EPA Contract No. 68-W6-0042
EPA Work Assignment No. 158-RICO-0157

EPA Project Officer: Diana King
EPA Remedial Project Manager: Donald McElroy

GROUNDWATER DATA EVALUATION REPORT

IRON HORSE PARK SUPERFUND SITE
OPERABLE UNIT 4
North Billerica, Massachusetts

September 2006

Prepared by:

Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, Massachusetts

METCALF & EDDY | AECOM

SDMS DocID 472620

TABLE OF CONTENTS

Page

LIST OF TABLES ii
LIST OF FIGURES iii
LIST OF APPENDICES iv

1.0 INTRODUCTION 1-1
1.1 Site Background 1-1
1.2 Site History 1-2
1.3 Problem Definition/Present Study 1-9

2.0 FIELD OPERATIONS 2-1
2.1 Field Reconnaissance 2-1
2.2 Monitoring Well Installation 2-1
2.2.1 Monitoring Well Locations 2-1
2.2.2 Installation Procedures 2-2
2.2.3 Monitoring Well Development 2-4
2.3 Groundwater Sampling and Analysis 2-5
2.4 LNAPL Sampling and Analysis 2-6
2.5 Staff Gauge Installation 2-7
2.6 Water Level Measurements 2-7
2.7 Site Surveying 2-8

3.0 SITE CHARACTERISTICS 3-1
3.1 Geographic Setting 3-1
3.2 Site Geologic Conditions 3-2
3.3 Site Hydrogeologic Conditions 3-3
3.3.1 Overburden Groundwater 3-4
3.3.2 Overburden and Surface Water Interactions 3-5
3.3.3 Bedrock Groundwater 3-5

4.0 PRESENTATION OF ANALYTICAL DATA 4-1
4.1 Analytical Data Validation and Review 4-1
4.1.1 Volatile Organic Compounds 4-3
4.1.2 Semivolatile Organic Compounds 4-3
4.1.3 Pesticides/PCBs 4-4
4.1.4 Metals 4-4
4.1.5 1,4-Dioxane 4-4
4.1.6 Petroleum Hydrocarbon Identification 4-4
4.1.7 TOC and Grain Size 4-5
4.2 Groundwater Nature and Extent 4-5
4.3 Subsurface Soil Results 4-8

TABLE OF CONTENTS (Continued)

Page

5.0 CONCLUSIONS 5-1

6.0 REFERENCES 6-1

LIST OF TABLES

No.	Name
2-1	Monitoring Well and Piezometer Construction Information
2-2	Monitoring Wells and Piezometers Selected for Water Level Measurements and Chemical Analysis
3-1	Water Level Measurements - Comprehensive Round - March 2006
4-1	Groundwater Sampling Results - Winter 2005-2006 - Detects Only
4-2	Comparison of Groundwater Monitoring Results - Historical Versus Winter 2005-2006
4-3	Notable Detections and Observations of Winter 2005-2006 Groundwater Monitoring Round

LIST OF FIGURES

No.	Name
1-1	Site Locus
1-2	Site Map
2-1	Monitoring Well, Piezometer, and Staff Gauge Locations
3-1	Groundwater Elevation Contours, Shallow Overburden, March 31, 2006
3-2	Groundwater Elevation Contours, Bedrock, March 31, 2006

LIST OF APPENDICES

A. Field Sampling Documentation
   - A.1 Tables
   - A.2 Field Sampling Logbooks #1, #2, #3, and #4
   - A.3 Monitoring Well Sampling Worksheets
   - A.4 Groundwater Sampling Instrument Calibration Logs

B. Chain-of-Custody Documentation

C. Boring Logs and Monitoring Well Construction Diagrams

D. Survey Data

E. Photographs from the Site Investigation

F. Analytical Data

SECTION 1.0
INTRODUCTION

The U.S. Environmental Protection Agency, Region I, New England (EPA) headquartered in Boston, Massachusetts contracted with Metcalf & Eddy, Inc. (M&E) of Wakefield, Massachusetts under EPA's Response Action Contract (RAC) to provide Remedial Investigation/Feasibility Study (RI/FS) services for Operable Unit 4 (OU-4) of the Iron Horse Park Superfund Site in North Billerica, Massachusetts (the site). The goal of the work presented in this Data Evaluation Report is to gather current groundwater data to supplement the 1995 groundwater investigation in support of the OU-4 Feasibility Study and Record of Decision.

1.1 Site Background

The Iron Horse Park Superfund Site occupies approximately 553 acres in North Billerica, Massachusetts, near the Tewksbury town line, approximately 20 miles northwest of Boston (Figure 1-1). The site is bounded on the north by the B&M railroad tracks, on the west by High Street and an auto salvage yard, on the east by Gray Street, and on the south by a wetland, Pond Street, and the Middlesex Canal (Figure 1-2). The Middlesex Canal flows through the site to the east, where it joins Content Brook at the southeastern edge of the Shaffer Landfill. It then flows to the Shawsheen River and ultimately to the Merrimack River to the north. There are abundant wetlands and forested areas at the site. Approximately 20% of the site is forested while 17% is wetland habitat. In addition, several large wetland complexes border the site which increases the total acreage of the wetlands at the site to 266 acres.

The site is divided into four operable units (OUs). The 1st operable unit is the Boston & Maine (B&M) Wastewater Lagoons, OU-2 is the Shaffer Landfill, and OU-3 is the remainder of the site. OU-3 includes an active industrial complex (the Iron Horse Industrial Park), a rail yard, numerous manufacturing operations, open storage facilities, landfills, and lagoons. OU-4 is to address residual groundwater, surface water, and sediment contamination following the source control measures that will be implemented for OU-3.

