from King County for discharge of liquids from the West Parcel excavation dewatering to King County sanitary sewers on August 17. • King County approves the one-time variance for discharge of West Parcel dewatering liquids on August 21. • The Voluntary Interim Measure, Hazardous Waste Storage Area and Transformer A Area Cleanup report delivered to EPA on August 18. • Christy Brown and Rene Fuentes of EPA visit the site with Geomatrix staff during the week of August 21 to observe the cleanup of the toluene-affected soil in the East Parcel. • Soil cleanup confirmation sample results received on August 24 indicate that all areas within the East Parcel meet the unrestricted land use preliminary remediation goals (PRGs) for copper. • Repairs to EX-1 completed on August 31.
September 2006	<ul style="list-style-type: none"> • On September 1, West Parcel excavation dewatering liquids are treated and pumped to King County sanitary sewers. • The August 2006 Progress Report required under the Order sent to EPA on September 11 since September 10 is a Sunday. • Installation of the new stormwater system for the West Parcel completed. • On September 21, stormwater discharging from the East Parcel has an elevated pH of 8.97 pH units, above the discharge limit of 8.5 pH units. Ecology is verbally notified and the source (crushed concrete) of the discharge is removed. • Results of the East Parcel Site Characterization field investigation identify several areas of soil in the East Parcel requiring cleanup. Additional soil removal activities at the site are completed on September 23. The soils excavated from the East Parcel destined for off-site disposal are stockpiled on the East Parcel. • A letter report documenting the high-pH discharge and response actions sent to Ecology on September 26. • The final East Parcel CMS Report submitted to EPA on September 28. • The East Parcel Soil Characterization and Voluntary Interim Measure Report delivered to EPA on September 29.

TABLE 1

HYDRAULIC CONTROL INTERIM MEASURE TIMELINE^{1,2}
Former Rhone-Poulenc Site
Tukwila, Washington

Approximate Date	Description or Activity
October 2006	<ul style="list-style-type: none"> • Container Properties requests a one-time variance from King County for discharge of liquids from the East Parcel excavation dewatering to King County sanitary sewers on October 3. • King County approves the one-time variance on October 5. • Two batch discharges of treated water from the East Parcel excavation totaling 14,000 gallons sent to King County sanitary sewers on October 6 and October 9. Sampling results are included in monthly King County reporting and the EPA is copied. • The September 2006 progress report sent to EPA on October 10. • Restoration of the groundwater and extraction well monuments begins. • Barghausen Consulting Engineers resurveys the wells on October 13. All of the monitoring wells are resurveyed for horizontal and vertical coordinates. • Additional delineation of the toluene release on the West Parcel completed on October 13, through completion of seven direct-push borings. • Geomatrix project staff and EPA project staff hold informal meeting on October 17, to review the site redevelopment activities and planned deliverables for the site. • Groundwater sampling resumes. The Round 33 quarterly groundwater sampling event is conducted from October 24 through October 26. • All of the soils stockpiled in the East Parcel are removed by October 20. The soils are taken to nearby rail loading stations and shipped to Subtitle D landfills. • EPA reviews the CMS report and provides conditional approval of the CMS in a letter received on October 23. • A Slug Discharge Control Plan is submitted to King County on October 25, and appended to the Revised Operation and Maintenance Manual. • MW-38 replaced by MW-38R on October 27. • A revised East Parcel CMS Report addressing each of the modifications submitted to EPA on October 31. • The new West Parcel stormwater system becomes operational after it was inspected by the City of Tukwila. • The former excavation in the East Parcel is backfilled, compacted, and hydroseeded to stabilize the soil.
November 2006	<ul style="list-style-type: none"> • The majority of site redevelopment is complete. • IAAI begins moving operations onto the West Parcel. • The October 2006 progress report sent to EPA on November 9. • On November 7, elevated turbidity is recorded in a runoff sample from the East Parcel, exceeding stormwater requirements. Ecology verbally notified. • A noncompliance discharge monitoring report detailing turbidity issues submitted to Ecology on November 10. • A letter is sent to IAAI on November 14 detailing the access procedures for entering the West Parcel through IAAI leased property and the anticipated monitoring schedule. • On November 15, a pH of 6.14 is measured in the runoff from the freshly paved West Parcel, below the permissible lower pH limit of 6.50 pH units. Ecology verbally notified. • A report detailing this noncompliance sent to Ecology on November 10. • A letter report sent to Ecology detailing the low pH noncompliance on November 20. • The wellhead resurvey completed on November 20.
December 2006	<ul style="list-style-type: none"> • The majority of Site redevelopment work is complete. Minor landscaping along the western boundary of the West Parcel is awaiting issuance of a permit from the City of Tukwila. • IAAI now controls access to the West Parcel. • The November 2006 Progress Report sent to EPA on Monday, December 11. • The Round 34 groundwater monitoring event occurs from December 11 through December 13. • On December 14, two groundwater samples are collected from the direct-push borings located in the southwestern corner of the East Parcel, in the area where toluene-affected soils were excavated during Summer 2006. Both groundwater samples contain toluene at concentrations exceeding the final groundwater cleanup level of 1.0 mg/L. • Comments from EPA Region 10 and from the EPA Risk Management Research Laboratory on the revised 2003-2004 Annual Performance Evaluation Report are received on December 14. EPA directs that the 2003-2004 report be revised to include data from the start of the interim measure in August 2003 through the end of October 2006 in a single multiyear report. • In a letter dated December 20, EPA transmits a final decision regarding corrective action for the East Parcel. This final decision states the “Corrective Action Complete without Controls” determination had been granted for the East Parcel, with the exception of the southwestern portion of the East Parcel. The southwestern portion of the East Parcel with toluene-affected groundwater covers approximately 2,900 square feet, which is approximately 1% of the total surface area of the East Parcel. • The Round 33 Performance Monitoring Report for October 2006 was to EPA on December 26.

Notes:

1. This timeline was compiled based on the Monthly Progress Reports submitted to U.S. EPA and verified against RCI documentation and Geomatrix documentation.
2. See List of Abbreviations and Acronyms following the table of contents for abbreviations used in this table.

TABLE 2
HCIM OPERATIONAL PROBLEM RESOLUTION¹

Former Rhone-Poulenc Site
Tukwila, Washington

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Date Encountered	Operational Issue Encountered	Operational Issue Resolution	Date Resolved
August 2003	Formal operating and maintenance logs and inspections were not documented from August 2003 to April 2004.	Formal inspection and maintenance process commenced in April 2004 with weekly inspection reports.	April 7, 2004
September 15, 2003	Original groundwater extraction rates not high enough to meet 1-foot differential groundwater elevation standard.	Higher capacity groundwater extraction pumps were installed in extraction wells. Higher flow capacity 1500-pound liquid-phase carbon GAC units were installed in place of original lower capacity GAC units. Several new KCDNRP permits were applied for in order to discharge the greater volumes of pretreated groundwater. The water level differential standard was achieved on February 23, 2004.	June 15, 2004
October 31, 2003	Lift station pump failure.	Regular maintenance of lift station equipment was performed to minimize difficulties. Lift station bypassed and abandoned during pretreatment system relocation in January 2006.	November 18, 2003
March 24, 2004	Power failure due to vandalism.	Temporary power was being supplied by diesel-powered generators for the pumps, the pretreatment system, and the lift station. Power restored by April 2, 2004, with data recording resuming on April 5, 2004.	April 5, 2004
March 24, 2004	Data recorder failed to reset after power failures.	Data recorder must be reset manually after any power failure. Any data that should have been collected during this period are not recoverable. Due to 72-hour averaging period for calculation of water levels, the average water levels cannot be computed until 72 hours of data are collected.	April 5, 2004
March 25, 2004	Rental power generator ran out of fuel or required maintenance.	Short shutdowns became a routine occurrence following the vandalism and switch to generator power. Fueling and maintenance were provided on a regular basis until redevelopment. The generators were replaced with permanent power connection during pretreatment system relocation in January 2006.	January 2006
April 7, 2004	Fence requires repairs.	Fences temporarily repaired beginning in April 2004. Fences repaired permanently on February 28, 2005. The site was kept closed and secured with a lock.	February 28, 2005

TABLE 2
HCIM OPERATIONAL PROBLEM RESOLUTION¹

Former Rhone-Poulenc Site
Tukwila, Washington

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Date Encountered	Operational Issue Encountered	Operational Issue Resolution	Date Resolved
May 5, 2004	Transducer cable malfunctioned due to electrical signal short at wellhead.	Damaged cable replaced. Field personnel were advised to avoid kinking the transducer cable at wellhead when collecting water levels or groundwater samples from DM-8 and MW-49.	May 19, 2004
July 16, 2004	Software issue noted by RCI.	Computer personnel were sent on site to fix the software issues.	July 29, 2004
August 25, 2004	Malfunctioning disk in data recorder, and no operational data recorded.	The malfunctioning disk was replaced. Data on malfunctioning disk were not recoverable.	September 15, 2004
December 31, 2004	Power generator ran out of fuel.	Fueling and maintenance were provided on a regular basis. Additional supplemental fuel was stored on site in case fuel deliveries were interrupted. The fuel delivery service was notified that they must alert Geomatrix if the generators were shut down for maintenance, or if they could not make their scheduled fuel delivery.	January 4, 2005
February 2005	System switched to "hand" mode to increase pumping for system relocation.	System relocation was delayed, but the upgraded PLC system was installed, and the system was reverted to "Auto" mode in July 2005.	July 2005
March 9, 2005	Replacement generator installed and failed sometime on March 9, surging periodically. These surges caused sudden spikes in the power supplied to the treatment equipment.	The autodialer, modem, and pump controllers were damaged by the power surges. The power surges caused the datalogger to record incorrect data. The groundwater pumps were operated manually in the interim, as required to maintain the differential water level. It was determined that the power surges were caused by contaminated fuel in the replacement generator; the problem has been rectified and the generator is running smoothly.	March 11, 2005
March 9, 2005	A difference of approximately 0.53 feet was found between the manual water level readings and transducer water level readings for DM-8 and MW-49.	The new project control engineer suggested a more reliable method for calibration of the transducer, and this method was adopted when both DM-8 and MW-49 were recalibrated on March 22, 2005. The transducers in both wells were more finely recalibrated on April 9, 2005, using measurements at high and low tides.	April 9, 2005

TABLE 2
HCIM OPERATIONAL PROBLEM RESOLUTION¹

Former Rhone-Poulenc Site
Tukwila, Washington

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Date Encountered	Operational Issue Encountered	Operational Issue Resolution	Date Resolved
March 9, 2005	The top of the well casings for wells A2 and B1B were trimmed off by RCI during well monument restoration.	Approximately 0.75 inch was chipped off from each well. Tops of casings for A2 and B1B were evened out, and the top of casing elevations were resurveyed by Coates Surveying on July 15, 2005.	July 15, 2005
March 15, 2005	The Horiba U-22 multiparameter meter used during Round 27 malfunctioned during the event – both pH reading and oxidation/reduction potential (ORP) readings were incorrect.	A replacement meter was obtained. The laboratory pH readings for March were substituted for field pH readings, and the ORP readings were flagged as invalidated data.	March 17, 2005
March 24, 2005	Effluent flow meter indicates flows when pumps are off.	Flow meter electrodes were cleaned on April 8, 2005, and the flow meter was removed for repairs on April 15, 2005. A valve was placed in line so flow to the lift station could continue. The totalizers for the three individual extraction wells were added for effluent flow calculations until the unit was replaced in September 2005.	September 8, 2005
March 31, 2005	Power generator required maintenance.	The fuel delivery service has been notified that they must alert Geomatrix if the generators are shut down for maintenance or if they cannot make their scheduled fuel delivery. The generator was fixed and operable on the same day, but due to the differential being based on a 72 hour average, the first reported water level after this outage is on April 3, 2005.	March 31, 2005
April 1, 2005	Pump starters are too easily tripped, resulting in pump failure.	Possible generator surge problems investigated, but determined not to be the cause. Starter switches replaced with higher amperage units in October 2005.	October 12, 2005
April 5, 2005	Power generator required maintenance.	The fuel delivery service has been notified that they must alert Geomatrix if the generators are shut down for maintenance, or if they cannot make their scheduled fuel delivery.	April 8, 2005
April 8, 2005	Lid for purge tank does not fit.	New lid ordered but did not fit. Lid manufactured out of 0.5-inch polyethylene and installed in June 2005.	June 22, 2005

TABLE 2
HCIM OPERATIONAL PROBLEM RESOLUTION¹

Former Rhone-Poulenc Site
Tukwila, Washington

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Date Encountered	Operational Issue Encountered	Operational Issue Resolution	Date Resolved
April 19, 2005	The generator that powers the pretreatment system failed to produce power at 4:00 AM.	Power was restored at 6:00 AM.	April 19, 2005
April 19, 2005	Wells MW-27 and MW-28 are inaccessible due to the presence of nesting Canadian geese.	Christy Brown, of the EPA, verbally approved the decision to skip measurements at these two wells during the month of April.	April 19, 2005
May 13, 2005	The generator produced a power surge that burned out the power supply for the PLC.	The power supply was replaced and operational the same day.	May 13, 2005
June 15, 2005	The data recorder did not record usable data. During several calibration checks conducted between June 15 and June 24, it was determined that the reprogramming provided erroneous water levels to the data recorder for Well DM-8 (the data were accurate for Well MW-49).	The programming problem was corrected on June 28, 2005, and the PLC and data recorder were then recalibrated. The PLC was reprogrammed on July 14, 2005 so that the calibration set points are restored after power is shut off to the pre-treatment system. This change should prevent loss of the calibration in the event of power loss to the system.	June 28, 2005
June 16, 2005	Autodialer alarms are incorrect.	Autodialer rewired and reprogrammed to reflect the correct alarms in June.	June 28, 2005
September 16, 2005	Power generator had high oil pressure.	The fuel delivery service has been notified that they must alert Geomatrix if the generators are shut down for maintenance, or if they cannot make their scheduled fuel delivery.	September 18, 2005
October 20, 2005	Two groundwater monitoring wells scheduled for water level measurements on October 20, 2005, were covered in gravel.	The gravel pile associated with construction of the pretreatment system that was inadvertently located directly atop the wells was moved. The field crew returned to the site on October 27, 2005, to collect a complete set of water levels for the monthly event.	October 27, 2005

TABLE 2
HCIM OPERATIONAL PROBLEM RESOLUTION¹

 Former Rhone-Poulenc Site
 Tukwila, Washington

Date Encountered	Operational Issue Encountered	Operational Issue Resolution	Date Resolved
December 5, 2005	Pretreatment system taken off line for relocation to new building. Portable data logger used to record water levels in DM-8 and MW-49.	The pretreatment system was operational after December 14 when using a generator. Seattle City Light had not completed hookup of permanent power by the end of December. Seattle City Light installed permanent power on January 4, 2006. The system controls were tested and were fully operational by January 17, 2006.	January 17, 2006
December 22, 2005	Leak at EX-3 sample port.	Valve is replaced.	December 23, 2005
January 13, 2006	PLC and data recorder readings not in agreement.	PLC and data recorder settings are updated. Both are within hundredths of units of each others readings.	January 16, 2006
January 17, 2006	MW-49 transducer readings are off scale.	Loose wire found at junction box is repaired	January 17, 2006
January 30, 2006	Hasp on front gate is broken.	Gate is locked with chain around poles in gate.	January 30, 2006
February 14, 2006	PLC flash card has no data on it.	File path is changed so that data are properly stored on flash card. Data recorder floppy disk was working properly so no data were lost.	February 15, 2006
May 10, 2006	Crews clearing and removing trees damaged MW-38 beyond repair.	The well was beyond repair and abandoned on June 13, 2006. A replacement well (MW-38R) was installed on October 27, 2006.	October 27, 2006
May 25, 2006	The removal of railroad ties between EX-3 and the groundwater pretreatment system damaged the discharge piping and the electrical lines from EX-3.	EX-3 was turned off, but the system remained under automatic control. Repairs were completed the first week of June, and EX-3 was returned to automatic operation.	June 1, 2006
June 1, 2006	Sample taps are clogged.	Taps are unscrewed at true union joints and cleaned.	June 1, 2006
August 7, 2006	The contractor inadvertently broke the communication wiring leading to the control well transducers.	The transducers were immediately checked and were not damaged by the disruption to the wiring. The wiring was temporarily repaired on August 7, 2006. The transducer wiring was repaired permanently by August 11, 2006.	August 11, 2006
August 15, 2006	Contractors damaged the groundwater discharge piping leading from EX-1 to the pretreatment system.	EX-1 was turned off, but the system remained under automatic control. Repairs were completed on August 31, 2006.	August 31, 2006

TABLE 2

HCIM OPERATIONAL PROBLEM RESOLUTION¹
 Former Rhone-Poulenc Site
 Tukwila, Washington

Date Encountered	Operational Issue Encountered	Operational Issue Resolution	Date Resolved
December 13, 2006	New flow totalizer for PLC does not read data.	Capacitors are installed for correct operation.	December 15, 2006

Notes:

1. See List of Abbreviations and Acronyms following the table of contents for abbreviations used in this table.

TABLE 3

MONTHLY PRETREATMENT SYSTEM ANALYTICAL SUMMARY¹Former Rhone-Poulenc Site
Tukwila, Washington