Previous investigational activities, including a baseline human health risk assessment, were completed for the OU-3 in 1997. A Feasibility Study (FS) was completed for OU-3 in 2004. Groundwater, surface water, sediments, and soil contamination were studied in the RI/FS for OU-3. The on-site areas of concern for OU-3 included the B&M Railroad Landfill, the Reclamation Services, Inc. (RSI) Landfill, the B&M Locomotive Shop Disposal Areas (A and B), the Old B&M Oil/Sludge Recycling Area, the Contaminated Soils Area, the Asbestos Landfill, the Asbestos Lagoons, and the Site-Wide Surface Water and Sediment Contamination. Groundwater in both the overburden and bedrock aquifers generally enters the site from the southwest and flows to the northeast. Similarly, surface water flows onto the site from the south and flows to the northeast, where it converges with B&M Pond and associated wetlands. Based on seepage meter, staff gauge, and mini-piezometer results summarized in the RI/FS, the potential for groundwater to discharge to surface water was evident throughout most of the site.

The previous investigations described in the OU-3 RI/FS established that the concentrations of some

groundwater contaminants exceed applicable or relevant and appropriate requirements (ARARs) or contribute to risk in excess of regulatory guidelines. Additional groundwater studies conducted as part of the OU-3 RI/FS included groundwater modeling, which utilized site-specific information such as boring logs, slug tests, water levels from monitoring wells and staff gauges, and stream seepage tests to simulate groundwater migration and estimate relative times to achieve remedial action objectives (RAOs) for groundwater cleanup under the various potential remedies (including source control). The modeling indicated that, in most cases, the time to reach RAOs was far greater than the EPA default period of 30 years. As a result, EPA decided to address potential groundwater cleanup by initially performing source control measures, then monitoring groundwater and evaluating trends in contaminant concentrations that result from those actions. OU-4 is to address residual groundwater, surface water, and sediment contamination following the source control measures.

Surface water and sediment supplemental characterization was initiated in 2004 and is ongoing. As part of this effort for OU-4, M&E was charged with conducting additional groundwater investigative activities and preparing a Data Evaluation Report to support the selection of a groundwater remedy for the site. The investigational activities conducted as part of this effort included supplemental groundwater and soil characterization to: (1) determine the current groundwater contaminant distribution by sampling 45 existing on-site monitoring wells and comparing the current distribution to that noted during groundwater sampling conducted in 1995; (2) confirm the flow characteristics of the aquifers determined as part of the 1997 RI for OU-3 by the collection of current groundwater and surface water elevation data; (3) fill data gaps for groundwater contaminant distribution, flow characteristics, and soil characteristics by installing and sampling 15 new monitoring wells; and (4) confirm the presence or absence of free-phase product and 1,4-dioxane in site groundwater. Non-aqueous phase liquid (NAPL) has been historically noted at the site, and the historical presence of 1,1,1-trichloroethane (1,1,1-TCA) and trichloroethene (TCE) in groundwater suggested the possible presence of 1,4-dioxane in groundwater.

Reports prepared under the OU-4 work assignment will supplement the RI (M&E, 1997) and FS (M&E, 2004) for OU-3.

1.2 Site History

The site was first purchased by the B&M Railroad (now known as B&M Corporation) in 1911. Since 1911, a variety of industrial disposal practices have resulted in the creation of numerous lagoons, landfills, and open storage areas. The B&M Railroad began operations at the site in 1913, including the operation of an oil and sludge recycling area beginning sometime prior to 1938. The B&M Railroad operated the site's sewage collection system beginning in 1924. The system includes subsurface sewer lines, a dismantled pump house, two unlined filter lagoons, and one overflow lagoon (these wastewater lagoons are OU-1). In addition to septic wastes, the lagoons also received industrial/hazardous wastes such as solvents, waste oils, and other chemicals from various floor and yard drains found throughout the industrial park. Sludge from the bottom of these lagoons was periodically dredged during the 60 years of operation and deposited in piles adjacent to the lagoons.

In 1944, the B&M Railroad sold land in the western portion of the site to Johns-Manville Products Corporation, which at that time began to manufacture structural insulating board that contained

asbestos. Three unlined lagoons were built to dispose of the resulting asbestos sludge waste. The B&M Railroad also leased land in the eastern portion of the site to Johns-Manville to be used as a landfill for asbestos sludge and other asbestos mill wastes generated by their manufacturing operations. EPA capped this landfill in 1984.

In 1961, the Johns-Manville Products Corporation sold the western portion of its land to the General Latex and Chemical Corporation, which manufactured acrylic and vinyl acetate polymers and copolymers used in fabrics, paper, and insulation. The liquid filtrate from the latex and polymerization wastes was discharged to the ground through sand filters. This practice was discontinued in May 1982, when General Latex was connected to the Billerica sewer system.

In 1966, the B&M Corporation sold 106 acres of land north of the Middlesex Canal and east of Pond Street to Phillip Shaffer. This land later became the Shaffer Landfill and is currently OU-2 of the site. This landfill received commercial and residential waste materials from private clients, wastewater treatment sludge from the town of Billerica, and domestic waste from Billerica residents. The landfill stopped receiving waste in April 1986. The Potentially Responsible Parties (PRPs) completed construction of the remedy (protective cap) for the landfill in 2003.

According to 1969 aerial photographs, the B&M Corporation was using a parcel of land located east of the railyard on the south side of the Middlesex Canal as a borrow pit for sand and gravel. This area was leased by B&M Corporation to RSI for use as a landfill to dispose of municipal and light industrial waste. In 1976, the B&M Corporation sold approximately 150 acres of primarily developed land to the Massachusetts Bay Transportation Authority (MBTA), which has since used the land to operate passenger rail service. The B&M Corporation now leases much of this land from the MBTA.