Month-Year	Sample Day	Sample Type ²	24 Hour flow (gallons)	Effluent Sample					Between GAC Units Sample					Influent Sample					Which Extraction Well Pumping?
				pH (pH units)	Benzene (µg/l) ³	Toluene (µg/l)	Ethylbenzene (µg/l)	HEM O&G ⁴ (mg/l)	pH (pH units)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	HEM O&G (mg/l)	pH (pH units)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	HEM O&G (mg/l)	
May-03	-	-	No discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun-03	-	-	No discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul-03	-	-	No discharge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug-03	8	G	No record ⁵	6.60	10	10	10	4,700	6.61	10	10	10	4,700	6.52	10	10	10	4,700	No record
Aug-03	15	G	No record	6.58	10	10	10	4,700	6.57	10	10	10	4,700	6.59	10	10	10	4,700	No record
Aug-03	22	G	No record	6.65	10	10	10	5,000	6.67	10	10	10	5,000	6.70	10	10	10	5,000	No record
Aug-03	29	G	3,442	6.70	1.0	1.0	1.0	4,700	6.70	1.0	1.0	1.0	4,700	6.66	1.0	1.0	1.0	4,800	No record
Sep-03	12	G	No record	6.74	1.0	1.0	1.0	5,000	6.72	1.0	1.0	1.0	5,000	6.69	1.0	1.0	1.0	5,000	No record
Sep-03	26	G	17,280	6.67	1.0	1.0	1.0	4,700	6.67	1.0	1.0	1.0	4,700	6.69	1.0	1.0	1.0	4,700	No record
Oct-03 ⁶	NA ⁷	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nov-03	18	G	16,272	8.45	1.0	1.0	1.0	5,300	7.81	1.0	1.0	1.0	5,300	6.62	1.0	1.0	1.0	5,300	No record
Dec-03	3	G	19,152	6.66	1.0	1.0	1.0	5,300	6.67	1.0	1.0	1.0	5,300	6.63	1.0	1.0	1.0	5,300	No record
Jan-04	5	G	20,448	6.79	1.0	1.0	1.0	4,700	6.75	1.0	1.0	1.0	9,900	6.72	1.0	1.0	1.0	4,700	No record
Feb-04	4	G	20,160	6.65	1.0	1.0	1.0	5,200	6.65	1.0	1.0	1.0	5,200	6.45	1.0	1.0	1.0	5,200	No record
Feb-04	27	G	9,504 ⁸	6.54	1.0	1.0	1.0	5,300	6.55	1.0	1.0	1.0	5,300	6.57	1.0	1.0	1.0	5,300	No record
Mar-04	31	G	13,430	6.46	1.0	1.0	1.0	5,200	Not indicated ⁹	1.0	1.0	1.0	Not indicated	6.40	1.0	1.0	1.0	5,200	No record
Apr-04	28	G	9,280	6.67	1.0	1.0	1.0	5,300	6.69	1.0	1.0	1.0	5,300	6.64	1.0	1.0	1.0	5,300	EX-1
May-04	26	G	27,224	6.59	1.0	1.0	1.0	5,300	6.58	1.0	1.0	1.0	5,300	6.51	1.0	1.0	1.0	5,300	EX-1 & EX-2
Jun-04	30	G	40,965	6.53	1.0	1.0	1.0	4,800	6.47	1.0	1.0	1.0	5,800	6.48	1.0	1.0	1.0	4,600	Not indicated
Jul-04	29	G	48,393	6.57	1.0	1.0	1.0	5,900	6.59	1.0	1.0	1.0	5,300	6.80	1.0	1.0	1.0	5,200	Not indicated
Aug-04	30	G	16,283	6.34	1.0	1.0	1.0	5,600	6.41	1.0	1.0	1.0	5,400	6.48	1.0	1.0	1.0	5,800	Not indicated
Sep-04	29	G	11,871	6.55	1.0	1.0	1.0	5,600	6.52	1.0	1.0	1.0	5,600	6.48	1.0	1.0	1.0	5,600	EX-2
Oct-04	27	G	1,046	6.66	1.0	1.0	1.0	5,800	6.68	1.0	1.0	1.0	5,700	6.59	1.1	1.0	1.0	5,700	No record
Nov-04	29	G	23,082	6.65	1.0	1.0	1.0	6,000	6.70	1.0	1.0	1.0	6,100	6.74	1.0	1.0	1.0	6,100	No record
Jan-05	3	G	0 ⁸	6.73	1.0	1.0	1.0	6,300	6.68	1.0	1.0	1.0	6,400	6.45	1.0	1.0	1.0	6,400	Not indicated
Jan-05	25	G	367	6.64	1.0	1.0	1.0	5,200	6.66	1.0	1.0	1.0	5,700	6.33	1.0	1.0	1.0	5,800	EX-1
Feb-05	23	G	42,800 ⁸	6.60	1.0	1.0	1.0	6,200	6.63	1.0	1.0	1.0	6,000	6.62	1.0	1.0	1.0	6,200	all three
Mar-05	15	G	20,700 ⁸	6.61	1.0	1.0	1.0	5,000	6.63	1.0	1.0	1.0	5,000	6.62	1.0	1.0	1.0	5,000	Not indicated
Mar-05 ¹¹	17	C	900 ⁸	8.40	1.0	1.0	1.0	5,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-05	21	G	No record	6.77	1.0	1.0	1.0	6,000	6.68	1.0	1.0	1.0	6,200	6.70	1.0	1.0	1.0	6,000	EX-2
May-05	27	G	9,145	6.58	1.0	1.0	1.0	4,900	6.57	1.0	1.0	1.0	4,900	6.46	1.0	1.0	1.0	5,100	EX-2
Jun-05	30	G	9,717	6.77	1.0	1.0	1.0	6,500	6.74	1.0	1.0	1.0	6,000	6.76	1.0	1.0	1.0	6,200	EX-2
Jul-05	14	G	9,893	6.73	1.0	1.0	1.0	5,800	6.70	1.0	1.0	1.0	5,600	6.68	1.0	1.0	1.0	5,300	EX-2
Aug-05	22	G	10,238	6.61	1.0	1.0	1.0	6000.0	6.58	1.0	1.0	1.0	5,700	6.59	1.0	1.0	1.0	5,900	EX-2
Sep-05	21	G	9,370	6.68	1.0	1.0	1.0	6,200	6.69	1.0	1.0	1.0	5,700	6.71	1.0	1.0	1.0	5,700	EX-2
Oct-05	19	G	21,180 ⁸	6.71	1.0	1.0	1.0	5,700	6.65	1.0	1.0	1.0	5,700	6.63	1.0	1.0	1.0	5,900	all three
Nov-05	16	G	22,038	6.76	1.0	1.0	1.0	5,800	6.68	1.0	1.0	1.0	5,700	6.75	1.0	1.0	1.0	6,000	all three
Dec-05	22	G	12,641	6.78	1.0	1.0	1.0	5,700	6.71	1.0	1.0	1.0	5,700	6.71	1.0	1.0	1.0	5,700	all three
Jan-06	30	G	19,724	6.67	1.0	1.0	1.0	5,000	6.65	1.0	1.0	1.0	5,000	6.59	1.0	1.0	1.0	5,000	EX-1
Feb-06	16	G	52,104	6.63	1.0	1.0	1.0	5,600	6.65	1.0	1.0	1.0	5,600	6.62	1.0	1.0	1.0	5,600	all three
Mar-06	21	G	16,000	6.62	1.0	1.0	1.0	5,600	6.61	1.0	1.0	1.0	5,000	6.56	1.0	4.4	1.0	5,600	EX-3
Apr-06	12	G	19,100	6.63	1.0	1.0	1.0	5,200	6.63	1.0	1.0	1.0	5,200	6.63	1.0	15	1.0	5,200	EX-3
May-06	16	G	11,500	6.72	1.0	1.0	1.0	4,700	6.70	1.0	1.0	1.0	4,700	6.68	1.0	1.0	1.0	4,700	EX-1
May-06 ¹¹	16	C	14,000	NA	1.0	1.0	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jun-06	22	G	17,800	6.64	1.0	1.0	1.0	4,700	6.66	1.0	1.0	1.0	4,700	6.70	1.0	9.0	1.0	4,700	all three
Jul-06	14	G	1,400	6.65	1.0	1.0	1.0	4,700	6.64	1.0	1.0	1.0	4,700	6.69	1.0	1.6	1.0	4,700	all three
Aug-06	11	G	1,800	6.46	1.0	1.0	1.0	4,900	6.44	1.0	1.0	1.0	5,000	6.53	1.0	8.5	1.0	5,000	all three
Sep-06 ¹¹	1	C	9,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.47	1.0	2.1	1.0	5,900	NA
Sep-06	18	G	1,000	6.64	1.0	1.0	1.0	4,700	6.65	1.0	1.0	1.0	5,000	6.71	1.0	1.0	1.0	5,200	EX-2
Oct-06 ¹¹	9	C	5,900	6.83	1.0	1.0	1.0	5,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-06	17	G	1,400	6.82	1.0	1.0	1.0	4,900	6.73	1.0	1.0	1.0	4,600	6.61	1.0	1.0	1.0	4,900	all three
Nov-06	21	G	1,100	6.59	1.0	1.0	1.0	4,700	6.66	1.0	1.0	1.0	4,900	6.53	1.0	1.0	1.0	4,800	all three
Dec-06	12	G	900	6.58	1.0	1.0	1.0	4,700	6.58	1.0	1.0	1.0	4,700	6.59	1.0	1.0	1.0	4,700	all three
KCDNRP Discharge Limits ¹⁰			65,000	5.0-12.0	130	1500	1400	100,000											

Notes:

- Bold numbers are results above the reporting limits, gray results are non-detects.
- Sample types : G = grab; C = composite.
- µg/L = micrograms per liter.
- HEM O&G = n-Hexane-extractable material, oil and grease.
- No records = No records available.
- System Failure resulted in no sample being taken in October 2003.
- NA = Not applicable.
- Estimated value from data recorder records
- Not indicated = Not indicated on the records available.
- Current KCDNRP discharge limits, historic limits have varied as discussed in the text Section 2.0.
- Batch discharge sampling event.

TABLE 4

MONTHLY GROUNDWATER DISCHARGE

Former Rhone-Poulenc Site
Tukwila, Washington

Month	2003		2004		2005		2006	
	Monthly Discharge Volume (gallons)	Average Flow Rate (gallons per minute) ¹	Monthly Discharge Volume (gallons)	Average Flow Rate (gallons per minute) ¹	Monthly Discharge Volume (gallons)	Average Flow Rate (gallons per minute) ¹	Monthly Discharge Volume (gallons)	Average Flow Rate (gallons per minute) ¹
January	--	--	624,960	14.0	131,592	2.9	259,977	5.8
February	--	--	470,220	11.3	1,160,363	28.8	863,846	21.4
March	--	--	879,943	19.7	355,149	8.0	563,300	12.6
April	--	--	282,569	6.5	299,007	6.9	363,200	8.4
May	--	--	693,712	15.5	306,381	6.9	131,500	2.9
June	--	--	170,580	3.9	287,153	6.6	415,600	9.6
July	--	--	438,355	9.8	258,870	5.8	181,800	4.1
August	85,463	1.9	103,377	2.3	294,361	6.6	289,800	6.5
September	336,823	7.8	183,952	4.3	265,248	6.1	177,000	4.1
October	522,228	11.7	215,756	4.8	610,806	13.7	294,300	6.6
November	295,032	6.8	419,845	9.7	618,840	14.3	1,100	0.0
December	651,744	14.6	128,484	2.9	15,567	0.3	108,700	2.4
Totals	1,891,290	8.6	4,611,753	8.8	4,603,338	8.8	3,650,123	6.9

Total since August 2003	Total discharge (Gallons)	Cumulative average flow rate ¹ (gallons per minute)
	14,756,504	7.0

Notes:

- Flow rates were calculated by dividing the amount of water discharged during the time frame by the number of minutes in that time frame. Actual instantaneous flow rates are higher.

TABLE 5

EXTRACTION WELL WEEKLY FLOW AND PRESSURE DATA

Former Rhone-Poulenc Site
Tukwila, Washington

Date	EX-1		EX-2		EX-3		Total Effluent Flow			Filter Infiltrant (psi ²)	Lead GAC ³ Infiltrant (psi)	Lag GAC Infiltrant (psi)	Lag GAC Effluent (psi)
	Flow Rate (gpm ¹)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Weekly Flow (gallons)	Weekly Flow (gallons)				
4/7/2004	9.30	1,219,542	Not Indicated ⁷	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	2	14	Not Indicated	NA ⁵
4/14/2004	9.10	1,140,623	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	2	15	Not Indicated	NA ⁵
4/21/2004	9.33	1,296,960	0.00	1,061,238	0.00	1,082,635	9.11	2,463,906	2,463,906	2	15	Not Indicated	NA ⁵
4/28/2004	9.30	1,374,777	0.00	1,061,238	0.00	1,082,635	9.00	2,539,739	2,539,739	2	14	Not Indicated	NA ⁵
5/5/2004	3.05	1,451,475	15.08	1,096,386	0.00	1,082,635	Not Indicated	Not Indicated	Not Indicated	10	32	Not Indicated	NA ⁵
5/12/2004	3.31	1,484,201	14.92	1,247,612	0.00	1,082,635	18.20	2,835,410	2,835,410	9	33	10	NA ⁵
5/19/2004	3.47	1,517,800	15.09	1,399,481	0.00	1,082,635	18.65	3,820,879	3,820,879	6	30	10	NA ⁵
5/26/2004	3.70	1,553,774	15.14	1,553,629	0.00	1,082,635	18.92	3,211,777	3,211,777	6	30	10	NA ⁵
6/2/2004	0.00	1,567,850	0.00	1,620,279	0.00	1,084,064	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	Not Indicated	NA ⁵
6/11/2004	0.00	1,585,054	0.00	1,674,812	0.00	1,085,494	0.00	4,333	4,333	0	0	0	NA ⁵
6/16/2004	0.00	1,585,062	0.00	1,674,814	0.00	1,085,494	0.00	4,333	4,333	0	0	0	NA ⁵
6/23/2004	0.00	1,585,062	0.00	1,674,815	0.00	1,085,621	13.80	63,512	63,512	0	0	0	NA ⁵
6/30/2004	0.00	1,616,728	0.00	1,702,039	0.00	1,136,406	0.00	174,429	174,429	0	0	0	NA ⁵
7/8/2004	10.56	1,650,827	5.95	1,721,998	17.09	1,191,146	Not Indicated	Not Indicated	Not Indicated	10	9	6	NA ⁵
7/16/2004	0.00	1,753,091	0.00	1,780,047	0.00	1,397,014	Not Indicated	608,572	608,572	Not Indicated	Not Indicated	Not Indicated	NA ⁵
7/22/2004	0.00	1,753,091	0.00	1,780,047	0.00	1,357,014	0.00	612,242	612,242	0	0	0	NA ⁵
7/29/2004	0.00	1,753,220	0.00	1,780,118	0.00	1,357,218	0.00	612,646	612,646	0	0	0	NA ⁵
8/4/2004	0.00	1,753,220	0.00	1,780,118	0.00	1,357,218	Not Indicated	Not Indicated	Not Indicated	0	0	0	NA ⁵
8/13/2004	0.00	1,753,220	0.00	1,780,118	0.00	1,357,218	0.00	613,214	613,214	0	0	0	NA ⁵
8/17/2004	11.33	1,790,390	0.00	1,780,118	0.00	1,357,218	Not Indicated	Not Indicated	Not Indicated	2	0	0	NA ⁵
8/26/2004	0.00	1,807,663	0.00	1,780,118	0.00	1,357,218	1.10	671,483	671,483	0	0	0	NA ⁵
8/30/2004	0.00	1,807,663	0.00	1,780,118	0.00	1,357,218	Not Indicated	Not Indicated	Not Indicated	0	0	0	NA ⁵
9/8/2004	0.00	1,817,597	0.00	1,780,174	0.00	1,357,219	Not Indicated	Not Indicated	Not Indicated	0	0	0	NA ⁵
9/16/2004	0.00	1,827,531	0.00	1,780,230	0.00	1,357,219	0.00	698,621	698,621	0	0	0	NA ⁵
9/23/2004	11.21	1,835,677	6.85	1,785,074	0.00	1,365,705	18.00	721,959	721,959	6	3	0	NA ⁵
9/29/2004	0.00	1,890,367	6.75	1,805,042	0.00	1,397,914	7.00	82,416	82,416	5	5	0	NA ⁵
10/6/2004	11.14	1,920,906	0.00	1,832,413	0.00	1,422,234	11.10	910,679	910,679	5	0	0	NA ⁵
10/14/2004 ⁶	9.87	1,971,160	6.61	1,862,630	16.03	1,452,138	32.40	1,020,865	1,020,865	15	9	6	NA ⁵
1/3/2005	0.00	2,229,048	0.00	1,999,903	0.00	1,656,166	0.00	1,632,142	1,632,142	0	0	0	NA ⁵

TABLE 5

EXTRACTION WELL WEEKLY FLOW AND PRESSURE DATA

Former Rhone-Poulenc Site
Tukwila, Washington

Date	EX-1		EX-2		EX-3		Total Effluent Flow		Filter Influent (psi ²)	Lead GAC ³ Influent (psi)	Lag GAC Influent (psi)	Lag GAC Effluent (psi)
	Flow Rate (gpm ¹)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)				
1/14/2005	0.00	2,229,048	0.00	1,999,903	0.00	1,656,166	0.00	1,633,570	0	0	0	NA ⁵
1/21/2005	0.00	2,264,135	0.00	2,015,589	0.00	1,664,056	0.00	1,694,803	0	0	0	NA ⁵
1/25/2005	10.30	12,264,375	0.00	2,015,689	0.00	1,664,116	0.00	1,695,203	10	2	0	NA ⁵
2/2/2005	8.50	2,197,166	5.92	2,040,935	13.66	1,701,530	28.20	182,805	23	7.5	4	NA ⁵
2/10/2005	7.50	2,283,232	5.48	2,102,157	0.00	1,830,304	Not Indicated	Not Indicated	29	4	0	NA ⁵
2/18/2005	9.66	2,393,457	6.59	2,168,480	16.03	1,999,973	32.70	2,450,924	9.5	13	6	NA ⁵
2/23/2005	10.00	2,458,859	5.85	2,214,004	16.85	2,107,827	32.80	2,672,042	10	10	6	NA ⁵
3/4/2005	10.25	2,585,576	7.00	2,280,717	0.00	2,351,536	17.60	3,083,195	7	0	0	NA ⁵
3/11/2005	6.58	2,663,232	4.74	2,331,397	0.00	2,327,654	12.10	3,219,658	32	0	0	NA ⁵
3/17/2005	0.00	2,712,831	0.00	2,364,052	0.00	2,327,654	0.00	3,304,105	0	0	0	NA ⁵
3/24/2005	0.00	2,712,831	0.00	2,364,052	0.00	2,328,736	0.00	3,324,535	0	0	0	NA ⁵
3/31/2005	Not Indicated	Not Indicated	0.00	2,364,052	0.00	2,328,838	28.10	3,490,437	0	0	0	NA ⁵
4/1/2005	0.00	2,712,831	6.85	2,364,327	0.00	2,328,838	6.90	3,502,447	3	0	0	NA ⁵
4/8/2005	0.00	2,712,831	6.89	2,366,861	0.00	2,328,838	5.00	3,563,460	1	0	0	NA ⁵
4/15/2005	0.00	2,712,831	6.95	2,436,401	0.00	2,328,995	0.00	3,623,778	3	0	0	NA ⁵
4/21/2005	0.00	2,712,831	7.00	2,495,204	0.00	2,328,999	NA ⁴	NA ⁴	2.5	1	0	NA ⁵
4/27/2005	0.00	2,712,831	6.93	2,555,319	0.00	2,329,004	NA ⁴	NA ⁴	1.5	0	0	NA ⁵
4/28/2005	0.00	2,712,831	6.85	2,563,833	0.00	2,329,004	NA ⁴	NA ⁴	3	2	0	NA ⁵
5/5/2005	0.00	2,712,831	6.91	2,632,579	0.00	2,329,004	NA ⁴	NA ⁴	3	4	1	NA ⁵
5/12/2005	0.00	2,712,831	6.85	2,701,860	0.00	2,329,004	NA ⁴	NA ⁴	3.5	4	2	NA ⁵
5/13/2005	0.00	2,712,831	6.87	2,712,866	0.00	2,329,004	NA ⁴	NA ⁴	2.5	1	0	NA ⁵
5/19/2005	0.00	2,712,831	6.85	2,771,084	0.00	2,329,004	NA ⁴	NA ⁴	3	4	1	NA ⁵
5/27/2005	0.00	2,712,831	6.86	2,849,193	0.00	2,329,004	NA ⁴	NA ⁴	2	3	1	NA ⁵
6/3/2005	0.00	2,712,831	6.90	2,919,107	0.00	2,329,004	NA ⁴	NA ⁴	3	3.5	1	NA ⁵
6/9/2005	0.00	2,712,831	6.89	2,978,713	0.00	2,329,004	NA ⁴	NA ⁴	3	4	1	NA ⁵
6/10/2005	0.00	2,712,831	6.83	2,853,400	0.00	2,329,004	NA ⁴	NA ⁴	3	1	0	NA ⁵
6/15/2005	0.00	2,712,832	6.95	2,896,439	0.00	2,329,634	NA ⁴	NA ⁴	2	1	0	NA ⁵
6/16/2005	0.00	2,712,832	6.98	2,905,034	0.00	2,331,531	NA ⁴	NA ⁴	1	1	0	NA ⁵
6/17/2005	0.00	2,712,886	6.85	2,914,723	0.00	2,331,532	NA ⁴	NA ⁴	3	3.5	1.5	NA ⁵

TABLE 5

EXTRACTION WELL WEEKLY FLOW AND PRESSURE DATA

Former Rhone-Poulenc Site
Tukwila, Washington

Date	EX-1		EX-2		EX-3		Total Effluent Flow		Filter Influent (psi ²)	Lead GAC ³ Influent (psi)	Lag GAC Influent (psi)	Lag GAC Effluent (psi)
	Flow Rate (gpm ¹)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Weekly Flow (gallons)				
6/22/2005	0.00	2,712,886	6.82	2,963,641	0.00	2,331,532	NA ⁴	NA ⁴	3	1	Not Indicated	NA ⁵
6/23/2005	0.00	2,712,886	6.85	2,972,315	0.00	2,331,532	NA ⁴	NA ⁴	3	1	Not Indicated	NA ⁵
6/24/2005	0.00	2,712,886	6.83	2,980,847	0.00	2,331,532	NA ⁴	NA ⁴	2.5	4	2	NA ⁵
6/28/2005	0.00	2,712,886	7.36	3,020,988	0.00	2,331,532	NA ⁴	NA ⁴	3	1	Not Indicated	NA ⁵
6/30/2005	0.00	2,712,933	6.71	3,040,748	0.00	2,331,670	NA ⁴	NA ⁴	3.5	3	1	NA ⁵
7/8/2005	0.00	2,712,938	0.00	3,085,246	0.00	2,331,674	NA ⁴	NA ⁴	0	0	0	NA ⁵
7/13/2005	0.00	2,712,938	6.82	3,132,835	0.00	2,331,675	NA ⁴	NA ⁴	0	0	0	NA ⁵
7/14/2005	0.00	2,712,938	6.86	3,140,763	0.00	2,331,675	NA ⁴	NA ⁴	0	0	0	NA ⁵
7/20/2005	0.00	2,713,160	6.98	3,197,519	0.00	2,331,954	NA ⁴	NA ⁴	0	0	0	NA ⁵
7/27/2005	0.00	2,712,938	6.76	3,269,578	0.00	2,331,676	NA ⁴	NA ⁴	0	0	0	NA ⁵
8/3/2005	0.00	2,712,938	6.82	3,338,423	0.00	2,331,676	NA ⁴	NA ⁴	0	0	0	NA ⁵
8/8/2005	0.00	2,712,938	6.79	3,387,183	0.00	2,331,676	NA ⁴	NA ⁴	2	3.7	2	NA ⁵
8/18/2005	0.00	2,712,938	6.79	3,486,202	0.00	2,331,676	NA ⁴	NA ⁴	0	0	0	NA ⁵
8/22/2005	0.00	2,712,938	7.36	3,524,816	0.00	2,331,676	NA ⁴	NA ⁴	0	4	2	NA ⁵
8/31/2005	0.00	2,712,938	6.87	3,612,838	0.00	2,331,676	NA ⁴	NA ⁴	0	0	0	NA ⁵
9/8/2005	0.00	2,712,938	6.82	3,690,383	0.00	2,331,676	NA ⁴	NA ⁴	1	1.5	0	NA ⁵
9/13/2005	0.00	2,713,055	6.89	3,738,979	0.00	2,332,023	NA ⁴	NA ⁴	1	0	1	NA ⁵
9/21/2005	0.00	2,713,055	6.84	3,799,792	0.00	2,332,023	NA ⁴	NA ⁴	1.5	1.5	0	NA ⁵
9/27/2005	0.00	2,713,055	6.83	3,857,565	0.00	2,333,029	NA ⁴	NA ⁴	1.5	1.5	0	NA ⁵
10/4/2005	0.00	2,713,055	6.91	3,927,526	0.00	2,333,029	NA ⁴	NA ⁴	1.9	1.5	0	NA ⁵
10/10/2005	0.00	2,713,055	6.89	3,967,341	0.00	2,333,076	NA ⁴	NA ⁴	1.9	1.8	0	NA ⁵
10/12/2005	10.60	Not Indicated	5.54	Not Indicated	16.16	Not Indicated	NA ⁴	NA ⁴	12	10	6.5	NA ⁵
10/14/2005	9.37	2,740,900	0.00	3,996,808	13.70	2,374,664	NA ⁴	NA ⁴	21	5	1.5	NA ⁵
10/17/2005	11.92	2,793,452	0.00	3,996,808	0.00	2,411,044	NA ⁴	NA ⁴	1	1	0	NA ⁵
10/19/2005	11.21	2,803,399	5.67	4,001,739	16.55	2,425,488	NA ⁴	NA ⁴	10	10	7	NA ⁵
10/25/2005	11.21	2,901,495	5.82	4,052,655	16.26	2,568,705	NA ⁴	NA ⁴	11	10	7	NA ⁵
10/31/2005	0.00	2,907,315	0.00	4,054,285	0.00	2,581,611	NA ⁴	NA ⁴	0	0	0	NA ⁵
11/8/2005	0.00	2,913,306	0.00	4,054,385	0.00	2,590,406	NA ⁴	NA ⁴	0	0	0	NA ⁵
11/16/2005	0.00	2,958,824	0.00	4,077,471	0.00	2,664,863	NA ⁴	NA ⁴	0	0	0	NA ⁵