M&E finalized the RI for OU-3 in 1997. RI sampling data collected between June 1993 to August 1995 for groundwater, surface soil, subsurface soil, surface water, and sediment from nine potential source areas within the site (the B&M Railroad Landfill, B&M Locomotive Shop Disposal Areas, the RSI Landfill, the Old B&M Oil/Sludge Recycling Area, the Contaminated Soils Area, the Asbestos Landfill, the Asbestos Lagoons, and Site-Wide Surface Water and Sediment Contamination) indicates the presence of contaminants. The following sections taken from the OU-3 RI report (M&E, 1997) briefly describe contamination previously detected at the areas of concern for OU-3, including groundwater, and the results of the Baseline Human Health Risk Assessment conducted by M&E in 1997. In addition, a summary of the current site status is provided.

B&M Railroad Landfill. The B&M Railroad Landfill is approximately 14 acres in size and is located in a wetland area, north of the Middlesex Canal and east of the rail yard. The wetland was filled in by the B&M Railroad and was used for disposal of various kinds of debris. Heavy metal concentrations in surface and subsurface soils were higher than background soils. For soils, the southeastern half of the landfill was more contaminated with both organic compounds and metals. High concentrations (up to 18 mg/kg) of polychlorinated biphenyl (PCBs) compounds in subsurface soils suggest that PCB material, possibly oils, was disposed of in the landfill. Detections of aromatic volatile organic compounds (VOCs) (e.g., toluene, ethylbenzene, and xylenes), polycyclic aromatic hydrocarbons (PAHs), and petroleum hydrocarbons in the landfill are indicative of petroleum-related products that probably include coal tar and creosote waste. In groundwater, wells located in the landfill exhibited the

highest concentrations of contaminants when compared to wells outside of the landfill, especially organic compounds. Although no NAPLs were found, oily sands were observed at several depths, and in conjunction with the types of organic compounds detected, suggests evidence of NAPL. Degradation of TCE is evidenced by the presence of its potential byproducts, including dichloroethene (DCE).

Due to adsorption and other soil processes, the organic contaminants prevalent in soils (PCBs, PAHs, and pesticides) are not expected to migrate appreciably in the unsaturated zone, and the mobility of metals will be limited. A migration pathway for VOCs in the unsaturated zone may be via vapor phase, since VOCs were detected more often in soils above the water table than with depth below it.

With the exception of VOCs, most contaminants found in the saturated zone (pesticides, PCBs, PAHs, phthalates, and heavy metals) will not migrate significantly in the dissolved phase as evidenced by the groundwater quality in wells across from B&M Pond. The presence of PCBs and pesticides below the limits of the waste indicate that residual or pooled dense non-aqueous phase liquid (DNAPL) may be present, although none was observed. Groundwater levels and analytical data indicate that groundwater is migrating vertically. Contaminants in the dissolved phase may migrate from the landfill to the B&M Pond to the east and the Middlesex Canal to the south as evidenced by downgradient contamination. Measured vertical gradients indicate that groundwater from this area discharges to the Middlesex Canal and B&M Pond.

RSI Landfill. The 6-acre RSI Landfill, located east of the B&M rail yard near the Johns-Manville Asbestos Landfill, is bounded on the south by an unnamed brook and on the east by a wetland, which is drained by the Middlesex Canal. Waste and fill present in the west-central portion of the landfill include organic compounds (e.g., pesticides, PCBs, and phthalates) and heavy metals detected in soils. Aromatic VOCs, pesticides, and PCBs were detected in groundwater at low concentrations. The detection of chlorinated VOCs in upgradient, as well as downgradient and vicinity wells, indicates that upgradient sources may be affecting groundwater quality. The presence of elevated vinyl chloride and dichlorinated VOCs directly downgradient of landfilled wastes and near the top of the water table (groundwater screening locations) are indicative of the degradation of wastes. It appears that the aromatic VOCs found in a groundwater cluster near the Johns-Manville Asbestos Landfill are not related to the RSI Landfill, since this well cluster is most likely hydrogeologically affected by the Asbestos Landfill.

Borings indicate that wastes were deposited above and below the water table. The absence of a low-permeability cover allows for contaminant transport from the unsaturated to the saturated zone. Similar to the B&M Railroad Landfill, relatively elevated concentrations (when compared to background) of PCBs, PAHs, and phthalates are found in the unsaturated zone. These compounds may be highly attenuated through adsorption in percolating water. Although these compounds may also migrate vertically in DNAPL form, no DNAPL was observed. Most metals are fairly immobile due to adsorption and low solubility; however, leaching is possible. Chlorinated VOCs (DCE and vinyl chloride) detected in groundwater screening samples indicate the partitioning of these compounds to the vapor phase. Therefore, vapor phase movement may be a prominent transport mechanism at the water table.

Most organic compounds, with the exception of VOCs, are not likely to migrate significantly in the dissolved phase. Pesticides, PAHs, phthalates, and PCBs adsorb to organic matter in soils. However, due to the presence of more sandy soils, contaminant transport is of greater concern. Based on the direction of groundwater flow, contaminants in the dissolved phase will likely migrate toward the Middlesex Canal to the northeast. Although vertical gradients are low, the presence of pesticides and PCBs in the deep overburden and bedrock groundwater indicates the potential for localized DNAPL pools; however, this was not confirmed during the field activities. The existence of shallow bedrock facilitates contaminant transport from the overburden to bedrock. Hydraulic conductivities suggest that bedrock is more highly fractured in this area of the site. Horizontal hydraulic gradients vary only slightly with lithologies, and the vertical gradients are minimal. In the vicinity of this landfill, there is evidence that groundwater may be discharging to the unnamed brook at some locations, while in at least one location, the brook appeared to be losing water to groundwater.

B&M Locomotive Shop Disposal Areas. The B&M Locomotive Shop Disposal Areas consist of two disposal areas (A and B) separated by a manmade channel that flows into an unnamed brook (Unnamed Brook). Heavy metals and organic compounds including pesticides, PAHs, and petroleum hydrocarbons were detected in surface and subsurface soils in both areas, where waste or fill material was found. A few organic compounds (including one VOC, a few pesticides, and one PCB Aroclor) and heavy metals were detected in groundwater in the downgradient and vicinity wells. The detection of organic compounds and some heavy metals in the upgradient cluster indicate that other sources may be present in the vicinity. Mercury and copper were the only detected metals that were not found in the upgradient wells.

The borings indicate that wastes exist above and below the water table. PAHs were found in the highest concentration, especially in subsurface soils, with lower concentrations of pesticides, PCBs, VOCs, and petroleum hydrocarbons. The absence of a low-permeability cover allows for contaminant transport from the unsaturated to the saturated zone. However, pesticides, PCBs, and PAHs in percolating water may be highly attenuated through adsorption to organic matter in the soils.

Aromatic VOCs, PAHs, and petroleum hydrocarbons were notably absent in groundwater, although they were prevalent in subsurface soils. The absence of PAHs may be attributed to adsorption to soils. The absence of aromatic VOCs and petroleum hydrocarbons may be due to the placement of well screens below the water table. The potential for biodegradation of chlorinated compounds is evidenced by the existence of breakdown products of DCE and vinyl chloride near the water table. Based on the direction of groundwater flow, contaminants in the dissolved phase from both areas will migrate toward the northeast with groundwater discharge to the unnamed brook. Although vertical hydraulic gradients tend to be downward, there is no evidence that vertical migration of contaminants has occurred at this point.

Only pesticides were detected in surface water in the man-made canal. In contrast, PAHs, pesticides, phthalates, PCBs, and petroleum hydrocarbons were measured in sediments in the canal indicating that adsorption to sediments is occurring. Contaminants in sediments were similar to those measured in surface soils; therefore, overland flow runoff may be contributing to contaminant transport from these disposal areas.

Groundwater flow appears to be towards the north-northeast in both areas. Vertical gradients indicate that the shallow overburden and bedrock are recharging the deep overburden, particularly in Area A, suggesting a preferential flow path. There is potential for groundwater discharge to surface water from both overburden and bedrock. Low stream conductivities may limit discharge.

Old B&M Oil/Sludge Recycling Area. The 6-acre Old B&M Oil/Sludge Recycling Area was established sometime prior to 1938 for the purpose of recycling oil. Two areas of oil/sludge, located in the northern and southern edges of the area, were found to extend beyond the Penn Culvert fence perimeter. The predominant types of organic compounds found were consistent with the oil/sludge reportedly disposed of in these areas. Contaminants detected in surface and subsurface soils consist primarily of PAHs, long-chain alkanes, and petroleum hydrocarbons. Numerous pesticides and PCBs were detected in the northern area, and heavy metals were measured in both areas. Although aromatic VOCs, PAHs, and petroleum hydrocarbons were generally not present in groundwater, chlorinated VOCs and heavy metals were detected. Heavy metals, which were detected primarily in shallow overburden groundwater, include arsenic, chromium, cobalt, lead, mercury, nickel, and zinc. Petroleum hydrocarbons were measured in one well, and several inches of floating product was observed in one piezometer in the southern oil/sludge area.

Subsurface soils exhibited the highest concentration of contaminants including aromatic VOCs, PAHs, petroleum hydrocarbons, and elevated metal concentrations. Although some of the area is covered with asphalt, the absence of a low-permeability cover may facilitate contaminant transport to the saturated zone (especially VOCs). However, PAHs, pesticides, and metals will tend to adsorb to the organic matter (peat) prevalent in soils in this area. Based on observations of free product in the area and the occurrence of PAHs and petroleum hydrocarbons, light non-aqueous phase liquid (LNAPL) in residual or mobile form may be widespread. It was not detected in wells most likely because they are screened as much as 1 foot or more below the water table. The presence of high concentrations of PAHs may also indicate the presence of DNAPL.

Aromatic VOCs, PAHs, and petroleum hydrocarbons were notably absent in groundwater, although they were prevalent in subsurface soils. The absence of PAHs may be attributed to adsorption to soils. The absence of aromatic VOCs and petroleum hydrocarbons may be due to the placement of well screens below the water table. The potential for biodegradation of chlorinated VOCs is evidenced by the existence of the breakdown products DCE and vinyl chloride at or near the water table.

Groundwater flow directions are to the northeast and east in the shallow overburden, to the east in the deep overburden, and to the northeast in the bedrock. Vertical hydraulic gradients tend to be downward from shallow overburden and upward from bedrock to deep overburden as evidenced by the presence of chlorinated VOCs in the deep overburden. Vertical gradients indicate that deep overburden may be a preferential flow path. The influence of surface water bodies on groundwater flow is minimal in the area.

Contaminated Soils Area. The Contaminated Soils Area is located in the center of the site and is approximately 50 acres in size. Contaminated soil was first identified as a problem in this area after a random soil boring program conducted across the site indicated elevated levels of lead (310 to 76,600 ppm) at nine out of forty locations. Organic compounds, including PAHs, petroleum hydrocarbons,

and pesticides, were measured in surface soils in localized areas. Lead and manganese were the heavy metals that were detected most often and in the highest concentrations. No additional analytical data were collected for this area as part of the RI.

Asbestos Landfill. The site has historically been identified with asbestos contamination due to asbestos landfilling operations conducted by Johns-Manville over a 32-year period. Although EPA capped the Asbestos Landfill in 1984, asbestos materials have been found outside the limits of the cap. However, the results of the off-site soil sampling indicated that, with one exception, there were no detectable levels of asbestos in residential areas. No additional analytical data were collected for this area as part of the RI.

Asbestos Lagoons. In addition to the Asbestos Landfill, there are three unlined asbestos lagoons on Johns-Manville property. Surface and subsurface soil samples were not collected during the RI from this area of concern. Groundwater contaminants included VOCs (primarily aromatics and chlorinated VOCs), PAHs, PCBs, and pesticides. Several of the chlorinated VOCs (tetrachloroethene, 1,1,1-TCA and dichloroethane) and heavy metals (arsenic, cobalt, lead, and zinc) were detected in all three flow zones. The types of contaminants found were similar to those detected in the 1980s during investigations related to the Johns-Manville stormwater drainage system. Detected heavy metals and organic compounds were primarily found in downgradient wells near the lagoons.