TABLE 5

EXTRACTION WELL WEEKLY FLOW AND PRESSURE DATA

Former Rhone-Poulenc Site
Tukwila, Washington

Date	EX-1		EX-2		EX-3		Total Effluent Flow			Filter Influent (psf ²)	Lead GAC ³ Influent (psi)	Lag GAC Influent (psi)	Lag GAC Effluent (psi)
	Flow Rate (gpm ¹)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Weekly Flow (gallons)	Flow Rate (gpm)				
11/21/2005	11.60	3,032,537	0.00	4,189,641	16.63	2,761,616	NA ⁴	NA ⁴	NA ⁴	10	8	3	NA ⁵
11/29/2005	0.00	3,092,560	0.00	4,214,249	0.00	2,855,242	NA ⁴	NA ⁴	NA ⁴	0	0	0	NA ⁵
12/5/2005	0.00	3,092,560	0.00	4,214,249	0.00	2,855,450	NA ⁴	NA ⁴	NA ⁴	0	0	0	NA ⁵
1/17/2006	0.00	3,521	0.00	2,271	18.58	9,364	18.68	15,387	15,387	4	0	0	0 ⁷
1/20/2006	0.00	21,854	0.00	12,356	17.66	31,675	18.28	67,072	67,072	9.5	2	1	0
1/23/2006	12.57	40,067	0.00	19,216	0.00	57,517	12.79	119,002	119,002	7	1	0	0
1/27/2006	13.00	65,095	0.00	33,175	0.00	93,448	13.30	195,424	195,424	5	1	0	0
1/30/2006	12.52	123,231	0.00	33,175	0.00	93,448	12.82	254,600	254,600	9.5	1	0.5	0
2/1/2006	13.86	160,172	0.00	33,175	0.00	93,448	14.21	292,490	292,490	1.5	1	0	0
2/6/2006	13.29	259,183	0.00	33,175	0.00	93,448	13.65	393,607	393,607	6.5	1	0.5	0
2/10/2006	0.00	284,411	0.00	48,019	17.67	125,305	17.82	467,070	467,070	9.5	2.5	0.5	0
2/14/2006	11.75	354,732	5.42	82,569	16.06	219,053	33.80	669,112	669,112	15	5.5	4.5	3.5
2/16/2006	12.14	394,480	6.89	104,949	16.70	273,905	36.38	788,275	788,275	12	6.5	5.5	5
2/24/2006	0.00	485,128	6.41	154,425	0.00	394,861	5.17	1,054,038	1,054,038	20	1.5	1	0
3/1/2006	0.00	518,943	7.23	172,434	0.00	441,374	7.45	1,154,534	1,154,534	1	0	0	0
3/8/2006	12.90	562,723	0.00	195,907	0.00	504,939	13.13	1,287,930	1,287,930	8	0.5	0	0
3/16/2006	12.37	608,321	0.00	224,119	0.00	571,900	13.11	1,431,749	1,431,749	12	0	0	0
3/22/2006	0.00	642,030	6.61	244,046	0.00	610,180	9.56	1,525,597	1,525,597	16	1	0	0
3/31/2006	13.42	706,477	0.00	272,805	0.00	693,213	13.70	1,705,664	1,705,664	4	0	0	0
4/4/2006	0.00	706,518	0.00	272,805	0.00	693,213	0.00	1,705,743	1,705,743	0	0	0	0
4/12/2006	0.00	739,680	0.00	290,394	18.07	737,192	18.52	1,802,316	1,802,316	7	1	0.5	0
4/19/2006	0.00	765,614	7.33	304,290	0.00	753,858	9.94	1,861,981	1,861,981	6	1	0.5	0
4/25/2006	11.41	793,387	4.80	317,486	15.38	793,567	32.01	1,941,781	1,941,781	17	10	6	2
5/1/2006	0.00	834,883	6.74	338,700	0.00	850,520	5.47	2,063,614	2,063,614	15	0	0	0
5/10/2006	0.00	860,891	0.00	355,126	0.00	887,708	1.84	2,150,530	2,150,530	0	0	0	0
5/15/2006	0.00	860,891	0.00	355,126	0.00	887,708	0.00	2,150,530	2,150,530	0	0	0	0
5/31/2006	0.00	869,006	0.00	361,859	0.00	896,102	0.00	2,188,030	2,188,030	0	0	0	0
6/1/2006	13.35	875,928	6.89	364,926	0.00	896,102	20.54	2,198,862	2,198,862	4	0	0	0
6/5/2006	0.00	901,944	0.00	378,602	0.00	896,130	0.00	2,239,270	2,239,270	0	0	0	0
6/13/2006	0.00	948,050	0.00	402,976	0.00	958,367	0.00	2,372,016	2,372,016	0	0	0	0

TABLE 5

EXTRACTION WELL WEEKLY FLOW AND PRESSURE DATA

Former Rhone-Poulenc Site
Tukwila, Washington

Date	EX-1		EX-2		EX-3		Total Effluent Flow			Filter Influent (psi ²)	Lead GAC ³ Influent (psi)	Lag GAC Influent (psi)	Lag GAC Effluent (psi)
	Flow Rate (gpm ¹)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Weekly Flow (gallons)	Total Weekly Flow (gallons)				
6/22/2006	12.54	998,376	6.17	427,993	17.26	1,027,545	35.46	2,516,342	2,516,342	7.9	4.5	5.8	2.9
7/1/2006	0.00	1,029,622	0.00	443,242	0.00	1,070,344	0.00	2,605,695	2,605,695	0	0	0	0
7/7/2006	0.00	1,029,622	0.00	443,242	0.00	1,070,344	0.00	2,605,695	2,605,695	0	0	0	0
7/14/2006	0.00	1,060,111	0.00	458,075	0.00	1,112,340	0.00	2,692,923	2,692,923	0	0	0	0
7/21/2006	0.00	1,085,886	0.00	458,331	0.00	1,139,040	0.00	2,746,104	2,746,104	0	0	0	0
7/28/2006	0.00	1,085,886	0.00	458,331	0.00	1,139,040	0.00	2,746,104	2,746,104	0	0	0	0
8/4/2006	0.00	1,098,771	0.00	468,664	0.00	1,156,753	0.00	2,787,450	2,787,450	0	0	0	0
8/11/2006	11.83	1,118,146	5.23	484,288	15.98	1,191,738	32.47	2,858,422	2,858,422	14	5	5.5	0
8/14/2006	12.34	1,135,005	6.89	493,518	0.00	1,209,285	19.37	2,902,651	2,902,651	10	0	0	0
8/15/2006	0.00	1,137,087	0.00	499,028	18.79	1,211,822	17.61	2,911,804	2,911,804	0	0	0	0
8/22/2006	12.97	1,147,752	0.00	498,250	17.81	1,248,972	30.39	2,960,211	2,960,211	6	5	5	0
8/30/2006	0.00	1,163,755	0.00	505,460	0.00	1,335,779	0.00	3,071,303	3,071,303	0	0	0	0
9/1/2006	0.00	1,169,710	0.00	505,504	0.00	1,335,887	0.00	3,080,546	3,080,546	0	0	0	0
9/5/2006	0.00	1,169,710	0.00	505,504	0.00	1,335,887	0.00	3,080,546	3,080,546	0	0	0	0
9/14/2006	12.77	1,196,874	6.25	579,657	17.48	1,370,487	35.63	3,158,915	3,158,915	7	6	6.5	2
9/18/2006	0.00	1,204,764	7.28	520,659	0.00	1,383,275	4.49	3,178,799	3,178,799	0	0	0	0
9/25/2006	13.75	1,227,473	0.00	530,947	0.00	1,420,290	13.97	3,249,689	3,249,689	0	0	0	0
10/2/2006	0.00	1,232,019	0.00	530,947	0.00	1,420,290	0.00	3,254,268	3,254,268	0	0	0	0
10/6/2006	0.00	1,254,253	0.00	544,142	0.00	1,459,591	0.00	3,328,960	3,328,960	0	0	0	0
10/17/2006	0.00	1,261,225	0.00	545,264	0.00	1,459,743	0.00	3,352,569	3,352,569	0	0	0	0
10/23/2006	12.93	1,287,400	0.00	558,563	0.00	1,504,749	12.89	3,437,937	3,437,937	0	0	0	0
11/1/2006	0.00	1,326,218	0.00	584,235	0.00	1,550,073	0.00	3,548,558	3,548,558	0	0	0	0
11/6/2006	0.00	1,326,218	0.00	584,235	0.00	1,550,073	0.00	3,548,558	3,548,558	0	0	0	0
11/13/2006	0.00	1,326,218	0.00	584,235	0.00	1,550,073	0.00	3,548,558	3,548,558	0	0	0	0
11/20/2006	0.00	1,326,218	0.00	584,235	0.00	1,550,073	0.00	3,548,558	3,548,558	0	0	0	0
11/30/2006	0.00	1,326,609	0.00	584,426	0.00	1,550,612	0.00	3,549,689	3,549,689	0	0	0	0
12/1/2006	0.00	1,333,349	0.00	584,426	0.00	1,550,612	0.00	3,556,570	3,556,570	0	0	0	0
12/8/2006	0.00	1,366,589	0.00	605,673	0.00	1,596,400	0.00	3,657,492	3,657,492	0	0	0	0

TABLE 5

EXTRACTION WELL WEEKLY FLOW AND PRESSURE DATA

Former Rhone-Poulenc Site
Tukwila, Washington

Date	EX-1		EX-2		EX-3		Total Effluent Flow			Filter Inflow (psi ²)	Lead GAC ³ Inflow (psi)	Lag GAC Inflow (psi)	Lag GAC Effluent (psi)
	Flow Rate (gpm ¹)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Total Weekly Flow (gallons)	Flow Rate (gpm)	Weekly Flow (gallons)	Total Weekly Flow (gallons)				
12/12/2006	0.00	1,366,589	0.00	605,673	0.00	1,596,400	0.00	3,657,492	0	0	0	0	
12/21/2006	0.00	1,366,922	0.00	605,835	0.00	1,596,859	0.00	3,658,436	0	0	0	0	
12/26/2006	0.00	1,366,922	0.00	605,835	0.00	1,596,859	0.00	3,658,436	0	0	0	0	

Notes:

1. gpm = Gallons per minute.
2. psi = Pounds per square inch.
3. GAC = granular activated carbon.
4. NA = Not available, flow meter removed for repairs.
5. NA = Not available, no pressure gauge installed at this location until January 2006.
6. No records available between 10/14/2004 and 01/03/2005.
7. Not indicated on available records.

TABLE 6

PERFORMANCE MONITORING SAMPLING SCHEDULE, 2003-2006

Former Rhone-Poulenc Site
Tukwila, Washington

Task	Frequency	Analytes	Dates		
			June 2003 to December 2005 (Rounds 21 through 29)	December 2005 (Round 30)	April 2006 to December 2006 (Rounds 31 through 34)
Water Level Measurements ¹	Monthly	--	DM-8, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46, B1A, DM-5, MW-17, MW-27, MW-28, MW-29, EX-1, EX-2, EX-3, all remaining exterior barrier wall network wells and interior barrier wall wells.	A2, B1A, BIB, DM-3A, DM-3B, DM-5, DM-8, EX-1, EX-2, EX-3, MW-17, MW-27, MW-28, MW-29, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46, MW-47, MW-48, MW-49, MW-50, MW-51, MW-52, MW-53, MW-54, MW-55, MW-56, MW-57, MW-58, and MW-59	A2, B1A, BIB, DM-3A, DM-3B, DM-5, DM-8, EX-1, EX-2, EX-3, MW-17, MW-27, MW-28, MW-29, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46, MW-47, MW-48, MW-49, MW-50, MW-51, MW-52, MW-53, MW-54, MW-55, MW-56, MW-57, MW-58, and MW-59
			DM-8, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46	--	--
Water Quality Sampling	Monthly	General Parameters ²	DM-8, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46	--	--
		BTEX ³ , Total Metals ⁴ , General Parameters ²	DM-8, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46, B1A, DM-5, MW-17, MW-27, MW-28, MW-29, EX-3	B1A, DM-5, DM-8, EX-3, MW-17, MW-27, MW-28, MW-29, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, and MW-46	B1A, DM-8, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, and MW-46
	Quarterly	Dissolved Metals ⁴ , Water Chemistry Parameters ⁵	DM-8, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, MW-46, B1A, DM-5, MW-17, MW-27, MW-28, MW-29, EX-3	B1A, DM-5, DM-8, EX-3, MW-17, MW-27, MW-28, MW-29, MW-38, MW-39, MW-40, MW-41, MW-42, MW-43, MW-44, MW-45, and MW-46	--
	Semiannually	BTEX ³ , Total Metals ⁴ , General Parameters ²	--	--	DM-5, EX-3, MW-17, MW-27, MW-28, MW-29
	Relevant PMP ⁶ Date		June 2003	December 2005	April 2006

Notes:

- DM-8 and MW-49, a pair of Upper Zone wells, are used to control the groundwater extraction rate inside the barrier wall. Monthly manual water level measurements will be used to track potential leakage through the wall and vertically through the aquitard.
- General Parameters = Temperature, pH, specific conductivity, turbidity, dissolved oxygen, oxidation-reduction potential
- BTEX = Benzene, toluene, xylenes, and ethyl benzene analyzed using EPA 8021
- Metals Suite = Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ti, V, Zn
- Water Chemistry Parameters = Major cations and anions, silica, NH₃-N, Total phosphorus, bicarbonate/carbonate alkalinity
- PMP = Performance Monitoring Plan

TABLE 7
**PERFORMANCE MONITORING WELL SURVEY DATA, DEPTHS,
SCREEN DEPTHS, AND SCREEN ELEVATIONS**

Former Rhone-Poulenc Site
Tukwila, Washington

Well ID	Installation Date	Aquifer or Zone Screened	Washington State Plane North Coordinates (feet)		Original TOC Elevation ¹	Current TOC Elevation ¹	Current Ground Surface Elevation	Original Total Depth (feet bgs ²)	Original Screen Interval Depth (feet bgs ²)	
			Northing	Easting					Top	Bottom
B1A	7/11/1991	Upper Zone	193572.2695	1637139.0520	15.35	15.33	15.71	16.7	6.7	16.7
B1B	7/17/1991	Deep Aquifer	193579.3066	1637120.8683	14.77	15.09	15.54	97	87	97
DM-5	7/12/1986	Upper Zone	193396.7258	1637106.8481	15.52	15.42	15.88	37	16	36
DM-8	7/13/1986	Upper Zone	193178.1739	1636645.5827	16.74	17.02	17.38	36	16	36
MW-17	8/10/1994	Upper Zone	193127.9498	1636778.7406	16.19	15.17	15.50	22	7	22
MW-27	2/25/1998	Upper Zone	193054.5080	1636785.4211	16.72	15.45	15.86	20	5	20
MW-28	2/26/1998	Upper Zone	193051.6101	1636790.8346	16.63	15.36	15.76	36	26	36
MW-29	3/3/1998	Upper Zone	193056.7803	1636904.9034	13.56	14.99	15.32	20	5	20
MW-38	9/3/2002	Upper Zone	193588.983	1636560.037	13.34	n/a	n/a	30	10	30
MW-38R	10/27/2006	Upper Zone	193577.1730	1636561.9686	n/a	13.45	13.94	30	9.7	29.5
MW-39	9/3/2002	Lower Zone	193582.9737	1636560.4004	13.27	13.27	13.80	50	40	50
MW-40	9/4/2002	Lower Zone	192930.6527	1636713.5474	16.67	16.67	16.86	59	49	59
MW-41	9/5/2002	Upper Zone	192936.5025	1636712.1872	16.36	16.36	16.70	35	14	34
MW-42	9/6/2002	Lower Zone	193186.2917	1636642.5636	16.40	16.40	17.07	59	49	59
MW-43	9/5/2002	Lower Zone	192988.0155	1636924.5169	13.26	14.54	15.01	60	50	60
MW-44	9/5/2002	Upper Zone	192986.9456	1636917.8381	12.94	14.51	14.98	40	30	40
MW-45	9/9/2002	Lower Zone	193107.3735	1637183.4888	12.87	14.27	14.66	60	49	59
MW-46	9/9/2002	Upper Zone	193105.6111	1637177.6309	13.18	14.40	14.67	35	25	35
MW-47	4/14/2003	Upper Zone	193580.7066	1636601.5870	16.66	14.82	15.18	30	20	30
MW-48	4/14/2003	Lower Zone	193586.6998	1636601.9485	17.05	14.70	15.14	52	42	52
MW-49	4/11/2003	Upper Zone	193195.6818	1636673.6134	13.67	15.11	16.37	30	20	30
MW-50	4/11/2003	Lower Zone	193187.9733	1636675.8766	13.72	15.67	16.23	59	47	57
MW-51	4/10/2003	Upper Zone	192944.9772	1636741.9484	13.42	14.77	15.18	30	20	30
MW-52	4/10/2003	Lower Zone	192938.9388	1636743.8590	13.71	14.62	15.11	57.5	47	57
MW-53	4/9/2003	Upper Zone	193019.4135	1636903.5184	13.98	14.62	14.93	40	30	40
MW-54	4/9/2003	Lower Zone	193022.2529	1636910.5761	13.70	14.38	14.86	60	50	60
MW-55	4/16/2003	Upper Zone	193133.7537	1637167.7247	13.75	14.69	14.93	30	20	30
MW-56	4/17/2003	Lower Zone	193137.9136	1637175.8804	13.65	14.80	15.00	60	50	60
MW-57	4/16/2003	Upper Zone	193412.4581	1637162.8661	15.08	15.95	16.31	30	17	27
MW-58	4/15/2003	Upper Zone	193601.0167	1636944.7209	15.00	15.32	15.86	30.5	20	30
MW-59	4/15/2003	Upper Zone	193606.8011	1636720.5517	14.08	15.13	15.63	33.5	20	30
DM-3A ⁴	7/13/1986	Upper Zone	193592.9471	1636643.5960	13.83	14.43	14.80	25.5	7	27
DM-3B ⁴	7/13/1986	Deep Aquifer	193592.9471	1636643.5960	14.00	14.43	14.80	97	85	95
A2	7/12/1991	Upper Zone	193589.4282	1636719.6534	14.23	15.21	15.56	22	12	22
EX-1	1/28/2003	Upper Zone	193496.3564	1636728.0558	14.73	15.78	16.17	40	15	35
EX-2	1/29/2003	Upper Zone	193502.2905	1636941.2832	14.41	15.83	16.36	40	15	35
EX-3	1/30/2003	Upper Zone	193320.4475	1636958.6863	14.10	15.54	16.06	40	15	35

Notes:

1. For Top of Casing Elevation reference, refer to Table 4 (Well Survey History).
2. bgs = below ground surface.
3. n/a =
4. Wells are completed in same borehole.