The limits of waste relative to the water table were not defined, since drilling was not conducted within the lagoons. The predominant types of compounds found in groundwater include pesticides and PAHs, which are likely to strongly adsorb to soils. Concentrations of several metals were elevated, with calcium levels most elevated. This was to be expected due to the plasterboard materials that were disposed here.

Several metals, a few chlorinated VOCs, and PAHs were most prevalent in the deep overburden and bedrock groundwater. PCBs were detected in a shallow well adjacent to catch basins. Past wastewater discharges, stormwater drain leakages, and mounding caused by rainfall likely induced vertical migration of contaminants beneath the area. Low concentrations of pesticides in groundwater may be the result of percolating rainwater. Chlorinated VOCs are likely the most mobile contaminants.

Groundwater in the vicinity of the Asbestos Lagoons is divided with a component of flow to the northwest toward the Middlesex Canal and some flow to the northeast. Groundwater contours indicated the potential for mounding. Vertical gradients tend to be downward from shallow to deep overburden and upward from bedrock to shallow overburden at the downgradient wells. The potential for discharge to surface water from groundwater is present; however, some data indicate that such discharge points may not occur.

Site-Wide Surface Water and Sediment Contamination. Two rounds of surface water and sediment sampling conducted in June and September of 1993 revealed aromatic and chlorinated VOCs at multiple surface water locations. Generally, contaminants including PAHs, pesticides, and metals were detected more often and in higher concentrations in June compared to September, indicating variability over time. In the vicinity of Shaffer Landfill, specific conductance and heavy metals concentrations were elevated. Similar to surface water, the frequency of detection and the

concentrations of contaminants in sediment, including aromatic and chlorinated VOCs, PAHs, pesticides, and PCBs, were generally greater in June than September. Heavy metals were found at similar concentrations during both sampling rounds.

In October and November of 2004, supplemental sediment characterization was conducted for Content Brook, B&M Pond, West Middlesex canal, Richardson Pond, Unnamed Brook, and a reference area (Round Pond). The analytical results indicated instances where concentrations exceeded ecological risk-based screening criteria for 4,4'-DDD, PCBs, PAHs, and metals. The exceedances were most numerous for samples collected from B&M Pond and the Unnamed Brook. Fewer exceedances occurred for the Content Brook sediment sample, although the screening criteria were exceeded for ten compounds/analytes. There were no exceedances for the West Middlesex Canal sample. The sample collected within the reference area, Round Pond, had two exceedances (4,4'-DDD and Aroclor-1260).

Supplemental surface water data was also collected in 2004 from Content Brook, the West Middlesex Canal, the Unnamed Brook, Richardson Pond, and the reference area, Round Pond. There were exceedances of risk-based screening criteria for total and dissolved barium and manganese within all samples collected, including the samples collected from Round Pond. In addition, total arsenic concentrations exceeded the screening criteria in samples collected from Richardson Pond. The total arsenic concentration was estimated at a value equivalent to the screening criteria in one sample collected from Content Brook. Total aluminum also exceeded the screening criteria in the Content Brook sample.

Baseline Human Health Risk Assessment Summary. Potential human health risks were estimated by M&E in 1997 for exposures to surface soil at the B&M Railroad Landfill, the RSI Landfill, the B&M Locomotive Shop Disposal Area, the Old B&M Oil/Sludge Recycling Area and the Contaminated Soils Area. Risks were estimated for a trespasser receptor and for a worker receptor. Risks to these receptors were within or below EPA's risk management criteria for both carcinogenic risks and non-carcinogenic hazards and for both central tendency and reasonable maximum exposure (RME) evaluations. Exposure to lead in the B&M Locomotive Shop Disposal Area and the Contaminated Soils Area, particularly the metals hot spot, could result in excessive blood lead levels in women of childbearing age.

Potential human health risks and hazards were estimated for exposures to sediment and surface water for a trespasser receptor. Sediment and surface water samples were both grouped into three areas: the West Middlesex Canal Area, the Central Wetlands Area, and the East Middlesex Canal and Wetlands Area. The trespasser receptor was expected to be the most highly exposed receptor. Risks were within or below EPA's risk management criteria for both carcinogenic risks and non-carcinogenic hazards, for both sediment and surface water and for both central tendency and RME evaluations for all three areas.

Potential human health risks and hazards were estimated for future exposures to groundwater as a source of drinking water in each of three flow zones at the following five areas of concern: the B&M Railroad Landfill, the RSI Landfill, the B&M Locomotive Shop Disposal Area, the Old B&M Oil/Sludge Recycling Area, and the Asbestos Lagoons. Considering a RME receptor, either carcinogenic risks or noncarcinogenic hazards or both would exceed EPA's risk management criteria in nearly all flow zones at each area of concern. Arsenic and manganese were determined to be the

principal risk contributors in all areas evaluated. Additional risk contributors include benzene in the shallow overburden groundwater at the RSI Landfill, thallium in deep overburden groundwater at the RSI Landfill, and beryllium in deep overburden and bedrock groundwater at the Asbestos Lagoons.

Current Site Status. With respect to the status of each operable unit at the site, source control measures have been implemented for OU-1 (B&M Wastewater Lagoons; soil removal) and OU-2 (Shaffer Landfill; cap). The remedy has been selected for OU-3 (remainder of the site; various source control measures) and negotiations with the Potentially Responsible Parties (PRPs) for implementation are ongoing. Construction efforts associated with OU-1 and OU-2, completed in 2003, are the only remediation efforts associated with the site since the groundwater sampling conducted for the OU-3 RI. Another notable occurrence at the site since the 1995 groundwater sampling was the construction of a building and a paved parking lot above the Old B&M Oil/Sludge Recycling Area. OU-4 efforts to address residual contamination following source control measures were implemented in 2004.