TABLE 8

MONITORING WELL SURVEY HISTORY¹

Former Rhone-Poulenc Site
Tukwila, Washington

Event	Surveys			Monument Adjustments				Y fitting extension		Monument Conversion		Site Redevelopment				
	Date	Pre-2003	4/2003	1/16/04 to 3/18/04	3/9/2005	3/9/2005	6/29/2005	7/15/2005	12/8/2005	12/8/2005	4/14/2006	4/14/2006	10/2006	10/12/2006	11/10/2006	10/12/2006
Surveyor	unknown	RCI	Coates	--	--	--	Coates	--	--	--	--	--	Barghausen	Barghausen	--	--
Adjuster	--	--	--	RCI (pry)	RCI (pry)	RCI (saw)	RCI (saw)	PRH	PRH	PRH	PRH	Rushforth	--	--	ZAS	ZAS
Well ID	TOC ²	TOC ²	TOC ²	Length (inches)	TOC ²	Length (inches)	TOC ²	Length (inches)	TOC ²	Length (inches)	TOC ²	Length (inches)	TOC ²	TOC ²	TOC ²	TOC ²
A2	14.44	14.731	14.23	0.5	14.18	~0.5	14.14					regrading	18.59		15.21	
B1A	15.15	16.033	15.35									regrading	18.71		15.33	
B1B	14.77			1.5	14.45	~2	14.32					regrading	18.47		15.09	
B2 ³	13.88		14.82									well abandoned				
B6 ³	13.82		13.84									regrading	18.96		15.58	
DM-3A	14.00		13.83									regrading	17.81		14.43	
DM-3B	14.10		14.00									regrading	17.81		14.43	
DM-5	8.67	16.192	15.52									regrading	18.8		15.42	
DM-7 ³	13.95		14.06									regrading	18.58		15.20	
DM-8	11.56	17.291	16.74					0.32	17.06			regrading	20.40		17.02	
EX-1		15.228	14.73									regrading		19.16		15.78
EX-2		14.994	14.41									regrading		19.21		15.83
EX-3		14.716	14.10									regrading		18.92		15.54
H10 ³	13.73											regrading	18.16		14.78	
MW-12 ³	13.75		14.32									regrading	18.33		14.95	
MW-13 ³	13.76											well abandoned				
MW-17	16.11	16.805	16.19							16	14.86	regrading	18.55		15.17	
MW-22 ³	15.832		14.74									regrading	18.16		14.78	
MW-27		17.335	16.72							28.125	14.38	regrading	18.83		15.45	
MW-28		17.281	16.63							24.75	14.57	regrading	18.74		15.36	
MW-29		14.261	13.56									regrading	18.37		14.99	
MW-38		13.796	13.34									well abandoned				
MW-38R														16.83		13.45
MW-39		13.666	13.23										16.65		13.27	
MW-40		17.289	16.65										20.05		16.67	
MW-41		17.054	16.38										19.74		16.36	
MW-42		16.993	16.43										19.78		16.40	
MW-43		13.967	13.26									regrading	17.92		14.54	
MW-44		13.601	12.94									regrading	17.89		14.51	
MW-45		13.621	12.87									regrading	17.65		14.27	
MW-46		13.869	13.18									regrading	17.78		14.40	
MW-47		17.179	16.66							31.875	14.00	regrading	18.20		14.82	
MW-48		17.536	17.05							35.25	14.11	regrading	18.08		14.70	
MW-49		14.201	13.67					1.47	15.14			regrading	18.49		15.11	
MW-50		14.332	13.72									regrading	19.05		15.67	
MW-51		14.104	13.42									regrading	18.15		14.77	
MW-52		14.386	13.71									regrading	18.00		14.62	
MW-53		14.653	13.98									regrading	18.00		14.62	
MW-54		14.357	13.70									regrading	17.76		14.38	
MW-55		14.473	13.75									regrading	18.07		14.69	
MW-56		14.391	13.65									regrading	18.18		14.80	
MW-57		15.776	15.08									regrading	19.33		15.95	
MW-58		15.586	15.00									regrading	18.70		15.32	
MW-59		14.608	14.08									regrading	18.51		15.13	

- ¹ = Proper top of casing elevation to use for water level elevation measuring point, depending on date water level was collected. For full explanation see text.
- ² Reported top of casing elevation in feet for indicated survey based on datum for that survey.
- ³ Well is not a performance monitoring well but was used occasionally for water level measurements in 2004 and 2005.

TABLE 9

**MONITORING WELL
TOP OF CASING SUMMARY**

Former Rhone-Poulenc Site
Tukwila, Washington

Well ID	TOC Elevation (feet)					
	Between 2003 and 3/9/05	Between 3/9/05 and 6/29/05	Between 6/29/05 and 12/8/05	Between 12/8/05 and 4/14/06	Between 4/15/06 and 10/06	After 10/06
A2	14.23	14.18	14.14	14.14	14.14	15.21
B1A	15.35	15.35	15.35	15.35	15.35	15.33
B1B	14.77	14.45	14.32	14.32	14.32	15.09
B2*	14.82	14.82	14.82	14.82	14.82	abandoned
B6*	13.84	13.84	13.84	13.84	13.84	15.58
DM-3A	13.83	13.83	13.83	13.83	13.83	14.43
DM-3B	14.00	14.00	14.00	14.00	14.00	14.43
DM-5	15.52	15.52	15.52	15.52	15.52	15.42
DM-7*	14.06	14.06	14.06	14.06	14.06	15.20
DM-8	16.74	16.74	16.74	17.02	17.02	17.02
EX-1	14.73	14.73	14.73	14.73	14.73	15.78
EX-2	14.41	14.41	14.41	14.41	14.41	15.83
EX-3	14.10	14.10	14.10	14.10	14.10	15.54
H10*	13.73	13.73	13.73	13.73	13.73	14.78
MW-12*	14.32	14.32	14.32	14.32	14.32	14.95
MW-13*	13.76	13.76	13.76	13.76	13.76	abandoned
MW-17	16.19	16.19	16.19	16.19	14.86	15.17
MW-22*	14.74	14.74	14.74	14.74	14.74	14.78
MW-27	16.72	16.72	16.72	16.72	14.38	15.45
MW-28	16.63	16.63	16.63	16.63	14.57	15.36
MW-29	13.56	13.56	13.56	13.56	13.56	14.99
MW-38	13.34	13.34	13.34	13.34	13.34	abandoned
MW-38R ²	N/A	N/A	N/A	N/A	N/A	13.45
MW-39	13.27	13.27	13.27	13.27	13.27	13.27
MW-40	16.67	16.67	16.67	16.67	16.67	16.67
MW-41	16.36	16.36	16.36	16.36	16.36	16.36
MW-42	16.40	16.40	16.40	16.40	16.40	16.40
MW-43	13.26	13.26	13.26	13.26	13.26	14.54
MW-44	12.94	12.94	12.94	12.94	12.94	14.51
MW-45	12.87	12.87	12.87	12.87	12.87	14.27
MW-46	13.18	13.18	13.18	13.18	13.18	14.40
MW-47	16.66	16.66	16.66	16.66	14.00	14.82
MW-48	17.05	17.05	17.05	17.05	14.11	14.70
MW-49	13.67	13.67	13.67	15.11	15.11	15.11
MW-50	13.72	13.72	13.72	13.72	13.72	15.67
MW-51	13.42	13.42	13.42	13.42	13.42	14.77
MW-52	13.71	13.71	13.71	13.71	13.71	14.62
MW-53	13.98	13.98	13.98	13.98	13.98	14.62
MW-54	13.70	13.70	13.70	13.70	13.70	14.38
MW-55	13.75	13.75	13.75	13.75	13.75	14.69
MW-56	13.65	13.65	13.65	13.65	13.65	14.80
MW-57	15.08	15.08	15.08	15.08	15.08	15.95
MW-58	15.00	15.00	15.00	15.00	15.00	15.32
MW-59	14.08	14.08	14.08	14.08	14.08	15.13

Notes:

- * = Well is not a performance monitoring well but was used occasionally for water level measurements in 2004 and 2005.
- NA = not applicable. MW-38R was installed in October 2006 to replace MW-38.

TABLE 10

GROUNDWATER ELEVATIONS, 2003
Former Rhone-Poulenc Site
Tukwila, Washington

Well ID	Inside/ Outside Barrier Wall	Aquifer or Zone Monitored	Top of Casing Elevation (feet) ¹	Depth to Water Measurements (feet)					Groundwater Level Elevation (feet)						
				4/16/2003 ²	8/22/2003	9/17/2003	10/17/2003	11/21/2003	12/15/2003	4/16/2003	8/22/2003	9/17/2003	10/17/2003	11/21/2003	12/15/2003
A2	Inside	Upper Zone	14.23	10.57	11.25	12.47	12.37	12.47	12.47	--	3.66	2.98	1.76	1.86	1.76
B1A	Outside	Upper Zone	15.35	8.35	9.66	9.84	9.93	9.35	8.90	7.00	5.69	5.51	5.42	6.00	6.45
B1B	Outside	Deep Aquifer	14.77	--	--	--	--	--	--	--	--	--	--	--	--
DM-3A	Inside	Upper Zone	13.83	--	--	--	--	--	11.97	--	--	--	--	--	1.86
DM-3B	Inside	Deep Aquifer	14.00	--	--	--	--	--	7.87	--	--	--	--	--	6.13
DM-5	Inside	Upper Zone	15.52	11.62	12.84	12.51	13.54	13.69	13.70	3.90	2.68	3.01	1.98	1.83	1.82
DM-8	Outside	Upper Zone	16.74	18.05	18.47	14.93	13.10	16.60	12.63	-1.31	-1.73	1.81	3.64	0.14	4.11
EX-1	Inside	Upper Zone	14.73	11.15	11.05	11.93	--	--	13.17	3.58	3.68	2.80	--	--	1.56
EX-2	Inside	Upper Zone	14.41	10.75	10.71	11.55	12.83	12.96	12.88	3.66	3.70	2.86	1.58	1.45	1.53
EX-3	Inside	Upper Zone	14.10	10.42	10.38	11.18	12.42	12.57	12.45	3.68	3.72	2.92	1.68	1.53	1.65
MW-17	Inside	Upper Zone	16.19	12.44	12.58	13.15	14.39	14.46	14.33	3.75	3.61	3.04	1.80	1.73	1.86
MW-27	Inside	Upper Zone	16.72	13.00	13.05	13.65	14.83	14.89	14.79	3.72	3.67	3.07	1.89	1.83	1.93
MW-28	Inside	Upper Zone	16.63	12.95	12.96	13.57	14.78	14.82	14.73	3.68	3.67	3.06	1.85	1.81	1.90
MW-29	Inside	Upper Zone	13.56	9.88	9.86	10.50	--	--	--	3.68	3.70	3.06	--	--	--
MW-38	Outside	Upper Zone	13.34	13.75	14.23	11.95	10.54	12.62	9.90	-0.41	-0.89	1.39	2.80	0.72	3.44
MW-39	Outside	Lower Zone	13.27	13.34	13.98	11.86	10.35	12.43	9.88	-0.07	-0.71	1.41	2.92	0.84	3.39
MW-40	Outside	Lower Zone	16.67	18.11	18.78	14.29	12.18	16.65	12.80	-1.44	-2.11	2.38	4.49	0.02	3.87
MW-41	Outside	Upper Zone	16.36	18.70	19.07	13.94	11.69	16.88	11.37	-2.34	-2.71	2.42	4.67	-0.52	4.99
MW-42	Outside	Lower Zone	16.40	14.62	15.08	15.15	14.70	14.81	14.22	1.78	1.32	1.25	1.70	1.59	2.18
MW-43	Outside	Lower Zone	13.26	12.03	13.34	12.88	11.46	11.90	10.83	1.23	-0.08	0.38	1.80	1.36	2.43
MW-44	Outside	Upper Zone	12.94	15.04	15.47	10.87	8.47	13.24	7.97	-2.10	-2.53	2.07	4.47	-0.30	4.97
MW-45	Outside	Lower Zone	12.87	12.51	13.94	11.57	9.74	12.11	10.41	0.36	-1.07	1.30	3.13	0.76	2.46
MW-46	Outside	Upper Zone	13.18	16.95	16.83	9.96	7.98	13.70	7.48	-3.77	-3.65	3.22	5.20	-0.52	5.70
MW-47	Inside	Upper Zone	16.66	--	13.01	13.68	14.92	14.81	14.90	--	3.65	2.98	1.74	1.85	1.76
MW-48	Inside	Lower Zone	17.05	--	13.72	14.18	15.2	15.26	15.18	--	3.33	2.87	1.85	1.79	1.87
MW-49	Inside	Upper Zone	13.67	--	9.90	10.55	11.77	11.77	11.75	--	3.77	3.12	1.90	1.90	1.92
MW-50	Inside	Lower Zone	13.72	--	10.32	10.85	11.58	11.72	11.79	--	3.40	2.87	2.14	2.00	1.93
MW-51	Inside	Upper Zone	13.42	--	9.48	9.89	10.82	11.02	10.85	--	3.94	3.53	2.60	2.40	2.57
MW-52	Inside	Lower Zone	13.71	--	10.87	10.78	11.42	11.97	11.52	--	2.84	2.93	2.29	1.74	2.19
MW-53	Inside	Upper Zone	13.98	--	10.31	10.93	12.12	12.17	12.10	--	3.67	3.05	1.86	1.81	1.88
MW-54	Inside	Lower Zone	13.70	--	10.18	10.74	11.52	11.34	11.45	--	3.52	2.96	2.18	2.36	2.25
MW-55	Inside	Upper Zone	13.75	--	10.12	10.65	11.81	11.96	11.76	--	3.63	3.10	1.94	1.79	1.99
MW-56	Inside	Lower Zone	13.65	--	10.53	10.52	11.45	11.81	11.44	--	3.12	3.13	2.20	1.84	2.21
MW-57	Outside	Upper Zone	15.08	--	12.53	13.39	12.51	12.27	11.93	--	2.55	1.69	2.57	2.81	3.15
MW-58	Outside	Upper Zone	15.00	--	14.56	13.71	13.31	12.74	12.62	--	0.44	1.29	1.69	2.26	2.38
MW-59	Outside	Upper Zone	14.08	--	13.26	12.95	12.28	12.26	11.62	--	0.82	1.13	1.80	1.82	2.46

Notes:

1. For top of casing elevation refer to Table 4.
2. "Synoptic" water levels on 4/16/2003 were measured in a limited subset of wells, as described fully in Geomatrix, 2003c.
3. -- = Water level not measured at this location.

TABLE 11
GROUNDWATER ELEVATIONS, 2004
Former Rhone-Poulenc Site
Tukwila, Washington

Well ID	Inside/ Outside Barrier Wall	Aquifer or Zone Monitored	Top of Casing Elevation (feet) ¹	Depth to Water (feet)												Groundwater Level Elevation (feet)											
				1/16/2004	2/12-13/04	3/16/2004	4/15/2004	5/14/2004	6/15/2004	7/14/2004	8/17/2004	9/17/2004	10/15/2004	11/15/2004	12/15/2004	1/16/2004	2/12-13/04	3/16/2004	4/15/2004	5/14/2004	6/15/2004	7/14/2004	8/17/2004	9/17/2004	10/15/2004	11/15/2004	12/15/2004
A2	Inside	Upper Zone	14.23	12.60	12.47	15.70	15.01	15.59	15.41	16.25	15.52	14.70	15.62	14.71	15.36	1.63	1.76	-1.47	-0.78	-1.36	-1.18	-2.02	-1.29	-0.47	-1.39	-0.48	-1.13
B1A	Outside	Upper Zone	15.35	8.28	8.15	8.34	8.52	8.82	9.05	9.13	9.36	9.66	9.65	9.49	9.28	7.07	7.20	7.01	6.83	6.53	6.30	6.22	5.99	5.69	5.70	5.86	6.07
B1B	Outside	Deep Aquifer	14.77	--	--	--	--	--	--	--	--	--	--	--	7.39	-- ²	--	--	--	--	--	--	--	--	--	--	7.38
DM-3A	Inside	Upper Zone	13.83	12.19	12.06	15.30	14.62	15.22	15.03	15.81	15.24	14.58	15.20	(3)	14.96	1.64	1.77	-1.47	-0.79	-1.39	-1.20	-1.98	-1.41	-0.75	-1.37	(4)	-1.13
DM-3B	Inside	Deep Aquifer	14.00	5.73	6.08	7.46	8.83	9.84	11.17	11.11	8.15	9.52	7.67	8.11	5.93	8.27	7.92	6.54	5.17	4.16	2.83	2.89	5.85	4.48	6.33	5.89	8.07
DM-5	Inside	Upper Zone	15.52	13.87	13.48	16.64	16.00	16.69	(3)	17.21	16.74	16.09	16.75	16.49	16.61	1.65	2.04	-1.12	-0.48	-1.17	(4)	-1.69	-1.22	-0.57	-1.23	-0.97	-1.09
DM-8	Outside	Upper Zone	16.74	11.76	12.61	14.31	16.38	17.67	19.27	18.99	19.07	16.62	14.10	14.31	14.49	4.98	4.13	2.43	0.36	-0.93	-2.53	-2.25	-2.33	0.12	2.64	2.43	2.25
EX-1	Inside	Upper Zone	14.73	13.10	13.59	16.80	16.12	16.35	15.93	17.48	16.86	15.49	16.81	15.76	15.84	1.63	1.14	-2.07	-1.39	-1.62	-1.20	-2.75	-2.13	-0.76	-2.08	-1.03	-1.11
EX-2	Inside	Upper Zone	14.41	13.17	12.47	15.75	15.05	16.67	15.56	16.77	15.69	15.12	16.17	15.44	15.52	1.24	1.94	-1.34	-0.64	-2.26	-1.15	-2.36	-1.28	-0.71	-1.76	-1.03	-1.11
EX-3	Inside	Upper Zone	14.10	12.73	12.07	15.36	14.68	15.36	15.27	16.74	15.36	14.81	16.22	15.11	15.23	1.37	2.03	-1.26	-0.58	-1.26	-1.17	-2.64	-1.26	-0.71	-2.12	-1.01	-1.13
MW-17	Inside	Upper Zone	16.19	14.54	14.09	17.46	16.83	17.44	17.43	18.20	17.53	16.98	17.48	17.29	17.3	1.65	2.10	-1.27	-0.64	-1.25	-1.24	-2.01	-1.34	-0.79	-1.29	-1.10	-1.11
MW-27	Inside	Upper Zone	16.72	14.95	14.59	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	1.77	2.13	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
MW-28	Inside	Upper Zone	16.63	14.90	14.52	17.85	17.18	17.76	17.81	18.34	17.89	17.35	17.87	17.68	17.81	1.73	2.11	-1.22	-0.55	-1.13	-1.18	-1.71	-1.26	-0.72	-1.24	-1.05	-1.18
MW-29	Inside	Upper Zone	13.56	11.85	11.47	14.80	14.11	14.69	14.75	15.29	14.81	14.32	14.83	14.58	--	1.71	2.09	-1.24	-0.55	-1.13	-1.19	-1.73	-1.25	-0.76	-1.27	-1.02	--
MW-38	Outside	Upper Zone	13.34	9.31	10.07	11.21	12.61	13.62	13.88	14.18	14.62	13.02	11.29	10.75	9.79	4.03	3.27	2.13	0.73	-0.28	-0.54	-0.84	-1.28	0.32	2.05	2.59	3.55
MW-39	Outside	Lower Zone	13.27	9.16	10.20	11.20	12.41	13.48	14.41	14.59	14.13	12.84	11.31	10.24	9.91	4.11	3.07	2.07	0.86	-0.21	-1.14	-1.32	-0.86	0.43	1.96	3.03	3.36
MW-40	Outside	Lower Zone	16.67	11.36	12.41	14.00	16.33	17.98	19.69	18.87	19.34	16.98	13.39	14.25	10.99	5.31	4.26	2.67	0.34	-1.31	-3.02	-2.20	-2.67	-0.31	3.28	2.42	5.68
MW-41	Outside	Upper Zone	16.36	10.73	11.37	13.60	16.49	18.20	19.75	19.51	19.48	17.03	12.86	13.38	11.79	5.63	4.99	2.76	-0.13	-1.84	-3.39	-3.15	-3.12	-0.67	3.50	2.98	4.57
MW-42	Outside	Lower Zone	16.40	13.63	14.50	14.62	15.02	15.45	15.78	15.73	15.82	15.24	15.35	14.70	15.04	2.77	1.90	1.78	1.38	0.95	0.62	0.67	0.58	1.16	1.05	1.70	1.36
MW-43	Outside	Lower Zone	13.26	10.13	10.51	12.16	11.29	12.42	13.99	14.31	16.04	12.92	11.23	10.84	11.41	3.13	2.75	1.10	1.97	0.84	-0.73	-1.05	-2.78	0.34	2.03	2.42	1.85
MW-44	Outside	Upper Zone	12.94	7.59	8.00	10.35	12.66	14.48	16.71	16.42	16.28	13.09	9.80	9.31	8.11	5.35	4.94	2.59	0.28	-1.54	-3.77	-3.48	-3.34	-0.15	3.14	3.63	4.83
MW-45	Outside	Lower Zone	12.87	8.92	9.37	10.71	11.4	12.76	15.11	14.29	14.15	12.41	10.60	9.41	9.81	3.95	3.50	2.16	1.47	0.11	-2.24	-1.42	-1.28	0.46	2.27	3.46	3.06
MW-46	Outside	Upper Zone	13.18	6.82	7.88	10.35	13.52	15.54	17.53	18.58	18.77	14.54	9.15	9.60	7.16	6.36	5.30	2.83	-0.34	-2.36	-4.35	-5.40	-5.59	-1.36	4.03	3.58	6.02
MW-47	Inside	Upper Zone	16.66	15.03	14.90	18.11	17.46	18.01	17.87	18.66	18.06	17.42	18.05	17.71	17.80	1.63	1.76	-1.45	-0.80	-1.35	-1.21	-2.00	-1.40	-0.76	-1.39	-1.05	-1.14
MW-48	Inside	Lower Zone	17.05	15.21	15.15	18.21	17.69	18.26	18.21	18.86	18.21	17.65	18.12	17.92	17.89	1.84	1.90	-1.16	-0.64	-1.21	-1.16	-1.81	-1.16	-0.60	-1.07	-0.87	-0.84
MW-49	Inside	Upper Zone	13.67	11.88	11.65	14.86	14.21	14.78	14.79	15.42	14.88	14.33	14.88	14.65	14.77	1.79	2.02	-1.19	-0.54	-1.11	-1.12	-1.75	-1.21	-0.66	-1.21	-0.98	-1.10
MW-50	Inside	Lower Zone	13.72	11.65	11.28	17.46	14.10	14.64	17.28	16.23	15.61	14.68	14.20	14.12	14.38	2.07	2.44	-3.74	-0.38	-0.92	-3.56	-2.51	-1.89	-0.96	-0.48	-0.40	-0.66
MW-51	Inside	Upper Zone	13.42	10.79	10.27	13.35	13.16	13.65	14.03	14.25	14.17	13.77	13.93	14.02	14.13	2.63	3.15	0.07	0.26	-0.23	-0.61	-0.83	-0.75	-0.35	-0.51	-0.60	-0.71
MW-52	Inside	Lower Zone	13.71	11.01	10.94	(3)	14.11	15.28	15.22	16.19	14.45	(3)	15.29	14.18	(3)	2.70	2.77	(4)	-0.40	-1.57	-1.51	-2.48	-0.74	(4)	-1.58	-0.47	(4)
MW-53	Inside	Upper Zone	13.98	12.26	11.87	15.20	14.51	15.09	15.16	15.70	15.21	14.70	15.26	14.99	15.16	1.72	2.11	-1.22	-0.53	-1.11	-1.18	-1.72	-1.23	-0.72	-1.28	-1.01	-1.18
MW-54	Inside	Lower Zone	13.70	11.60	11.42	13.42	13.58	14.29	14.49	14.73	14.33	13.85	13.77	13.74	13.63	2.10	2.28	0.28	0.12	-0.59	-0.79	-1.03	-0.63	-0.15	-0.07	-0.04	0.07
MW-55	Inside	Upper Zone	13.75	11.94	11.67	14.78	14.21	14.74	14.88	15.31	14.90	14.46	14.89	14.66	14.82	1.81	2.08	-1.03	-0.46	-0.99	-1.13	-1.56	-1.15	-0.71	-1.14	-0.91	-1.07
MW-56	Inside	Lower Zone	13.65	11.42	11.51	14.21	13.91	14.51	14.81	15.91	14.65	14.10	14.23	13.88	14.11	2.23	2.14	-0.56	-0.26	-0.86	-1.16	-2.26	-1.00	-0.45	-0.58	-0.23	-0.46
MW-57	Outside	Upper Zone	15.08	11.13	11.29	15.95	14.69	15.40	16.20	16.61	16.52	15.92	15.80	15.90	15.51	3.95	3.79	-0.87	0.39	-0.32	-1.12	-1.53	-1.44	-0.84	-0.72	-0.82	-0.43
MW-58	Outside	Upper Zone	15.00	12.13	12.62	13.01	13.11	13.42	13.66	14.58	13.63	13.21	13.51	14.32	12.71	2.87	2.38	1.99	1.89	1.58	1.34	0.42	1.37	1.79	1.49	0.68	2.29
MW-59	Outside	Upper Zone	14.08	11.05	11.68	12.21	12.53	13.06	13.41	13.51	13.44	12.68	12.68	12.24	11.71	3.03	2.40	1.87	1.55	1.02	0.67	0.57	0.64	1.40	1.40	1.84	2.37

- Notes:
1. For top of casing elevation refer to Table 4.
 2. -- = Water level not measured in this location
 3. Water level was below the top of the pump at MW-27 and was therefore not measured.
 4. Water level excluded due to measurement error

TABLE 12
GROUNDWATER ELEVATIONS, 2005
 Former Rhone-Poulenc Site
 Tukwila, Washington

Well ID	Inside/ Outside Barrier Wall	Aquifer or Zone Monitored	Top of Casing Elevation (feet) ¹				Depth to Water (feet)												Groundwater Level Elevation (feet)											
			1/1/05 to 3/9/05	3/9/05 to 6/29/05	6/29/05 to 12/8/05	12/8/05 to 12/31/05	1/17/2005	2/15/2005	3/15/2005	4/19/2005	5/17/2005	6/14/2005	7/15/2005	8/22/2005	9/20/2005	10/27/2005	11/21/2005	12/13/2005	1/17/2005	2/15/2005	3/15/2005	4/19/2005	5/17/2005	6/14/2005	7/15/2005	8/22/2005	9/20/2005	10/27/2005	11/21/2005	12/13/2005
A2	Inside	Upper Zone	14.23	14.18	14.14	14.14	14.65	15.72	16.84	15.99	15.83	15.75	15.68	15.90	16.02	16.80	17.19	16.33	-0.42	-1.49	-2.66	-1.81	-1.65	-1.57	-1.54	-1.76	-1.88	-2.66	-3.05	-2.19
B1A	Outside	Upper Zone	15.35	15.35	15.35	15.35	8.97	8.98	9.02	8.68	8.71	8.81	9.11	9.44	9.69	9.87	9.66	9.52	6.38	6.37	6.33	6.67	6.64	6.54	6.24	5.91	5.66	5.48	5.69	5.83
B1B	Outside	Deep Aquifer	14.77	14.45	14.32	14.32	7.97	7.17	9.39	8.02	8.06	8.10	8.09	9.61	7.99	7.85	7.64	8.13	6.80	7.60	5.06	6.43	6.39	6.35	6.23	4.71	6.33	6.47	6.68	6.19
DM-3A	Inside	Upper Zone	13.83	13.83	13.83	13.83	14.51	15.33	16.42	15.66	15.50	15.41	15.35	15.58	15.71	16.47	16.86	16.31	-0.68	-1.50	-2.59	-1.83	-1.67	-1.58	-1.52	-1.75	-1.88	-2.64	-3.03	-2.48
DM-3B	Inside	Deep Aquifer	14.00	14.00	14.00	14.00	7.70	6.36	10.70	8.68	8.69	8.58	7.98	11.01	7.86	6.98	6.74	7.52	6.30	7.64	3.30	5.32	5.31	5.42	6.02	2.99	6.14	7.02	7.26	6.48
DM-5	Inside	Upper Zone	15.52	15.52	15.52	15.52	16.07	16.77	17.65	17.14	17.01	16.86	16.78	17.06	17.21	17.86	18.14	17.79	-0.55	-1.25	-2.13	-1.62	-1.49	-1.34	-1.26	-1.54	-1.69	-2.34	-2.62	-2.27
DM-8	Outside	Upper Zone	16.74	16.74	16.74	17.02	12.06	13.04	18.61	16.21	15.93	15.50	15.34	18.55	13.96	13.12	13.71	15.59	4.68	3.70	-1.87	0.53	0.81	1.24	1.40	-1.81	2.78	3.62	3.03	1.43
EX-1	Inside	Upper Zone	14.73	14.73	14.73	14.73	16.18	17.00	18.04	16.56	16.41	16.32	16.29	16.51	16.64	17.39	18.74	17.25	-1.45	-2.27	-3.31	-1.83	-1.68	-1.59	-1.56	-1.78	-1.91	-2.66	-4.01	-2.52
EX-2	Inside	Upper Zone	14.41	14.41	14.41	14.41	15.02	16.25	17.29	16.69	16.55	16.48	16.41	16.69	16.82	17.02	17.44	16.89	-0.61	-1.84	-2.88	-2.28	-2.14	-2.07	-2.00	-2.28	-2.41	-2.61	-3.03	-2.48
EX-3	Inside	Upper Zone	14.10	14.10	14.10	14.10	14.65	16.24	16.53	15.90	15.75	15.65	15.59	15.86	16.00	16.68	17.83	16.62	-0.55	-2.14	-2.43	-1.80	-1.65	-1.55	-1.49	-1.76	-1.90	-2.58	-3.73	-2.52
MW-17	Inside	Upper Zone	16.19	16.19	16.19	16.19	16.81	17.46	18.64	18.00	17.82	17.71	17.67	18.92	18.06	18.77	19.05	18.74	-0.62	-1.27	-2.45	-1.81	-1.63	-1.52	-1.48	-2.73	-1.87	-2.58	-2.86	-2.55
MW-27	Inside	Upper Zone	16.72	16.72	16.72	16.72	(2)	(2)	(2)	(3)	(2)	18.16	18.20	18.41	18.50	19.01	19.24	19.15	(2)	(2)	(2)	(3)	(2)	-1.44 (4)	-1.48 (4)	-1.69 (4)	-1.78 (4)	-2.29 (4)	-2.52 (4)	-2.43 (4)
MW-28	Inside	Upper Zone	16.63	16.63	16.63	16.63	17.11	17.87	18.97	(3)	18.20	18.11	18.05	18.31	18.46	19.19	19.45	19.13	-0.48	-1.24	-2.34	(3)	-1.57	-1.48	-1.42	-1.68	-1.83	-2.56	-2.82	-2.50
MW-29	Inside	Upper Zone	13.56	13.56	13.56	13.56	13.91	14.81	15.91	15.34	15.15	15.06	15.00	15.26	15.39	16.11	16.40	16.04	-0.35	-1.25	-2.35	-1.78	-1.59	-1.50	-1.44	-1.70	-1.83	-2.55	-2.84	-2.48 (4)
MW-38	Outside	Upper Zone	13.34	13.34	13.34	13.34	9.61	10.37	14.28	11.84	12.13	11.97	11.93	14.06	11.31	10.83	10.96	11.96	3.73	2.97	-0.94	1.50	1.21	1.37	1.41	-0.72	2.03	2.51	2.38	1.38
MW-39	Outside	Lower Zone	13.27	13.27	13.27	13.27	9.89	10.32	14.05	12.42	11.91	11.95	11.96	14.26	11.27	10.78	11.01	11.86	3.38	2.95	-0.78	0.85	1.36	1.32	1.31	-0.99	2.00	2.49	2.26	1.41
MW-40	Outside	Lower Zone	16.67	16.67	16.67	16.67	11.49	12.44	19.05	16.17	15.87	15.49	15.20	18.16	13.75	12.37	12.91	15.05	5.18	4.23	-2.38	0.50	0.80	1.18	1.47	-1.49	2.92	4.30	3.76	1.62
MW-41	Outside	Upper Zone	16.36	16.36	16.36	16.36	10.63	11.85	19.15	16.32	15.96	15.26	14.56	18.64	12.83	11.70	12.33	14.83	5.73	4.51	-2.79	0.04	0.40	1.10	1.80	-2.28	3.53	4.66	4.03	1.53
MW-42	Outside	Lower Zone	16.40	16.40	16.40	16.40	14.71	14.84	15.48	15.18	14.40	15.34	15.82	15.64	15.52	15.11	15.49	15.51	1.69	1.56	0.92	1.22	2.00	1.06	0.58	0.76	0.88	1.29	0.91	0.89
MW-43	Outside	Lower Zone	13.26	13.26	13.26	13.26	14.71	11.85	12.99	11.31	12.98	13.20	12.76	14.82	12.90	12.40	11.64	12.29	-1.45	1.41	0.27	1.95	0.28	0.06	0.50	-1.56	0.36	0.86	1.62	0.97
MW-44	Outside	Upper Zone	12.94	12.94	12.94	12.94	7.54	8.65	15.81	12.48	12.16	12.01	11.62	15.33	9.81	8.69	9.31	11.25	5.40	4.29	-2.87	0.46	0.78	0.93	1.32	-2.39	3.13	4.25	3.63	1.69
MW-45	Outside	Lower Zone	12.87	12.87	12.87	12.87	9.6	10.13	13.55	11.46	11.07	11.60	11.68	13.31	10.72	10.15	10.42	11.04	3.27	2.74	-0.68	1.41	1.80	1.27	1.19	-0.44	2.15	2.72	2.45	1.83
MW-46	Outside	Upper Zone	13.18	13.18	13.18	13.18	7.91	8.11	17.80	13.47	12.92	11.94	11.19	17.61	9.24	7.91	8.46	11.43	5.27	5.07	-4.62	-0.29	0.26	1.24	1.99	-4.43	3.94	5.27	4.72	1.75
MW-47	Inside	Upper Zone	16.66	16.66	16.66	16.66	17.46	18.16	19.26	18.49	18.33	18.24	18.19	18.42	18.54	19.31	19.70	19.18	-0.80	-1.50	-2.60	-1.83	-1.67	-1.58	-1.53	-1.76	-1.88	-2.65	-3.04	-2.52
MW-48	Inside	Lower Zone	17.05	17.05	17.05	17.05	17.51	18.21	19.40	18.68	18.51	18.39	18.30	18.65	18.66	19.24	19.67	19.36	-0.46	-1.16	-2.35	-1.63	-1.46	-1.34	-1.25	-1.60	-1.61	-2.19	-2.62	-2.31
MW-49	Inside	Upper Zone	13.67	13.67	13.67	15.11	13.85	14.91	15.99	15.37	15.20	15.10	15.05	15.30	15.44	16.18	16.45	17.57	-0.18	-1.24	-2.32	-1.70	-1.53	-1.43	-1.38	-1.63	-1.77	-2.51	-2.78	-2.46
MW-50	Inside	Lower Zone	13.72	13.72	13.72	13.72	13.73	14.10	15.66	15.24	14.90	14.84	14.69	15.18	14.98	15.40	15.48	15.80	-0.01	-0.38	-1.94	-1.52	-1.18	-1.12	-0.97	-1.46	-1.26	-1.68	-1.76	-2.08
MW-51	Inside	Upper Zone	13.42	13.42	13.42	13.42	13.05	13.60	14.75	14.42	14.14	14.03	14.01	14.40	14.54	14.96	15.26	15.29	0.37	-0.18	-1.33	-1.00	-0.72	-0.61	-0.59	-0.98	-1.12	-1.54	-1.84	-1.87
MW-52	Inside	Lower Zone	13.71	13.71	13.71	13.71	13.48	14.23	16.24	16.81	15.19	15.09	14.83	15.41	14.92	15.08	15.21	15.29	0.23	-0.52	-2.53	-3.10	-1.48	-1.38	-1.12	-1.70	-1.21	-1.37	-1.50	-1.58
MW-53	Inside	Upper Zone	13.98	13.98	13.98	13.98	14.44	15.21	16.31	15.74	15.56	15.46	15.38	15.67	15.80	16.53	16.80	16.48	-0.46	-1.23	-2.33	-1.76	-1.58	-1.48	-1.40	-1.69	-1.82	-2.55	-2.82	-2.50
MW-54	Inside	Lower Zone	13.70	13.70	13.70	13.70	13.19	13.59	15.23	14.55	14.55	14.65	14.55	14.78	14.91	15.55	15.72	15.53	0.51	0.11	-1.53	-0.85	-0.85	-0.95	-0.85	-1.08	-1.21	-1.85	-2.02	-1.83
MW-55	Inside	Upper Zone	13.75	13.75	13.75	13.75	14.11	14.79	15.95	15.43	15.26	15.17	15.11	15.37	15.46	16.09	16.33	16.15	-0.36	-1.04	-2.20	-1.68	-1.51	-1.42	-1.36	-1.62	-1.71	-2.34	-2.58	-2.40
MW-56	Inside	Lower Zone	13.65	13.65	13.65	13.65	13.42	14.07	15.65	15.03	14.80	14.69	14.54	15.19	14.82	15.23	15.61	15.60	0.23	-0.42	-2.00	-1.38	-1.15	-1.04	-0.89	-1.54	-1.17	-1.58	-1.96	-1.95
MW-57	Outside	Upper Zone	15.08	15.08	15.08	15.08	15.22	15.99	14.85	14.52	15.28	14.05	13.48	15.64	15.84	15.11	11.15	12.67	-0.14	-0.91	0.23	0.56	-0.20	1.03	1.60	-0.56	-0.76	-0.03	3.93	2.41
MW-58	Outside	Upper Zone	15.00	15.00	15.00	15.00	12.68	12.87	13.26	12.86	12.94	13.16	13.38	13.57	13.75	13.58	13.50	13.42	2.32	2.13	1.74	2.14	2.06	1.84	1.62	1.43	1.25	1.42	1.50	1.58
MW-59	Outside	Upper Zone	14.08	14.08	14.08	14.08	11.59	11.92	13.08	12.37	12.30	12.47	12.63	13.31	12.81	12.54	12.57	12.53	2.49	2.16	1.00	1.71	1.78	1.61	1.45	0.77	1.27	1.54	1.51	1.55

Notes:

1. For top of casing elevation refer to Table 4.
2. Water level was below the top of the pump at MW-27 and was therefore not measured.
3. Aggressive Canadian geese prevented access to the wells during this event.
4. The pump had to be removed from the well in order to measure the water level.

TABLE 13

GROUNDWATER ELEVATIONS, 2006
Former Rhone-Poulenc Site
Tukwila, Washington

Well ID	Inside/ Outside Barrier Wall	Aquifer or Zone Monitored	Top of Casing Elevation (feet) ¹			Depth to Water (feet)									Groundwater Level Elevation (feet)								
			1/1/06 to 4/14/06	4/15/06 to 10/06	10/06 to 12/31/06	1/20/2006	2/16/2006	3/21/2006	4/14/2006	5/18/2006	6/5/2006	10/24/2006	11/21/2006	12/11/2006	1/20/2006	2/16/2006	3/21/2006	4/14/2006	5/18/2006	6/5/2006	10/24/2006	11/21/2006	12/11/2006
A2	Inside	Upper Zone	14.14	14.14	15.21	14.75	14.91	14.66	14.36	14.46	14.12	15.55	15.21	15.16	-0.61	-0.77	-0.52	-0.22	-0.32	0.02	-0.34	0.00	0.05
B1A	Outside	Upper Zone	15.35	15.35	15.33	7.80	7.71	8.42	8.48	8.66	8.74	9.86	9.44	9.19	7.55	7.64	6.93	6.87	6.69	6.61	5.47	5.89	6.14
B1B	Outside	Deep Aquifer	14.32	14.32	15.09	7.36	7.57	6.63	8.56	9.29	8.16	8.79	7.90	7.18	6.96	6.75	7.69	5.76	5.03	6.16	6.30	7.19	7.91
DM-3A	Inside	Upper Zone	13.83	13.83	14.43	14.61	14.71	14.62	14.56	14.16	13.81	14.67	14.33	14.23	-0.78	-0.88	-0.79	-0.73	-0.33	0.02	-0.24	0.10	0.20
DM-3B	Inside	Deep Aquifer	14.00	14.00	14.43	8.50	8.47	7.12	8.53	10.97	7.89	8.32	7.69	5.83	5.50	5.53	6.88	5.47	3.03	6.11	6.11	6.74	8.60
DM-5	Inside	Upper Zone	15.52	15.52	15.42	16.13	15.96	16.03	15.97	15.54	15.27	15.62	15.38	15.09	-0.61	-0.44	-0.51	-0.45	-0.02	0.25	-0.20	0.04	0.33
DM-8	Outside	Upper Zone	17.02	17.02	17.02	12.10	17.49	13.29	18.24	19.50	15.65	14.27	13.82	12.33	4.92	-0.47	3.73	-1.22	-2.48	1.37	2.75	3.20	4.69
EX-1	Inside	Upper Zone	14.73	14.73	15.78	15.53	16.75	15.54	15.46	15.06	14.73	15.10	15.75	15.67	-0.80	-2.02	-0.81	-0.73	-0.33	0.00	-0.37	0.03	0.11
EX-2	Inside	Upper Zone	14.41	14.41	15.83	15.61	15.63	15.61	15.17	14.79	14.37	14.72	15.78	15.70	-1.20	-1.22	-1.20	-0.76	-0.38	0.04	-0.31	0.05	0.13
EX-3	Inside	Upper Zone	14.10	14.10	15.54	14.80	15.70	14.83	15.68	14.37	14.06	14.40	15.46	15.35	-0.70	-1.60	-0.73	-1.58	-0.27	0.04	-0.30	0.08	0.19
MW-17	Inside	Upper Zone	16.19	14.86	15.17	16.85	16.71	16.92	15.53	15.17	14.85	15.61	15.32	14.97	-0.66	-0.52	-0.73	0.66	-0.31	0.01	-0.44	-0.15	0.20
MW-27	Inside	Upper Zone	16.72	14.38	15.45	17.31	17.15	17.38	15.35	14.96	14.63	15.75	15.58	15.54	-0.59 ¹	-0.43 ¹	-0.66 ¹	1.37	-0.58	-0.25	-0.30	-0.13	-0.09
MW-28	Inside	Upper Zone	16.63	14.57	15.36	17.26	17.12	17.32	14.90	14.53	14.25	15.65	15.36	15.24	-0.63	-0.49	-0.69	1.73	0.04	0.32	-0.29	0.00	0.12
MW-29	Inside	Upper Zone	13.56	13.56	14.99	14.19	14.10	14.25	14.18	13.84	13.51	15.31	15.04	14.95	-0.63	-0.54	-0.69	-0.62	-0.28	0.05	-0.32	-0.05	0.04
MW-38/ MW-38R	Outside	Upper Zone	13.34	13.34	13.45	9.17	13.04	10.21	13.52	--	--	--	10.32	9.31	4.17	0.30	3.13	-0.18	-- ²	--	--	3.13	4.14
MW-39	Outside	Lower Zone	13.27	13.27	13.27	9.20	12.87	10.11	13.26	14.74	12.16	11.08	10.77	9.33	4.07	0.40	3.16	0.01	-1.47	1.11	2.19	2.50	3.94
MW-40	Outside	Lower Zone	16.67	16.67	16.67	11.33	17.30	12.52	18.24	19.57	15.20	13.26	13.16	11.20	5.34	-0.63	4.15	-1.57	-2.90	1.47	3.41	3.51	5.47
MW-41	Outside	Upper Zone	16.36	16.36	16.36	10.62	17.56	12.10	18.60	19.61	14.83	12.76	12.99	10.57	5.74	-1.20	4.26	-2.24	-3.25	1.53	3.60	3.37	5.79
MW-42	Outside	Lower Zone	16.40	16.40	16.40	13.98	15.26	14.12	14.51	15.42	15.27	15.25	14.04	14.14	2.42	1.14	2.28	1.89	0.98	1.13	1.15	2.36	2.26
MW-43	Outside	Lower Zone	13.26	13.26	14.54	10.72	11.74	11.40	11.73	13.88	16.35	13.52	12.03	11.79	2.54	1.52	1.86	1.53	-0.62	-3.09	1.02	2.51	2.75
MW-44	Outside	Upper Zone	12.94	12.94	14.51	7.39	13.70	8.73	14.85	16.46	11.78	11.08	11.00	8.95	5.55	-0.76	4.21	-1.91	-3.52	1.16	3.43	3.51	5.56
MW-45	Outside	Lower Zone	12.87	12.87	14.27	8.93	12.18	9.36	11.72	14.67	11.70	12.23	10.75	10.05	3.94	0.69	3.51	1.15	-1.80	1.17	2.04	3.52	4.22
MW-46	Outside	Upper Zone	13.18	13.18	14.40	7.00	14.81	8.53	15.90	18.39	11.46	10.74	10.75	8.25	6.18	-1.63	4.65	-2.72	-5.21	1.72	3.66	3.65	6.15
MW-47	Inside	Upper Zone	16.66	14.00	14.82	17.49	17.57	17.47	14.73	14.33	14.02	15.15	14.85	14.75	-0.83	-0.91	-0.81	1.93	-0.33	-0.02	-0.33	-0.03	0.07
MW-48	Inside	Lower Zone	17.05	14.11	14.70	17.50	17.73	17.62	14.53	14.28	13.96	14.86	14.78	14.35	-0.45	-0.68	-0.57	2.52	-0.17	0.15	-0.16	-0.08	0.35
MW-49	Inside	Upper Zone	15.11	15.11	15.11	15.73	15.55	15.80	15.71	15.35	15.05	15.39	15.11	14.98	-0.62	-0.44	-0.69	-0.60	-0.24	0.06	-0.28	0.00	0.13
MW-50	Inside	Lower Zone	13.72	13.72	15.67	14.06	13.93	13.95	14.12	13.87	13.63	15.63	15.24	15.02	-0.34	-0.21	-0.23	-0.40	-0.15	0.09	0.04	0.43	0.65
MW-51	Inside	Upper Zone	13.42	13.42	14.77	12.74	12.32	12.99	13.01	12.82	12.66	14.48	14.36	14.21	0.68	1.10	0.43	0.41	0.60	0.76	0.29	0.41	0.56
MW-52	Inside	Lower Zone	13.71	13.71	14.62	13.78	13.92	13.59	14.36	14.22	13.53	14.73	14.04	(3)	-0.07	-0.21	0.12	-0.65	-0.51	0.18	-0.11	0.58	(3)
MW-53	Inside	Upper Zone	13.98	13.98	14.62	14.59	14.47	14.65	14.60	14.30	13.92	14.97	14.68	14.56	-0.61	-0.49	-0.67	-0.62	-0.32	0.06	-0.35	-0.06	0.06
MW-54	Inside	Lower Zone	13.70	13.70	14.38	14.12	13.33	13.60	13.67	13.51	13.24	14.15	13.78	13.62	-0.42	0.37	0.10	0.03	0.19	0.46	0.23	0.60	0.76
MW-55	Inside	Upper Zone	13.75	13.75	14.69	14.32	13.99	14.24	14.25	13.91	13.61	14.92	14.61	14.52	-0.57	-0.24	-0.49	-0.50	-0.16	0.14	-0.23	0.08	0.17
MW-56	Inside	Lower Zone	13.65	13.65	14.80	13.52	13.77	13.73	14.03	13.73	13.21	14.70	14.26	13.98	0.13	-0.12	-0.08	-0.38	-0.08	0.44	0.10	0.54	0.82
MW-57	Outside	Upper Zone	15.08	15.08	15.95	10.66	14.97	15.01	14.53	13.80	14.52	10.30	12.36	14.40	4.42	0.11	0.07	0.55	1.28	0.56	5.65	3.59	1.55
MW-58	Outside	Upper Zone	15.00	15.00	15.32	11.81	12.68	12.55	12.66	13.25	12.95	13.93	12.21	12.71	3.19	2.32	2.45	2.34	1.75	2.05	1.39	3.11	2.61
MW-59	Outside	Upper Zone	14.08	14.08	15.13	10.84	12.37	11.60	12.39	13.17	12.32	13.68	12.06	12.38	3.24	1.71	2.48	1.69	0.91	1.76	1.45	3.07	2.75