1.3 Problem Definition/Present Study

Significant investigational work has been performed at the site to date and has identified the potential for human health risk and hazard in excess of EPA's risk management criteria associated with the presence of contaminants in groundwater. This supplemental groundwater investigation focuses on supporting the selection of a groundwater remedy by collecting environmental data to fill data gaps and determine the current nature and extent of groundwater contamination.

Specifically, the investigation is designed to answer the following questions:

- What are the groundwater characteristics of the site in terms of groundwater contours and flow?

Previous studies indicate that both the overburden and bedrock aquifers generally enter the site from the southwest and flow to the northeast. This investigation confirms the flow direction of the aquifers and fills data gaps through installation of new wells in areas of limited information in order to accurately contour site groundwater.

- What is the current nature and extent of groundwater contamination at the site?

Previous studies indicate that the concentrations of some groundwater contaminants exceed ARARs or contribute to risk/hazard in excess of regulatory guidelines. Groundwater modeling indicated that, in most cases, the time to reach RAOs was far greater than the EPA default period of 30 years. This investigation provides groundwater contaminant data to evaluate the current nature and extent of groundwater contamination at the site.

- Is 1,4-dioxane present as a contaminant in groundwater?

Previous studies indicate the presence of chlorinated solvent contamination in groundwater and other media. However, 1,4-dioxane analysis was not performed during previous sampling and analysis at the site. Since 1,4-dioxane may be a co-contaminant associated with chlorinated solvents, it may be present

at the site. The analytical results of this investigation are used to evaluate the nature and extent of 1,4-dioxane contamination at the site.

- Are groundwater data of sufficient quality to perform a risk assessment?

Previous studies indicate that the concentrations of some groundwater contaminants contribute to risk/hazard in excess of regulatory guidelines. Though a supplemental risk assessment is not currently planned, this investigation provides groundwater data of sufficient quality to support a possible future human health risk assessment.

- What is the nature and extent of NAPL at the site?

Previous studies have reported the presence of several inches of floating product in one piezometer in the southern portion of the Old B&M Oil/Sludge Recycling Area. LNAPL was also observed in this area by MassDEP during construction oversight in March 2003. In addition, during the November 2005 well inventory, LNAPL was noted in a piezometer at the B&M Railroad Landfill. Significantly elevated levels of PAHs in bedrock groundwater are suggestive of the possible presence of DNAPL in some site areas. This investigation provides additional data to assist in determining the nature and extent of NAPL at the site.

SECTION 2.0
FIELD OPERATIONS

This section summarizes the field activities conducted by M&E at the site between October 2005 and May 2006. The design details of the field program are described in the *Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) for Operable Unit 4 Remedial Investigation/Feasibility Study Addendum Hydrogeological Investigation - Revision 00, Iron Horse Park Superfund Site, North Billerica, Massachusetts* (SAP) (M&E, 2005).

2.1 Field Reconnaissance

In late October and early November 2005, a field reconnaissance was performed to locate historical monitoring wells and piezometers and evaluate their condition. Evaluation parameters included security, damage, and the potential need for redevelopment. Summary information from this field reconnaissance is presented in Table A-1 of Appendix A. Reconnaissance photographs are provided in Appendix E.

Using this information, along with historical groundwater monitoring results, a sampling network of 45 existing monitoring wells was selected to provide a current "snapshot" of groundwater contaminant concentrations across the site. In addition, 15 new monitoring wells were located to provide further site coverage in areas with potential data gaps.

The field reconnaissance data for the existing wells was reviewed to determine which of the selected wells required repair and/or redevelopment. Five of the 45 wells required repair: MW-202S, MW-202D, MW202B, OW-07, and OW-08. Wells requiring redevelopment were determined through comparison of current well depths versus reported installation well depths. Evidence of excessive sedimentation (greater than 1 foot) resulted in selection for redevelopment. The following wells were selected for redevelopment: OW-10, OW-20, OW-25, OW-26, MW-202B, MW-202D, MW-202S, MW-203D, MW-208D, and MW-213B. Well repair and development of existing wells was conducted on December 28 and 29, 2005. In general, new monitoring wells were developed within a few days of installation. Well development is discussed further in Section 2.2.3.

2.2 Monitoring Well Installation

Fifteen monitoring wells were installed at selected areas of the site from January 16 through February 2, 2006. The following sections discuss the areas at which monitoring wells were installed, as well as the rationale behind the locations chosen, and monitoring well installation procedures, including the collection of soil samples. Monitoring well construction details are provided in Table 2-1.

2.2.1 Monitoring Well Locations. Several of the new monitoring wells were located to serve as replacements for destroyed wells, while others were installed to further define the nature and extent of contamination throughout the site. The rationale for the placement of new monitoring wells is described below and also summarized within Table 2-2.

A total of five monitoring wells were installed within the Old B&M Oil/Sludge Recycling Area. Well cluster MW-301S/D/B was installed on the upgradient side of the Old B&M Oil/Sludge Recycling Area to replace the destroyed MW-201 well cluster. Shallow well MW-303S was installed to replace a destroyed piezometer, P-12, within the Old B&M Oil/Sludge Recycling Area at which LNAPL had previously been observed, and was screened at the water table such that potential LNAPL within the area would be detected. Likewise, MW-302S was screened at the water table, and was located downgradient from the Old B&M Oil/Sludge Recycling Area to evaluate the potential migration of LNAPL from the Old B&M Oil/Sludge Recycling Area.

One triplet of wells, the MW-304 cluster, was installed at the northeastern portion of the Contaminated Soils Area to fill data gaps remaining after the OU-3 RI.