Notes:

1. The pump had to be removed from the well in order to measure the water level.
2. -- = Water level not measured at this location
3. Water level excluded due to presumed measurement error.

TABLE 14
GROUNDWATER ELEVATIONS FOR NON-PERFORMANCE MONITORING WELLS, 2004-2005
 Former Rhone-Poulenc Site
 Tukwila, Washington

Well ID	Inside/ Outside Barrier Wall	Aquifer or Zone Monitored	Top of Casing Elevation (feet) ¹	Depth to Groundwater (feet)								Groundwater Level Elevation (feet)							
				3/16/2004	4/15/2004	5/14/2004	6/15/2004	3/15/2005	12/13/2005	3/16/2004	4/15/2004	5/14/2004	6/15/2004	3/15/2005	12/13/2005	3/15/2005	12/13/2005		
B2	Inside	Upper Zone	14.82	15.39	16.24	15.97	15.97	-- ²	17.30	-1.29	-0.57	-1.42	-1.15	--	--	-2.48			
B6	Inside	Upper Zone	13.84	14.18	14.80	14.91	14.91	--	16.18	-0.51	-0.34	-0.96	-1.07	--	--	-2.34			
DM-7	Inside	Upper Zone	14.06	14.61	15.20	15.25	15.25	--	16.56	-1.26	-0.55	-1.14	-1.19	--	--	-2.5			
H10	Inside	Upper Zone	13.73	--	15.40	--	--	--	16.89	--	--	-1.67	--	--	--	-3.16			
MW-12	Inside	Upper Zone	14.32	14.84	15.44	15.51	16.43	16.43	16.56	-1.25	-0.52	-1.12	-1.19	-2.11	-2.24				
MW-13	Inside	Lower Zone	13.76	--	--	14.95	--	--	16.34	-6.64	--	--	-1.19	--	-2.58				
MW-22	Inside	Upper Zone	14.74	15.40	16.00	15.95	--	--	17.25	-1.35	-0.66	-1.26	-1.21	--	-2.51				

Notes:

1. For top of casing elevation refer to Table 4.
2. -- = Water level not measured at this location.

TABLE 15



VERTICAL GRADIENT CALCULATIONS
Former Rhone-Poulenc Site
Tukwila, Washington

Well ID	MW-47	MW-48	Vertical Gradient ²	MW-49	MW-50	Vertical Gradient ²	MW-51	MW-52	Vertical Gradient ²	MW-53	MW-54	Vertical Gradient ²	MW-55	MW-56	Vertical Gradient ²
	Northwest			West			Southwest			South			Southeast		
Cluster	Northwest		Vertical Gradient ²	West		Vertical Gradient ²	Southwest		Vertical Gradient ²	South		Vertical Gradient ²	Southeast		Vertical Gradient ²
Aquifer or Zone	Upper Zone	Lower Zone		Upper Zone	Lower Zone		Upper Zone	Lower Zone		Upper Zone	Lower Zone		Upper Zone	Lower Zone	
Current Ground Surface Elevation (feet)	15.18	15.14	0.04	16.37	16.23	0.14	15.18	15.11	0.07	14.93	14.86	0.07	14.93	15.00	-0.07
Ground Surface Elevation Difference															
Original Total Depth (feet bgs)	30	52	0.009	30	59	0.009	30	57.5	0.009	40	60	0.009	30	60	0.009
Original Screen Top Depth (feet bgs)	20	42													
Original Screen Bottom Depth (feet bgs)	30	52	0.009	30	57	0.009	30	57	0.009	40	60	0.009	30	60	0.009
Screen Midpoint (feet bgs)	25	47													
Vertical Distance between Midpoints (feet)	22		0.009	27		0.009	27		0.009	20		0.009	30		0.009
Date	Water Elevation (feet)			Water Elevation (feet)			Water Elevation (feet)			Water Elevation (feet)			Water Elevation (feet)		
8/22/2003	3.65	3.33	-0.015	3.77	3.40	-0.014	3.94	2.84	-0.041	3.67	3.52	-0.008	3.63	3.12	-0.017
9/17/2003	2.98	2.87	-0.005	3.12	2.87	-0.009	3.53	2.93	-0.022	3.05	2.96	-0.004	3.10	3.13	0.001
10/17/2003	1.74	1.85	0.005	1.90	2.14	0.009	2.60	2.29	-0.011	1.86	2.18	0.016	1.94	2.20	0.009
11/21/2003	1.85	1.79	-0.003	1.90	2.00	0.004	2.40	1.74	-0.024	1.81	2.36	0.028	1.79	1.84	0.002
12/15/2003	1.76	1.87	0.005	1.92	1.93	0.000	2.57	2.19	-0.014	1.88	2.25	0.019	1.99	2.21	0.007
1/16/2004	1.63	1.84	0.010	1.79	2.07	0.010	2.63	2.70	0.003	1.72	2.10	0.019	1.81	2.23	0.014
2/12/2004	1.76	1.90	0.006	2.02	2.44	0.016	3.15	2.77	-0.014	2.11	2.28	0.009	2.08	2.14	0.002
3/16/2004	-1.45	-1.16	0.013	-1.19	-3.74	-0.094	0.07			-1.22	0.28	0.075	-1.03	-0.56	0.016
4/15/2004	-0.80	-0.64	0.007	-0.54	-0.38	0.006	0.26	-0.40	-0.024	-0.53	0.12	0.032	-0.46	-0.26	0.007
5/14/2004	-1.35	-1.21	0.006	-1.11	-0.92	0.007	-0.23	-1.57	-0.050	-1.11	-0.59	0.026	-0.99	-0.86	0.004
6/15/2004	-1.21	-1.16	0.002	-1.12	-3.56	-0.090	-0.61	-1.51	-0.033	-1.18	-0.79	0.020	-1.13	-1.16	-0.001
7/14/2004	-2.00	-1.81	0.009	-1.75	-2.51	-0.028	-0.83	-2.48	-0.061	-1.72	-1.03	0.035	-1.56	-2.26	-0.023
8/17/2004	-1.40	-1.16	0.011	-1.21	-1.89	-0.025	-0.75	-0.74	0.000	-1.23	-0.63	0.030	-1.15	-1.00	0.005
9/17/2004	-0.76	-0.60	0.007	-0.66	-0.96	-0.011	-0.35			-0.72	-0.15	0.028	-0.71	-0.45	0.009
10/15/2004	-1.39	-1.07	0.015	-1.21	-0.48	0.027	-0.51	-1.58	-0.040	-1.28	-0.07	0.061	-1.14	-0.58	0.019
11/15/2004	-1.05	-0.87	0.008	-0.98	-0.40	0.021	-0.60	-0.47	0.005	-1.01	-0.04	0.049	-0.91	-0.23	0.023
12/15/2004	-1.14	-0.84	0.014	-1.10	-0.66	0.016	-0.71			-1.18	0.07	0.062	-1.07	-0.46	0.020
1/17/2005	-0.80	-0.46	0.015	-0.18	-0.01	0.006	0.37	0.23	-0.005	-0.46	0.51	0.049	-0.36	0.23	0.020
2/15/2005	-1.50	-1.16	0.015	-1.24	-0.38	0.032	-0.18	-0.52	-0.013	-1.23	0.11	0.067	-1.04	-0.42	0.021
3/15/2005	-2.60	-2.35	0.011	-2.32	-1.94	0.014	-1.33	-2.53	-0.044	-2.33	-1.53	0.040	-2.20	-2.00	0.007
4/19/2005	-1.83	-1.63	0.009	-1.70	-1.52	0.007	-1.00	-3.10	-0.078	-1.76	-0.85	0.045	-1.68	-1.38	0.010
5/17/2005	-1.67	-1.46	0.010	-1.53	-1.18	0.013	-0.72	-1.48	-0.028	-1.58	-0.85	0.036	-1.51	-1.15	0.012
6/14/2005	-1.58	-1.34	0.011	-1.43	-1.12	0.011	-0.61	-1.38	-0.029	-1.48	-0.95	0.026	-1.42	-1.04	0.013
7/15/2005	-1.53	-1.25	0.013	-1.38	-0.97	0.015	-0.59	-1.12	-0.020	-1.40	-0.85	0.027	-1.36	-0.89	0.016
8/22/2005	-1.76	-1.60	0.007	-1.63	-1.46	0.006	-0.98	-1.70	-0.027	-1.69	-1.08	0.031	-1.62	-1.54	0.003
9/20/2005	-1.88	-1.61	0.012	-1.77	-1.26	0.019	-1.12	-1.21	-0.003	-1.82	-1.21	0.031	-1.71	-1.17	0.018
10/27/2005	-2.65	-2.19	0.021	-2.51	-1.68	0.031	-1.54	-1.37	0.006	-2.55	-1.85	0.035	-2.34	-1.58	0.025
11/21/2005	-3.04	-2.62	0.019	-2.78	-1.76	0.038	-1.84	-1.50	0.013	-2.82	-2.02	0.040	-2.58	-1.96	0.021
12/13/2005	-2.52	-2.31	0.010	-2.46	-2.08	0.014	-1.87	-1.58	0.011	-2.50	-1.83	0.034	-2.40	-1.95	0.015
1/20/2006	-0.83	-0.45	0.017	-0.62	-0.34	0.010	0.68	-0.07	-0.028	-0.61	-0.42	0.009	-0.57	0.13	0.023
2/16/2006	-0.91	-0.68	0.010	-0.44	-0.21	0.009	1.10	-0.21	-0.049	-0.49	0.37	0.043	-0.24	-0.12	0.004
3/21/2006	-0.81	-0.57	0.011	-0.69	-0.23	0.017	0.43	0.12	-0.011	-0.67	0.10	0.039	-0.49	-0.08	0.014
4/14/2006	-0.73	-0.42	0.014	-0.60	-0.40	0.008	0.41	-0.65	-0.039	-0.62	0.03	0.032	-0.50	-0.38	0.004
5/18/2006	-0.33	-0.17	0.007	-0.24	-0.15	0.003	0.60	-0.51	-0.041	-0.32	0.19	0.026	-0.16	-0.08	0.003
6/5/2006	-0.02	0.15	0.008	0.06	0.09	0.001	0.76	0.18	-0.021	0.06	0.46	0.020	0.14	0.44	0.010
10/24/2006	-0.33	-0.16	0.008	-0.28	0.04	0.012	0.29	-0.11	-0.015	-0.35	0.23	0.029	-0.23	0.10	0.011
11/21/2006	-0.03	-0.08	-0.002	0.00	0.43	0.016	0.41	0.58	0.006	-0.06	0.60	0.033	0.08	0.54	0.015
12/11/2006	0.07	0.35	0.013	0.13	0.65	0.019	0.56			0.06	0.76	0.035	0.17	0.82	0.022
Average Gradient			0.009			0.004			-0.022			0.032			0.010

Notes:

1. Refer to <http://www.epa.gov/athens/learn2model/part-two/onsite/vgradient02.htm>
2. = downward vertical gradients.

TABLE 16

GENERAL PARAMETER MEASUREMENTS
Former Rhone-Poulenc Site
Tukwila, Washington

Well	Date	Temperature (degrees C) ¹	pH (units)	Specific Conductivity (mS/cm) ²	Oxygen (mg/L) ³	Potential (mV) ⁴	Turbidity (NTU) ⁵
MW-38	8/22/2003	15.12	6.59	1.15	0.47	-132	4
	9/17/2003	15.99	6.78	1.08	1.98	-135	74
	10/17/2003	15.78	6.58	1.18	-- ⁶	-124	0
	11/25/2003	14.48	6.77	1.20	1.98	-137	9
	12/15/2003	15.16	6.80	1.13	1.36	-114	0
	1/16/2004	14.65	6.86	0.832	0.83	-132	19
	2/13/2004	14.44	6.42	1.01	0.35	-114	1
	3/17/2004	13.53	6.33	0.975	1.50	-155	17
	4/15/2004	14.74	6.48	0.845	2.37	-169	29
	5/14/2004	15.30	6.45	1.05	0.31	-149	14
	6/15/2004	15.10	7.77	1.04	3.17	-87	370
	7/14/2004	15.97	7.05	0.864	0.98	-146	2
	8/17/2004	16.09	8.10	0.888	0.47	-140	2
	9/15/2004	15.26	7.01	0.97	0.54	-42	37
	10/19/2004	15.16	6.90	1.17	0.62	-40	120
	11/15/2004	15.37	6.35	1.07	0.37	-102	0
	12/15/2004	15.92	6.95* ⁷	1.15	3.63	-46	7
	1/21/2005	15.28	6.68	0.966	2.67	-110	28
	2/15/2005	15.00	7.17	1.15	2.15	53	0
	3/15/2005	14.31	6.84*	1.1	2.04	2 ⁸⁸	24
	4/19/2005	14.84	6.57	0.996	1.02	-122	0
	5/17/2005	15.20	5.60	1	0.20	-166	1
	6/14/2005	15.90	6.03	1	0.20	-124	1
	7/15/2005	15.6	5.19	1.21	2.12	21	51
	8/22/2005	15.32	6.65	1.1	2.76	-84	0
	9/20/2005	15.54	6.68	1.07	2.53	-58	2
	10/20/2005	16.32	6.53	1.933	0.51	-72.2	0
	12/13/2005	14.66	6.73	1.007	0.01	-245	2
3/21/2006	14.3	7.03	1.08	1.6	-196	3	
12/13/2006	14.60	6.33	0.830	0.31	-62	97.7	
MW-39	8/22/2003	14.68	7.35	3.11	0.24	-194	230
	9/17/2003	15.02	7.43	3.10	1.79	-190	122
	10/17/2003	15.45	7.28	3.21	--	-169	395
	11/25/2003	13.98	7.50	2.37	1.49	-213	0
	12/15/2003	14.50	7.47	2.87	1.19	-196	84
	1/16/2004	13.84	7.50	2.45	1.75	-193	219
	2/13/2004	13.94	7.29	3.15	0.36	-170	21
	3/16/2004	13.70	6.91	3.20	1.19	-203	72
	4/15/2004	14.25	7.01	2.57	2.11	-199	79
	5/14/2004	15.00	7.26	2.98	0.29	-201	80
	6/15/2004	15.10	8.96	3.03	2.58	-144	990
	7/14/2004	16.21	7.70	2.58	1.08	-188	61
	8/17/2004	15.45	8.91	2.53	0.49	-190	180
	9/15/2004	15.09	7.96	3.04	0.49	-123	120
	10/19/2004	14.44	7.62	3.23	0.44	-71	180
	11/15/2004	14.65	7.13	2.98	0.92	-164	35
	12/15/2004	14.58	7.48*	2.93	2.90	-122	41
	1/21/2005	14.54	7.25	2.99	2.50	-166	326
	2/15/2005	14.70	7.91	3.01	1.78	-21	5
	3/15/2005	14.31	7.45*	3.08	1.55	3 [#]	50
	4/19/2005	14.96	7.33	2.82	1.07	-165	199
	5/17/2005	14.60	6.15	2.80	0.20	-202	430
	6/14/2005	15.70	6.77	3.10	0.30	-186	41
	7/15/2005	15.3	5.50	3.30	1.48	-41	69
	8/22/2005	16.16	7.51	2.80	2.39	-155	165
	9/22/2005	15.31	7.63	2.88	2.93	-104	32
	10/20/2005	15.17	7.29	5.34	0.1	-88.9	5
	12/14/2005	14.15	7.48	2.82	5.62	-202	7
	3/21/2006	14.2	7.66	3.04	1.2	-212	270
	6/6/2006	15.7	7.31	2.68	0.3	-207	130
	10/24/2006	15.4	6.65	3.1	7.1 [#]	-184	41
	12/13/2006	14.56	7.43	2.79	0.18	-159	61.6

TABLE 16

GENERAL PARAMETER MEASUREMENTS
Former Rhone-Poulenc Site
Tukwila, Washington

Well	Date	Temperature (degrees C) ¹	pH (units)	Specific Conductivity (mS/cm) ²	Oxygen (mg/L) ³	Potential (mV) ⁴	Turbidity (NTU) ⁵
DM-8	8/22/2003	15.26	6.80	1.50	0.44	-157	21
	9/17/2003	15.61	6.89	1.44	1.93	-139	0
	10/17/2003	15.49	6.75	1.45	--	-115	0
	11/18/2003	14.00	6.90	1.88	1.81	-151	27
	12/15/2003	14.78	6.80	1.81	--	-133	90
	1/16/2004	14.44	6.92	1.51	3.91	-137	42
	2/13/2004	14.08	6.74	2.19	0.38	-127	0
	3/17/2004	14.40	6.33	1.98	2.54	-163	41
	4/15/2004	14.80	6.45	1.46	2.04	-142	31
	5/14/2004	15.60	6.60	1.61	0.30	-153	26
	6/16/2004	15.70	8.98	1.44	1.93	-111	23
	7/14/2004	17.28	7.10	1.10	1.44	-130	1
	8/17/2004	16.07	8.07	1.29	0.43	-125	2
	9/15/2004	15.17	7.06	1.77	0.59	-57	38
	10/19/2004	14.14	6.64	2.18	0.47	-35	90
	11/15/2004	14.26	6.62	2.09	0.48	-103	0
	12/16/2004	13.63	6.90*	2.26	2.52	-36	5
	1/17/2005	13.90	7.08	2.10	0.56	-103	0
	2/15/2005	13.80	7.53	1.79	1.26	-25	2
	3/15/2005	14.23	6.88*	1.73	1.70	2 [#]	17
	4/19/2005	15.52	6.93	1.73	1.12	-120	0
	5/17/2005	14.40	5.86	2.00	0.30	-154	21
	6/16/2005	14.8	6.47	2.00	0.5	-153	16
	7/15/2005	15.5	5.40	1.82	1.91	8	56
	8/22/2005	17.54	7.07	1.8	2.34	-111	7
	9/21/2005	14.77	7.14	1.84	2.64	-76	0*
	10/20/2005	14.91	6.85	3.311	0.12	-76.3	5
	12/16/2005	12.94	7.07	1.821	5.8	-145	12
	3/21/2006	14.5	7.07	1.25	1.5	-128	50
	6/6/2006	15.8	6.73	1.29	0.4	-140	21
10/26/2006	14	6.63	1.1	8.3 [#]	-113	17	
12/13/2006	13.68	6.75	1.59	0.44	-125	51.8	
MW-42	8/22/2003	14.92	7.50	3.07	0.23	-207	691
	9/18/2003	15.54	7.61	2.97	1.79	-193	346
	10/17/2003	15.80	7.43	3.10	--	-176	503
	11/18/2003	14.25	7.56	2.88	1.86	-200	413
	12/15/2003	14.78	7.58	2.92	--	-182	400
	1/16/2004	14.33	7.62	2.40	1.98	-188	440
	2/13/2004	13.95	7.55	3.13	0.33	-168	92
	3/17/2004	14.15	7.01	3.10	1.31	-226	160
	4/15/2004	14.41	7.22	2.57	2.04	-209	180
	5/14/2004	14.80	7.54	2.98	0.28	-214	99
	6/16/2004	15.70	9.73	2.83	2.29	-151	670
	7/14/2004	16.27	7.89	2.61	1.37	-193	38
	8/17/2004	15.85	9.20	2.59	0.44	-192	150
	9/16/2004	14.76	8.17	3.15	0.49	-115	75
	10/19/2004	14.10	7.63	3.21	0.46	-120	86
	11/15/2004	14.49	7.40	3.04	0.33	-164	130
	12/16/2004	13.93	7.66*	3.23	2.52	-102	59
	1/17/2005	13.80	8.08	3.15	0.65	-131	66
	2/15/2005	13.70	8.13	3.10	1.45	-58	10
	3/15/2005	14.27	7.77*	3.37	1.58	2 [#]	16
	4/19/2005	15.15	7.69	2.93	0.77	-178	73
	5/17/2005	14.60	6.50	3.10	0.20	-224	790
	6/16/2005	15.30	7.16	3.10	0.20	-226	190
	7/15/2005	14.80	5.61	3.38	1.27	-50	286
	8/22/2005	16.87	7.89	2.90	2.28	-170	98
	9/21/2005	14.88	7.88	2.98	2.16	-132	45
	10/20/2005	14.85	7.52	5.42	0.07	-93.2	21
	12/16/2005	12.87	7.76	2.96	6.67	-184.8	70
	3/21/2006	14.40	7.92	3.20	1.30	-200	150
	6/6/2006	15.40	7.68	2.70	0.30	-224	630
10/26/2006	14.2	7.59	2.8	8.4 [#]	-197	45	
12/12/2006	13.69	7.75	2.91	0.37	-203	67.9	

TABLE 16

GENERAL PARAMETER MEASUREMENTS
Former Rhone-Poulenc Site
Tukwila, Washington

Well	Date	Temperature (degrees C) ¹	pH (units)	Specific Conductivity (mS/cm) ²	Oxygen (mg/L) ³	Potential (mV) ⁴	Turbidity (NTU) ⁵
MW-40	8/22/2003	14.39	7.45	5.28	0.25	-199	over ⁹
	9/18/2003	14.61	7.55	5.49	1.53	-190	590
	10/17/2003	14.82	7.39	5.96	--	-180	over
	11/18/2003	13.55	7.62	5.44	2.00	-202	435
	12/16/2003	13.75	7.55	6.47	0.66	-263	234
	1/16/2004	13.64	7.62	4.83	2.64	-169	288
	2/13/2004	13.84	7.65	5.98	0.31	-165	110
	3/17/2004	13.62	6.97	6.38	1.26	-231	130
	4/15/2004	13.96	7.20	5.4	1.97	-208	69
	5/14/2004	15.20	7.64	6.46	0.28	-223	39
	6/16/2004	16.10	9.72	6.49	1.99	-148	490
	7/14/2004	16.06	7.89	6.55	0.98	-246	7
	8/17/2004	15.61	8.67	7.33	0.39	-168	93
	9/16/2004	14.38	6.37	8.28	0.49	-93	0
	10/19/2004	14.40	6.41	7.41	0.52	-100	2
	11/15/2004	14.16	7.35	8.85	0.60	-128	10
	12/16/2004	13.73	7.65*	10.5	2.29	-92	11
	1/17/2005	13.50	7.98	10	0.60	-126	0
	2/15/2005	13.20	8.34	8.71	1.05	-95	3
	3/16/2005	13.42	7.71*	11	1.21	2 [#]	34
	4/19/2005	14.66	7.84	12.4	0.34	-194	0
	5/17/2005	14.50	6.83	11	0.30	-265	21
	6/16/2005	15.00	7.11	11	0.30	-219	8
	7/15/2005	15.10	5.76	12.5	1.41	-78	78
	8/22/2005	15.67	8.04	4.4	1.87	-137	31
	9/22/2005	15.37	7.65	22.71	0.06	-111.5	2
10/20/2005	14.60	7.51	24.36	0.06	-80.7	2	
12/15/2005	12.90	7.67	15.98	6.63	-193	2	
3/21/2006	13.70	8.01	13.5	1.50	-224	20	
6/6/2006	14.80	7.83	10	0.40	-273	110	
10/26/2006	14.1	8.08	8.1	7.7 [#]	-216	16	
12/12/2006	13.46	8.32	9.46	0.25	-243	39.5	
MW-41	8/22/2003	14.79	10.05	4.80	0.21	-331	23
	9/18/2003	14.91	10.20	4.33	1.59	-311	0
	10/17/2003	15.39	10.05	7.24	--	-279	66
	11/18/2003	13.32	10.23	8.37	1.62	-360	116
	12/15/2003	14.09	9.95	10.50	0.53	-321	115
	1/16/2004	13.62	10.27	7.65	0.00	-305	64
	2/13/2004	13.89	10.59	9.22	0.31	-332	9
	3/18/2004	13.42	9.03	7.22	1.70	-354	23
	4/15/2004	14.36	9.01	5.13	2.16	-309	33
	5/14/2004	15.70	9.78	5.95	0.30	-354	34
	6/16/2004	14.90	10.52	4.82	1.76	-236	2
	7/14/2004	15.76	9.93	3.70	0.88	-425	2
	8/17/2004	15.42	8.31	2.90	0.44	-125	3
	9/16/2004	14.61	8.80	5.06	0.46	-200	0
	10/19/2004	14.20	7.82	4.88	0.49	-180	0
	11/15/2004	14.33	9.53	4.98	0.57	-242	0
	12/16/2004	14.04	9.60*	6.59	1.89	-193	6
	1/17/2005	13.20	10.66	6.06	0.49	-229	0
	2/15/2005	13.40	11.02	6.32	0.69	-271	3
	3/16/2005	13.79	9.68*	5.47	1.21	2 [#]	21
	4/19/2005	15.01	10.30	4.59	0.29	-324	0
	5/17/2005	14.40	8.91	4.60	0.20	-420	270
	6/16/2005	15.60	9.53	4.70	0.20	-419	11
	7/15/2005	15.20	6.36	4.62	0.47	-231	65
	8/22/2005	15.53	10.34	4.00	2.93	-238	11
	9/21/2005	14.51	10.41	4.20	1.62	-188	0*
10/20/2005	14.73	9.98	7.04	0.03	-71.8	0	
12/15/2005	13.12	9.82	6.00	6.03	-295.4	6	
3/22/2006	13.80	10.61	4.26	1.20	-354	15	
6/6/2006	14.90	10.47	3.94	0.30	-371	7	
10/26/2006	14.1	10.19	3.8	8.1 [#]	-289	15	
12/12/2006	13.80	9.83	4.90	0.16	-287	30.9	

TABLE 16

GENERAL PARAMETER MEASUREMENTS
Former Rhone-Poulenc Site
Tukwila, Washington

Well	Date	Temperature (degrees C) ¹	pH (units)	Specific Conductivity (mS/cm) ²	Oxygen (mg/L) ³	Potential (mV) ⁴	Turbidity (NTU) ⁵
MW-43	8/22/2003	15.66	8.95	2.80	0.33	-201	46
	9/19/2003	15.49	9.09	2.83	1.86	-280	24
	10/17/2003	15.57	9.32	3.10	--	-215	220
	11/18/2003	12.38	9.57	2.86	1.57	-305	over
	12/16/2003	14.19	10.02	3.56	0.34	-403	207
	1/16/2004	13.95	9.79	2.74	0.00	-225	120
	2/13/2004	13.90	9.76	3.43	0.32	-256	88
	3/18/2004	12.88	9.18	3.34	1.73	-348	18
	4/15/2004	14.58	9.27	2.81	2.06	-283	33
	5/14/2004	15.10	9.87	3.51	0.29	-331	36
	6/17/2004	15.20	10.35	3.70	2.19	-204	69
	7/14/2004	16.45	10.40	3.32	0.82	-362	4
	8/17/2004	16.43	11.12	3.41	0.34	-305	420
	9/17/2004	14.40	9.97	4.05	0.47	-189	61
	10/19/2004	14.24	8.70	3.49	0.50	-190	50
	11/15/2004	14.60	10.18	4.5	0.50	-251	3
	12/17/2004	14.14	10.46*	4.32	2.31	-240	9
	1/17/2005	13.40	11.33	4.56	0.60	-248	0
	2/15/2005	14.50	10.65	4.53	0.86	-244	2
	3/16/2005	14.48	10.41*	4.91	1.07	3 [#]	27
	4/19/2005	14.74	10.82	4.71	0.25	-356	0
	5/17/2005	14.80	9.45	4.7	0.20	-446	240
	6/14/2005	15.70	9.96	4.6	0.20	-393	35
	7/15/2005	14.90	6.45	0.89	1.20	-230	64
	8/22/2005	16.24	10.63	4.1	1.26	-305	98
	9/22/2005	15.18	10.49	8.127	0.05	-108.8	6
	10/20/2005	14.70	10.51	8.077	0.03	-63.9	0
	12/16/2005	12.01	10.59	4.526	8.24	-314	14
	3/22/2006	13.80	10.92	4.63	1.10	-361	12
	6/5/2006	15.20	10.94	3.75	0.20	-416	over
10/27/2006	14.6	10.30	4.6	13.7 [#]	-280	20	
12/12/2006	14.30	10.84	4.44	0.15	-365	30.1	
MW-44	8/22/2003	15.38	9.88	3.26	0.24	-417	20
	9/19/2003	15.06	10.20	3.70	1.68	-437	18
	10/17/2003	15.53	9.91	3.47	--	-381	131
	11/18/2003	13.79	10.57	3.94	1.55	-451	134
	12/16/2003	13.89	10.35	3.59	0.27	-472	108
	1/16/2004	14.03	10.19	2.93	0.00	-335	100
	2/13/2004	14.13	10.09	3.43	0.33	-327	16
	3/18/2004	13.95	9.80	4.05	1.70	-445	11
	4/15/2004	14.46	10.01	3.60	2.08	-405	30
	5/14/2004	14.80	10.38	3.78	0.27	-438	32
	6/17/2004	15.30	11.27	4.10	1.75	-270	58
	7/14/2004	16.18	11.19	4.10	0.63	-412	2
	8/17/2004	16.26	11.83	4.41	0.35	-345	3
	9/16/2004	14.78	11.02	4.82	0.44	-169	0
	10/19/2004	13.90	6.71	4.21	0.45	-140	0
	11/15/2004	14.78	10.72	4.72	0.36	-277	0
	12/17/2004	14.31	10.93*	4.65	1.80	-227	7
	1/17/2005	13.80	12.27	5.08	0.57	-276	0
	2/15/2005	14.40	11.14	4.59	0.67	-272	1
	3/16/2005	14.20	10.91*	5.14	1.04	2 [#]	13
	4/19/2005	14.85	11.61	5.1	0.14	-423	0
	5/17/2005	14.90	10.12	5.0	0.20	-492	100
	6/14/2005	14.90	10.78	5.0	0.20	-493	58
	7/15/2005	15.20	6.68	5.52	0.91	-271	61
	8/22/2005	15.41	11.47	4.7	1.14	-343	35
	9/22/2005	15.26	11.07	8.062	0.02	-99	7
	10/20/2005	14.72	11.21	8.749	0.03	-62.6	0
	12/16/2005	11.74	11.00	4.333	7.01	-291.8	14.1
	3/22/2006	14.00	11.88	5.41	1.00	-428	11
	6/5/2006	15.00	11.82	4.29	0.20	-489	over
10/27/2006	14.9	10.88	5.3	13.4 [#]	-342	48	
12/12/2006	14.27	11.43	4.68	0.21	-378	24.1	

TABLE 16
GENERAL PARAMETER MEASUREMENTS

Former Rhone-Poulenc Site

Tukwila, Washington

Well	Date	Temperature (degrees C) ¹	pH (units)	Specific Conductivity (mS/cm) ²	Oxygen (mg/L) ³	Potential (mV) ⁴	Turbidity (NTU) ⁵
MW-45	8/22/2003	14.21	7.49	2.17	0.29	-206	176
	9/19/2003	13.82	7.42	2.17	1.74	-211	279
	10/17/2003	14.39	7.28	2.24	--	-164	422
	11/18/2003	13.40	7.71	2.10	1.73	-196	470
	12/16/2003	13.28	7.65	2.24	--	-180	567
	1/16/2004	12.80	7.58	1.72	0.00	-186	463
	2/13/2004	12.71	7.53	2.24	0.31	-166	320
	3/16/2004	12.78	7.12	2.29	1.32	-222	220
	4/15/2004	13.00	7.23	1.81	2.34	-207	190
	5/14/2004	13.80	7.48	2.15	0.26	-216	210
	6/17/2004	14.30	8.66	2.01	2.75	-118	210
	7/14/2004	14.61	7.72	1.81	0.60	-200	21
	8/17/2004	14.95	8.64	1.96	0.38	-171	130
	9/17/2004	13.77	7.99	2.28	0.47	-83	140
	10/19/2004	13.11	7.40	2.43	0.52	-60	86
	11/15/2004	13.81	7.12	2.29	0.31	-148	63
	12/17/2004	13.46	7.44*	0.97	1.92	-66	990
	1/21/2005	13.45	7.35	2.00	2.77	-179	over
	2/15/2005	12.80	7.99	2.09	0.90	-75	22
	3/17/2005	13.43	7.54*	2.05	1.18	-269	85
	4/19/2005	13.73	7.98	2.09	0.28	-202	90
	5/17/2005	13.70	6.89	2.2	0.20	-229	340
	6/15/2005	14.40	6.66	2.3	0.30	-227	120
	7/15/2005	13.80	5.67	2.36	0.97	-50	40
	8/22/2005	14.48	7.97	2.1	1.40	-177	190
	9/22/2005	14.05	7.48	3.848	0.07	-176.6	27
10/20/2005	13.81	7.34	3.923	0.05	-79.9	12	
12/14/2005	12.79	7.54	2.057	7.10	-184.7	27	
3/22/2006	13.20	7.99	2.28	1.40	-205	97	
6/5/2006	13.50	7.42	2.15	0.30	-208	21	
10/26/2006	13.8	7.39	2.1	7.8 [#]	-184	91	
12/12/2006	13.47	7.33	2.21	0.22	-168	93.1	
MW-46	8/22/2003	14.34	6.22	1.64	0.78	-97	24
	9/19/2003	14.41	6.38	2.07	1.73	-112	5
	10/17/2003	14.62	6.23	2.43	--	-72	0
	11/18/2003	13.77	6.48	2.67	1.79	-93	21
	12/16/2003	13.93	6.37	2.88	--	-64	220
	1/16/2004	13.62	6.51	1.77	7.22	-74	80
	2/13/2004	13.18	6.49	1.93	0.33	-89	6
	3/16/2004	13.52	5.99	1.87	1.26	-153	12
	4/15/2004	13.86	6.13	1.41	3.83	-129	26
	5/14/2004	14.20	6.32	1.57	0.28	-130	32
	6/17/2004	15.40	7.56	1.45	4.53	-40	36
	7/14/2004	15.29	6.72	1.28	0.65	-116	3
	8/17/2004	15.21	7.64	1.47	1.62	-97	9
	9/17/2004	14.26	6.84	1.76	0.58	-1	80
	10/19/2004	13.04	6.71	1.45	0.55	-10	60
	11/15/2004	14.13	6.17	2.66	0.30	-77	0
	12/17/2004	13.96	6.46*	2.31	2.12	-25	7
	1/17/2005	13.40	6.48	2.47	0.77	-12	0
	2/15/2005	14.00	7.01	2.10	1.22	-7	0
	3/17/2005	13.83	6.43*	2.18	1.06	-238	3
	4/19/2005	14.24	6.70	1.87	0.42	-117	13
	5/17/2005	14.10	6.24	2.00	0.40	-206	20
	6/15/2005	14.70	5.54	2.10	0.30	-121	12
	7/15/2005	14.20	5.50	2.10	1.20	16	3
	8/22/2005	15.81	6.85	1.90	1.30	-89	201
	9/22/2005	14.20	6.25	3.75	0.06	-97.6	1
10/20/2005	13.93	6.26	8.25	0.05	-77.9	0	
12/14/2005	13.32	6.50	2.65	7.14	-138	0.67	
3/22/2006	13.60	6.73	1.86	1.70	-124	19	
6/5/2006	14.20	6.49	1.54	0.40	-141	0	
10/26/2006	14.1	6.31	1.8	7.8 [#]	-90	5	
12/11/2006	13.83	6.50	2.20	0.33	-110	40.6	

Notes:

1. degrees C = degrees Centigrade.
2. mS/cm = millisiemens per centimeter.
3. mg/L = milligrams per liter.
4. mV = millivolts.
5. NTU = nephelometric turbidity unit.
6. -- = reading not collected due to malfunction.
7. * = Laboratory pH reading used due to field instrument malfunction.
8. # = Reading appeared to be inaccurate due to field instrument malfunction.
9. over = the reading was above the range of the instrument.

TABLE 17
FIELD pH READINGS DURING
GROUNDWATER PERFORMANCE MONITORING, 2002-2006¹
Former Rhone-Poulenc Site
Tukwila, Washington

Sample Location	Inside/Outside Barrier Wall	Aquifer or Zone	Field pH															
			Round 17 Sep-2002	Round 18 Dec-2002	Round 21 Sep-2003	Round 22 Dec-2003	Round 23 Mar-2004	Round 24 Jun-2004	Round 25 Sep-2004	Round 26 Dec-2004	Round 27 Mar-2005	Round 28 Jun-2005	Round 29 Sep-2005	Round 30 Dec-2005	Round 31 Mar-2006	Round 32 Jun-2006	Round 33 Oct-2006	Round 34 Dec-2006
B1A	Outside	Upper Zone	6.57	6.49	6.46	6.27	6.22	n/s	6.55	6.36	6.43	5.61	6.48	6.54	6.45	5.86	4.82 ³	5.78
DM-5	Inside	Upper Zone	7.39	7.06	7.02	9.86	6.7	8.52	6.27	7.32	7.28	6.13	7.52	7.28	7.51	n/s	6.55	n/s
DM-8	Outside	Upper Zone	6.81	6.74	6.89	6.8	6.33	8.98	7.06	6.9 ⁴	6.88 ⁴	6.47	7.14	7.07	7.07	6.73	6.63	6.75
EX-3	Inside	Upper Zone	n/a ⁵	n/a	7.02 ⁶	6.54	n/s	n/s	n/s	6.67	6.68	6.01	6.85	6.8	6.95	n/s	6.44	n/s
MW-17	Inside	Upper Zone	6.79	6.57	6.46	9.89	6.47	9.02	5.83	7.36	7.09	6.34	7	7.06	6.79	n/s	6.53	n/s
MW-27	Inside	Upper Zone	10.07	9.69	8.77	8.36	9.04	11.34	10.71	10.66	10.56	8.8	10.04	9.58	7.9	n/s	8.69	n/s
MW-28	Inside	Upper Zone	10.11	9.73	10.03	10.05	9.56	10.99	10.17	10.46	10.44	9.57	10.57	10.82	11.32	n/s	10.79	n/s
MW-29	Inside	Upper Zone	6.48	n/s	6.54	n/s	6.21	8.44	6.66	6.49	6.67	6.05	6.62	6.78	6.85	n/s	5.66	n/s
MW-38	Outside	Upper Zone	6.41	6.68	6.78	6.8	6.33	7.77	7.01	6.95 ⁴	6.84 ⁴	6.03	6.68	6.73	7.03	n/s	n/s	6.33
MW-39	Outside	Lower Zone	7.48	7.34	7.43	7.47	6.91	8.96	7.96	7.48 ⁴	7.45 ⁴	6.77	7.63	7.48	7.66	7.31	6.65	7.43
MW-40	Outside	Lower Zone	7.8	7.49	7.55	7.55	6.97	9.72	6.37	7.65 ⁴	7.71 ⁴	7.11	7.65	7.67	8.01	7.83	8.08	8.32
MW-41	Outside	Upper Zone	10.44	9.65	10.2	9.95	9.03	10.52	8.8	9.6 ⁴	9.68 ⁴	9.53	10.41	9.82	10.61	10.47	10.19	9.83
MW-42	Outside	Lower Zone	7.91	7.56	7.61	7.58	7.01	9.73	8.17	7.66 ⁴	7.77 ⁴	7.16	7.88	7.76	7.92	7.68	7.59	7.75
MW-43	Outside	Lower Zone	10.8	9.75	9.09	10.02	9.18	10.35	9.97	10.46 ⁴	10.41 ⁴	9.96	10.49	10.59	10.92	10.94	10.3	10.84
MW-44	Outside	Upper Zone	9.89	9.57	10.2	10.35	9.8	11.27	11.02	10.93 ⁴	10.91 ⁴	10.78	11.07	11	11.88	11.82	10.88	11.43
MW-45	Outside	Lower Zone	7.6	7.31	7.42	7.65	7.12	8.66	7.99	7.44 ⁴	7.54 ⁴	6.66	7.48	7.54	7.99	7.42	7.39	7.33
MW-46	Outside	Upper Zone	6.65	6.3	6.38	6.37	5.99	7.56	6.84	6.46 ⁴	6.43 ⁴	5.54	6.25	6.5	6.73	6.49	6.31	6.5

Notes:

1. This table lists field pH readings; despite the use of calibrated field instruments, these readings are more variable than laboratory pH readings.
2. n/s = Not sampled during these events. EX-3 was not sampled during Rounds 23-25 because the pump system was not in operation. B1-A was not sampled during Round 24 due to a pump malfunction. MW-29 was not sampled during Rounds 18 and 22 due to ponding atop the well.
3. pH meter was recalibrated after sample collection due to lower-than-expected pH reading.
4. Laboratory reading used due to field instrument malfunction.
5. n/a = EX-3 not installed until April 2003
6. pH Value for nearby well DM5 used because pH was not measured at EX-3.