The remaining seven of the fifteen new monitoring wells were installed to fill data gaps in and around the Asbestos Landfill. Previous detections of 1,1,1-TCA within upgradient well MW-207B as well as the need for wells upgradient of the Asbestos Landfill prompted the installation of the MW-305 pair (MW-305S and D) on the western edge of the western lobe of the Asbestos Landfill. MW-306S was also installed to serve as an upgradient well for the Asbestos Landfill, however, it was installed southeast of the MW-305 pair, in an area which previously encompassed OU-1 of the site. The MW-307 cluster (MW-307S/D/B) was installed nearby a wetland area on the southeastern edge of the Asbestos Landfill to provide downgradient concentrations. Similarly, MW-308B was installed in the bedrock to complete a cluster with repaired wells OW-07 and OW-08 to provide coverage of contaminants that may be migrating from the Asbestos Landfill.

2.2.2 Installation Procedures. As stated above, fifteen monitoring wells were installed across the site. Seven monitoring wells were completed in the shallow overburden, screened across the water table (approximately 1 to 14 feet below ground surface); four monitoring wells were completed in the deep overburden, just above bedrock (15 to 48 feet below ground surface), excepting MW-305D, which was installed partly into the weathered bedrock surface; and four monitoring wells were completed up to 20 to 30 feet into bedrock (29 to 82 feet below ground surface). Well construction details are summarized in Table 2-1. The geologic boring logs and monitoring well as-built diagrams are presented in Appendix C.

Overburden Wells. A total of eleven overburden wells were installed, including seven shallow overburden wells and four deep overburden wells. Two of the shallow overburden wells (MW-302S and MW-303S) were advanced using hollow stem auger (HSA) techniques, so as to avoid adding drilling water to the native groundwater within the Oil/Sludge Recycling Area, at which LNAPL had previously been detected. Monitoring well MW-306S was also attempted using HSA, but had to be installed using drive and wash (DW) techniques because of "running sands". The remaining shallow and deep overburden wells (MW-301S/D, MW-304S/D, MW-305S/D, MW-307S/D) were all advanced through the overburden using DW techniques. As part of the DW method, the boreholes were continuously 'open hole' sampled using 3-inch then 2-inch split spoons for as long as the hole would stay open (to approximate 12 or 14 foot depths) before casing and wash water was used, to ensure that upper soil samples were collected before water was added to the borehole. DW was found to be more effective at achieving the desired sampling and target depths than using HSA, and also added an additional level of protection (by wetting the soils) at boring locations in the Asbestos

Landfill. Further discussion regarding precautions taken during well installation within the Asbestos Landfill is provided below.

Continuous soil samples were collected using 3-inch and 2-inch outer diameter (OD), 2-foot long, split spoons to a depth of 1 to 10 feet below the water table and then every 5 feet to the end of the boring. The soil samples were used for screening purposes and to characterize the stratigraphy. Screening for VOCs was conducted using a photoionization detector (PID) calibrated with isobutylene. The split spoons were decontaminated between each sampling interval according to M&E standard operating procedures (SOPs). Continuous samples were collected only from the deepest boring at locations where multiple boring locations were drilled. However, split spoon samples were taken at the target depth in all borings to confirm the lithology at the screened interval. Samples at the target depth were submitted for total organic carbon (TOC) and grain size analysis by EPA's OEME laboratory to supplement historical data used in creating a groundwater model for the site. It should be noted that for MW-307D, a grain size sample was not submitted for analysis due to insufficient soil recovery. Chain-of-custody documentation is included in Appendix B.

The monitoring wells were constructed using 10 feet of 2-inch diameter threaded schedule 40 polyvinyl chloride (PVC) slotted well screen (0.010-inch slot size) and solid riser pipe. Fifteen feet of screen was used for MW-301D because of dense till conditions and anticipated low recovery rate. PVC connections were completed without the use of adhesives, and a cap was fixed to the bottom of the well. After inserting the well pipe into the borehole, the well was built by filling the annulus between the PVC well screen and the borehole with clean silica (#1) filter sand to approximately two feet above the top of the screened interval (less for shallow overburden wells MW-302S and MW-303S). A minimum of 6 inches of bentonite was placed on top of the sand and then hydrated with town water, if placed above the water table. The remainder of the bore hole annulus was backfilled with cuttings to within 1.5 to 2 feet of ground surface. At wells drilled within the Asbestos Landfill area, only cuttings below the fill beneath the water table were used as backfill. Each monitoring well was completed with a locking expansion cap and a 4 to 5-foot long steel surface casing set approximately 2.5 feet into the ground. As-built drawings for the monitoring wells are provided in Appendix C.

Bedrock Wells. Four of the fifteen borings were drilled into bedrock. These borings were completed by advancing a 5-inch steel casing using DW techniques to the top of bedrock. To confirm bedrock refusal, a split spoon sample was attempted at the refusal depth. A 4 7/8-inch diameter roller bit was then used to ream out a socket to a depth of 1 to 2 feet, depending on the competency of the bedrock as determined by roller bit down pressure (ease of drilling). Permanent 4-inch steel casing was then telescoped down into the socket. Grout was not used to set the casing, in order to avoid groundwater pH modifications, and instead a 300-pound hammer was used to seat the casing. Rock coring advanced in 5-foot runs using an HQ (3.9-inch OD diameter) core barrel to a depth of 20 to 30 feet into bedrock. The recovered rock cores were then placed in a wooden box and logged by an M&E Geologist. The rock descriptions are included on the geologic logs presented in Appendix C. The screened interval was determined by the amount of water-bearing fractures found in the rock cores.