TABLE 18

**GROUNDWATER ANALYTICAL RESULTS FOR COPPER
GROUNDWATER PERFORMANCE MONITORING, 2002-2006**

Former Rhone-Poulenc Site
Tukwila, Washington

units are in micrograms per liter (µg/L) or parts per billion (ppb)

Sample Location	Inside/ Outside Barrier Wall	Aquifer or Zone	Total Copper (µg/L)															
			Round 17	Round 18	Round 21	Round 22	Round 23	Round 24	Round 25	Round 26	Round 27	Round 28	Round 29	Round 30	Round 31	Round 32	Round 33	Round 34
			Sep-2002	Dec-2002	Sep-2003	Dec-2003	Mar-2004	Jun-2004	Sep-2004	Dec-2004	Mar-2005	Jun-2005	Sep-2005	Dec-2005	Mar-2006	Jun-2006	Oct-2006	Dec-2006
B1A	Outside	Upper Zone	3	6	2	4	3	n/s ¹	5	9	2 U ²	2 U	3	17	3 J ³	2 U	2 U	2
DM-5	Inside	Upper Zone	29	29	41	44	37	22	24	23	25	26	28	24	28 J	--	32	n/s
DM-8	Outside	Upper Zone	25	9	24	20	11	10	10	13	15	13	21	17	12 J	16	17	29
DM-8 dup ⁴	Outside	Upper Zone	24	-- ⁵	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EX-3	Inside	Upper Zone	n/a ⁶	n/a	5	2 U	n/s	n/s	n/s	5	5	3	4	4	7 J	--	5	--
MW-17	Inside	Upper Zone	23	22	2	7	17	19	32	31	30	24	27	21	3 J	--	6	--
MW-27	Inside	Upper Zone	15	16	31	48	75	94	56	48	58	84	44	200	59 J	--	90	--
MW-28	Inside	Upper Zone	35	69	28	33	72	75	71	75	90	69	80	83	119 J	--	72	--
MW-28 dup	Inside	Upper Zone	--	--	29	39	69	79	75	76	95	72	82	84	123 J	--	85	--
MW-29	Inside	Upper Zone	2	n/s	2 U	n/s	3	2 U	2 U	2 U	2 U	3	2 U	2 U	2 J	--	2	--
MW-38/-38R	Outside	Upper Zone	2	4	15	18	16	20	9	14	12	6	11	6	11 J	n/a	n/a	13
MW-38/-38R dup	Outside	Upper Zone	--	5	--	--	--	--	--	--	--	--	--	--	--	--	--	13
MW-39	Outside	Lower Zone	43	30	16	16	12	22	12	14	13	11	12	11	17 J	10	12	16
MW-40	Outside	Lower Zone	9	8	58	43	26	23	14	22	66	16	10	6	6 J	17	15	10
MW-41	Outside	Upper Zone	120	86	169	88	50	29	102	32	51	132	143	44	94 J	114	149	46
MW-41 dup	Outside	Upper Zone	--	93	180	70	46	34	84	38	54	139	151	45	112 J	98	143	--
MW-42	Outside	Lower Zone	112	51	38	20	17	14	17	16	15	22	19	31	19 J	14	16	12
MW-43	Outside	Lower Zone	224	101	26	29	31	37	36	46	43	44	50	47	46 J	38	31	26
MW-44	Outside	Upper Zone	75	32	121	108	158	148	147	17	124	131	189	185	192 J	164	207	173
MW-45	Outside	Lower Zone	60	19	41	38	33	22	23	145	24	19	16	14	18 J	13	17 U	24
MW-46	Outside	Upper Zone	3	3	2	15	2 U	2	2 U	2 U	4	2 U	2 U	2	2 UJ ⁷	2 U	2	3
MW-46 dup	Outside	Upper Zone	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9 J-

Notes:

1. n/s = Not sampled during these events. EX-3 was not sampled during Rounds 23-25 because the pump system was not in operation. B1A was not sampled during Round 24 due to a pump malfunction. MW-29 was not sampled during Rounds 18 and 22 due to ponding atop the well.
2. U = Not detected at detection limit indicated.
3. J = Value on left is the estimated concentration.
4. dup = field duplicate sample.
5. -- = Well not included in performance monitoring plan for that sampling round.
6. n/a = Indicated well not yet installed during indicated sampling rounds.
7. UJ = The analyte was not detected; the associated detection limit is an estimated value.

TABLE 19

**GROUNDWATER ANALYTICAL RESULTS FOR ARSENIC
GROUNDWATER PERFORMANCE MONITORING, 2002-2006**

Former Rhone-Poulenc Site
Tukwila, Washington

units are in micrograms per liter (µg/L) or parts per billion (ppb)

Sample Location	Inside/ Outside Barrier Wall	Aquifer or Zone	Total Arsenic (µg/L)															
			Round 17 Sep-2002	Round 18 Dec-2002	Round 21 Sep-2003	Round 22 Dec-2003	Round 23 Mar-2004	Round 24 Jun-2004	Round 25 Sep-2004	Round 26 Dec-2004	Round 27 Mar-2005	Round 28 Jun-2005	Round 29 Sep-2005	Round 30 Dec-2005	Round 31 Mar-2006	Round 32 Jun-2006	Round 33 Oct-2006	Round 34 Dec-2006
B1A	Outside	Upper Zone	1 U ¹	1 U	1 U	1 U	1 U	n/s ²	1 U	2 U	1 U	1 U	1 U	1	1 U	1	1 U	1 U
DM-5	Inside	Upper Zone	40	30	27	32	10	15	17	21	18	20	25	23	29	-- ³	28	n/s
DM-8	Outside	Upper Zone	10	20	15	14	14	14	9	4	4	3	3	6	5	4	3	4
DM-8 dup ⁴	Outside	Upper Zone	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EX-3	Inside	Upper Zone	n/a ⁵	n/a	3	4	n/s	n/s	n/s	3	4 J- ⁶	1 U	1	3	2	--	2	--
MW-17	Inside	Upper Zone	10	7	10	5	13	15	18	18	14 J-	13	17	14	54	--	23	--
MW-27	Inside	Upper Zone	24	22	6	30	52	18	40	1 U	21 J-	10	6	23	6	--	7	--
MW-28	Inside	Upper Zone	2	2	5	6	3	1	4	1	4 J-	4	5	9 J ⁷	9	--	7 J	--
MW-28 dup	Inside	Upper Zone	--	--	6	2	3	4	4	2	5 J-	3	3	6 J	7	--	13 J	--
MW-29	Inside	Upper Zone	17	n/s	15	n/s	13	9	12	11	12	12	10	12	12	--	7	--
MW-38/-38R	Outside	Upper Zone	3	4	8	8	8	10	7	8	4	4	6	4	6	n/a	n/a	4
MW-38/-38R dup	Outside	Upper Zone	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--	5
MW-39	Outside	Lower Zone	4	2	2	2	2	2	1	1	1	2	2	1	2	3 U	1	1
MW-40	Outside	Lower Zone	2	2 U	4	1 U	1	1 U	2	1 U	5 U	1 U	2	2 U	2	3	1 U	1
MW-41	Outside	Upper Zone	10	5	13	3	5	4	8	6	6	5 U	11	6	8	9	12	6
MW-41 dup	Outside	Upper Zone	--	6	13	5	6	5	9	6	5	6	12	5	9	7	10	
MW-42	Outside	Lower Zone	10	2	7	2	2	1	2	2	1	2	2	4	3	4	2 U	3
MW-43	Outside	Lower Zone	12	12	3	5 U	10	6	8	8	7	3	8	6	10	15	10	7 J-
MW-44	Outside	Upper Zone	5	2	5	1 U	5	6	2 U	20	4	6	10	9	16	17	29	9 J-
MW-45	Outside	Lower Zone	1	1 U	2	1	4	2 U	3	4	2 J-	2	2 U	1	2	3	2	2
MW-46	Outside	Upper Zone	1 U	1 U	1	1 U	1 U	1 U	1 U	1 U	1 J-	1 U	1	1 U	1 U	1	1 U	1
MW-46 dup	Outside	Upper Zone	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U

Notes:

1. U = Not detected; value to left is the detection limit.
2. n/s = Not sampled during these events. EX-3 was not sampled during Rounds 23-25 because the pump system was not in operation. B1-A was not sampled during Round 24 due to a pump malfunction. MW-29 was not sampled during Rounds 18 and 22 due to ponding atop the well.
3. -- = well not included in performance monitoring plan for that sampling round.
4. dup = field duplicate sample
5. n/a = Well not yet installed during indicated sampling round.
6. J- = Value is estimated as biased low.
7. J = Indicated value is estimated concentration.

TABLE 20

**GROUNDWATER ANALYTICAL RESULTS FOR MERCURY
GROUNDWATER PERFORMANCE MONITORING, 2002-2006**

Former Rhone-Poulenc Site
Tukwila, Washington

units are in micrograms per liter (µg/L) or parts per billion (ppb)

Sample Location	Inside/ Outside Barrier Wall	Aquifer or Zone	Total Mercury (µg/L)																
			Round 17	Round 18	Round 21	Round 22	Round 23	Round 24	Round 25	Round 26	Round 27	Round 28	Round 29	Round 30	Round 31	Round 32	Round 33	Round 34	
			Sep-2002	Dec-2002	Sep-2003	Dec-2003	Mar-2004	Jun-2004	Sep-2004	Dec-2004	Mar-2005	Jun-2005	Sep-2005	Dec-2005	Mar-2006	Jun-2006	Oct-2006	Dec-2006	
B1A	Outside	Upper Zone	0.1 U ¹	0.1 U	0.1 U	0.1 U	0.1 U	n/s ²	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
DM-5	Inside	Upper Zone	0.1	0.1	4 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1	--	0.1 U	--	
DM-8	Outside	Upper Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
DM-8 dup ³	Outside	Upper Zone	0.1 U	-- ⁴	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
EX-3	Inside	Upper Zone	n/a ⁵	n/a	0.1 U	0.1 U	n/s	n/s	n/s	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	--	
MW-17	Inside	Upper Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	--
MW-27	Inside	Upper Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	--
MW-28	Inside	Upper Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	--
MW-28 dup	Inside	Upper Zone	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	--
MW-29	Inside	Upper Zone	0.1 U	n/s	0.2 U	n/s	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	--
MW-38/-38R	Outside	Upper Zone	0.1 U	0.1 U	0.1 U	0.5	0.1 U	0.2	0.1 U	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1	n/a	n/a	0.1 U	
MW-38/-38R dup	Outside	Upper Zone	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	
MW-39	Outside	Lower Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-40	Outside	Lower Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-41	Outside	Upper Zone	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-41 dup	Outside	Upper Zone	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--
MW-42	Outside	Lower Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-43	Outside	Lower Zone	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UR ⁶
MW-44	Outside	Upper Zone	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 UR
MW-45	Outside	Lower Zone	0.1 U	0.1 U	0.2	0.1	0.1 U	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-46	Outside	Upper Zone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-46 dup	Outside	Upper Zone	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U

Notes:

1. U = Not detected; value to left is the detection limit.
2. n/s = Not sampled during these events. EX-3 was not sampled during Rounds 23-25 because the pump system was not in operation. B1-A was not sampled during Round 24 due to a pump malfunction. MW-29 was not sampled during Rounds 18 and 22 due to ponding atop the well.
3. dup = field duplicate sample.
4. -- = Well not indicated in performance monitoring plan for that sampling round.
5. n/a = Well not yet installed during indicated sampling round.
6. UR = The analyte was not detected; however, this result is flagged as rejected based on quality control criteria.

TABLE 21

**GROUNDWATER ANALYTICAL RESULTS FOR TOLUENE
GROUNDWATER PERFORMANCE MONITORING, 2002-2006¹**

Former Rhone-Poulenc Site
Tukwila, Washington

units in micrograms per liter (µg/L) or parts per billion (ppb)

Sample Location	Inside/ Outside Barrier Wall	Aquifer or Zone	Toluene (µg/L)															
			Round 17	Round 18	Round 21	Round 22	Round 23	Round 24	Round 25	Round 26	Round 27	Round 28	Round 29	Round 30	Round 31	Round 32	Round 33	Round 34
			Sep-2002	Dec-2002	Sep-2003	Dec-2003	Mar-2004	Jun-2004	Sep-2004	Dec-2004	Mar-2005	Jun-2005	Sep-2005	Dec-2005	Mar-2006	Jun-2006	Oct-2006	Dec-2006
B1A	Outside	Upper Zone	0.5 U ²	0.5 U	0.5 U	0.5 U	0.5 U	n/s ³	0.6 U	0.5 U	2.0	0.50 U	0.50 U	43	0.25 U	0.25 U	0.25 U	1.0 U
DM-5	Inside	Upper Zone	2.5 U	2.2	0.5 U	2.5 U	3.7	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.25 U	0.25 U	-- ⁴	0.25 U	--
DM-8	Outside	Upper Zone	99	0.5 U	0.5 U	0.5 U	0.5 UJ ⁵	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.38 J ⁶	0.25 U	0.25 U	0.25 U	1.0 U
DM-8 dup ⁷	Outside	Upper Zone	91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EX-3	Inside	Upper Zone	n/a ⁸	n/a	0.5 U	0.5 U	n/s	n/s	n/s	0.5 U	0.7	0.50 U	0.50 U	0.27 J	5	--	1.5	--
MW-17	Inside	Upper Zone	340,000	300,000	45,000	120,000	110,000 J	200,000	100,000	150,000	170,000	350,000	260,000	240,000	320,000	--	280,000	--
MW-27	Inside	Upper Zone	0.5 U	71	0.5 U	2.5 U	1.7	7.7	0.5 U	43	39	2.4	2.4	1.30 J	2.10	--	0.25 U	--
MW-28	Inside	Upper Zone	62,000	43,000	14,000	13,000	6,100 J	7,700	6,200	5,300	4,800	4,200	2,800	2,400 J	2,600	--	750	--
MW-28 dup	Inside	Upper Zone	--	--	14,000	13,000	5,900 J	7,600	6,900	5,400	4,800	4,400	3,100	2,300	2,600	--	760	--
MW-29	Inside	Upper Zone	36,000	n/s	0.5 U	n/s	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.40 J	0.25 U	--	0.25 U	--
MW-38	Outside	Upper Zone	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.25 U	0.25 U	n/a	n/a	1.0 U
MW-38 dup	Outside	Upper Zone	--	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U
MW-39	Outside	Lower Zone	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.59	0.50 U	0.25 U	0.25 U	0.25 U	0.25 U	1.0 U
MW-40	Outside	Lower Zone	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.25 U	0.25 U	0.25 U	0.25 U	1.0 U
MW-41	Outside	Upper Zone	82	2.3	260	190	7.4	4.8	88 U	16	5.5	190	160	23	150 J	190	57	42 J
MW-41 dup	Outside	Upper Zone	--	1.8	250	190	7.7	4.5	88 U	16	4.3	190	170	25	110 J	190	56	--
MW-42	Outside	Lower Zone	0.9	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	1.80	0.25 U	0.25 U	0.25 U	1.0 U
MW-43	Outside	Lower Zone	62	11	1.8	14	8.2	24	21 U	28	28	26	29	31	22	22	12	28 J
MW-44	Outside	Upper Zone	160	29	120	94	140	180	220	200	240	240	220	170	250	250	170	170 J
MW-45	Outside	Lower Zone	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.25 U	0.25 U	0.25 U	0.25 U	1.0 U
MW-46	Outside	Upper Zone	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.25 U	0.25 U	0.25 U	0.25 U	1.0 U
MW-46 dup	Outside	Upper Zone	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U

Notes:

1. The National Recommended Water Quality Criteria for toluene in water is 15,000 µg/L based on human health consumption of organism only. Concentrations that exceed this value are in **bold**.
2. U = Not detected; value to left is the detection limit.
3. n/s = Not sampled during these events. EX-3 was not sampled during Rounds 23-25 because the pump system was not in operation. B1-A was not sampled during Round 24 due to a pump malfunction. MW-29 was not sampled during Rounds 18 and 22 due to ponding atop the well.
4. -- = Well not included in performance monitoring plan for that sampling round.
5. UJ = The analyte was not detected; the associated detection limit is an estimated value.
6. J = Indicated value is estimated concentration.
7. dup = field duplicate sample.
8. n/a = Well not yet installed during indicated sampling period.

TABLE 22

SUMMARY OF WATER QUALITY CRITERIA FOR ARSENIC, COPPER, AND MERCURY¹
 Former Rhone-Poulenc Site
 Tukwila, Washington

units are in micrograms per liter (µg/L)

Analyte	NRWQC-2006 ²		State of Washington ³	
	Fresh Water CCC ⁴	Saltwater CCC	Fresh Water CTC ⁴	Saltwater CTC
Arsenic	150	36	190.0	36.0
Copper	12.23	3.1	15.11	3.1
Mercury	0.77	0.94	0.012	0.025

Notes:

1. The criteria are based on dissolved metal concentrations; groundwater sample analytical data collected show that total metals concentrations are representative of dissolved metals concentrations.
2. CCC = Criterion Continuous Concentration.
CTC = Chronic Toxicity Criteria.
3. NRWQC-2006 = National Recommended Water Quality Criteria, U.S. Environmental Protection Agency, Office of Science and Technology, 2006.
4. State of Washington fresh water and saltwater CTC based on Washington Administrative Code 173-201A-240 - Toxic Substances.
Both the Fresh Water CCC and Fresh Water CTC water quality standards were calculated based on hardness as measured in a water sample from DM-8 collected on 12/16/2005.

TABLE 23

CALCULATIONS FOR DETERMINING WATER QUALITY CRITERIA

Former Rhone-Poulenc Site

Tukwila, Washington

Sample Location	DM-8		
Sample Date	12/16/2005		
Dissolved Metals (mg/L)	mg/L	meq/L	Hardness as mg/L CaCO ₃
Calcium	19.2	0.96	47.9
Iron	13	0.47	23.28
Magnesium	8.58	0.71	35.31
Manganese	1.27	0.05	2.31
Total Hardness =			108.81

Where

$$\text{meq/L} = \frac{\text{Con. (mg/L)}}{\text{MW}} \cdot 2$$

Total Hardness (mg/L as CaCO₃) = 50*(Total Hardness in meq/L)

Calculation of Criterion Continuous Concentration (CCC) for Copper in Fresh Water	
Based on hardness from 12/16/2005 sample from DM-8	
Hardness = 108.8 mg/L as CaCO ₃	
CCC(diss) = exp{M _c [ln(hardness)] + b _c } • (CF)	
= {0.8545[ln(108.8)] - 1.702} • 0.96	
= exp{0.8545 • (4.69 - 1.702)} • 0.96	
= exp{0.8545 • (2.988)} • 0.96	
= 12.84 • 0.96	
= 12.33 µg/L	
Where	
M _c = 0.8545	
b _c = -1.702	
CF = Concentration Factor = 0.96	

Calculation of WAC 173-201A-240 Copper Fresh Water Chronic Toxicity Criteria (CTC)	
Based on hardness from 12/16/2005 sample from DM-8	
Hardness = 108.8 mg/L as CaCO ₃	
CTC = exp{0.8545[ln(hardness)] - 1.465} • 0.96	
= exp{0.8545(ln 108.8 - 1.465)} • 0.96	
= exp{0.8545(4.690 - 1.465)} • 0.96	
= exp(2.756) • 0.96	
= 15.73 • 0.96	
= 15.10 µg/L	