The bedrock wells were constructed of 2-inch threaded schedule 40 PVC slotted well screen (0.010-inch slot size) and solid riser pipe. PVC connections were completed without the use of adhesives. The bottom of the wells were capped. The wells were constructed with 20 feet of well screen in the

open rock hole, and with 2-inch threaded schedule 40 PVC solid riser pipe from the screen to the surface. The annulus between the PVC well screen and borehole wall was then filled with clean silica (#1) filter sand to approximately two feet above the top of the screened interval. Bentonite was then added from the top of the sand pack up to a minimum of 2 feet into the 4" permanent steel casing and hydrated with town water. The extended bentonite seal, crossing the bedrock borehole into the permanent casing, replaced the grout seal that was not used when the casing was set into bedrock.

Each monitoring well was completed with a locking expansion cap, and a 5-foot long steel protective cover, set approximately 2.5 feet into the ground. An as-built drawing for each bedrock well is included in Appendix C. Prior to well construction, boreholes were flushed with clean (town) water to clear the standing water column of silt, sand, and rock chips.

Asbestos Air Monitoring During Monitoring Well Installation. Air sampling for asbestos was performed during the installation of MW-305S and MW-305D located on the western lobe of the Asbestos Landfill due to the likely presence of asbestos in soils and its potential to become airborne during drilling activities. These wells were the first two of six wells to be drilled on or nearby the Asbestos Landfill during this event.

Hub Testing Laboratory, Inc., as a subcontractor to M&E, performed and analyzed the asbestos air samples. Two samples were collected at both MW-305S and MW-305D during drilling activities, one within 5 feet of each drilling location and the other located 40 to 50 feet downwind of each location. Installation of remaining wells on and around the Asbestos Landfill, including the MW-307 cluster and MW-308B, was postponed until the results of the asbestos in air analysis confirmed very minimal disturbance of asbestos fibers resulting from drilling activities via the drive and wash method. Further details of the asbestos air sampling and analysis are provided in Appendix F.

2.2.3 Monitoring Well Development. New monitoring wells were generally developed within 24 to 48 hours after completion. Well development was completed using a submersible 2 to 4 gallon per minute pump with purge and surge techniques. Starting just above the bottom of the well the pump, which acted as the surge block, was surged up and down over a 2-foot interval until the discharge ran clear. This process was then continued until a static water level was reached. The pump was then lowered to the bottom of the well and the process repeated, as necessary, until the entire water column ran clear.

A minimum of three well volumes or a minimum of 10% over the amount of fluid introduced during drilling (whichever was greater) was removed from each well. The wells were developed until the purge water was visibly clear and the field parameters, including pH, conductivity, temperature, and turbidity had stabilized. In addition, at most locations development continued until the turbidity of the purge water was less than 5 Nephlometric Turbidity Units (NTU) while surging.

A record of well development is included in the copies of the field log books included in Appendix A, which contains pertinent development information from each monitoring well, including initial, intermediate, and final measurements of field parameters, visual characteristics, and groundwater volumes removed. All down-hole equipment was decontaminated between locations. Development fluids were all discharged a minimum of 20 feet downgradient of the well being developed, except for

wells located in the Old B&M Oil/Sludge Recycling Area, from which purge water was containerized in 55-gallon drums for off-site disposal. The local ground surface at the Old B&M Oil/Sludge Recycling Area is no longer pervious (the area has been paved by the current owner) and the sampling was performed during cold weather. Discharge of purge water to surrounding pavement would have created a potential ice slippage hazard, especially during well development when approximately 100 gallons of purge water was generated. Furthermore, discharge to a non-localized area of the site would have potentially transported contaminants out of the area.

2.3 Groundwater Sampling and Analysis

Forty (40) monitoring wells were sampled at the site during the first round of sampling, which extended from December 13 to December 21, 2005, and the remaining twenty (20) monitoring wells were sampled from February 20 to February 23, 2006. All wells were sampled using non-dedicated bladder pumps via EPA Region I low flow purging and sampling guidelines (U.S. EPA, 1996a), with the exception of three barcad-type wells. Barcad-type wells are constructed differently than typical groundwater monitoring wells and do not allow for the insertion of a submersible pump for low-flow purging. Rather, barcad wells at this site operate by forcing compressed air into a small diameter (usually one-inch) PVC pipe, which in turn puts pressure on the groundwater surface within the PVC pipe, pushing groundwater that has accumulated within the PVC pipe down, such that it is forced up through the purge tubing. Standing water is evacuated from the well prior to sampling a barcad-type well. All monitoring wells, including barcad-type wells, were sampled in accordance with the approved SAP (M&E, 2005) which combines the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP).

All groundwater monitoring instrumentation for the collection of field parameters (i.e., combination temperature/ pH/conductivity/dissolved oxygen/oxidation-reduction potential meters and turbidimeters), as well as PIDs, were calibrated each morning prior to sampling activities in accordance with M&E SOPs (M&E, 2005). Groundwater sampling data and instrument calibration log sheets are included in Appendix A. Groundwater field parameter measurements are summarized in Table A-2 in Appendix A.

In general, sampling difficulties arose from purge water freezing within tubing and iron floc within purge water clogging pumps and elevating turbidity, specifically within shallow overburden wells. Turbidity levels, however, were typically reduced to approximately 5 NTU prior to sampling, with a few exceptions, including newly installed MW-306S for which the turbidity was estimated at 330 NTU at the time of the metals sample collection. More significant difficulties encountered and other notable observations at individual monitoring wells are discussed below.

The standard-size bladder pump (1.5-inch diameter) that was being used to sample all 2-inch PVC diameter wells at the site was not able to be lowered to the screened interval within MW-204S and MW-202B due to obstructions within each of the wells. Instead, these wells were sampled with micro-bladder pumps, which are approximately 3/4-inch diameter. Micro-bladder pumps operate on similar mechanics as the standard-size bladder pump, however, typically offer lesser flow rates.

Another field difficulty involved the formation of effervescing bubbles in the groundwater samples

collected from MW-213S. Effervescence may be the result of groundwater interacting with migrating landfill gas generated from the B&M Railroad Landfill or gases from the nearby wetlands. If so, the effervescence would be from the carbon dioxide (CO_2) forming "bubbles" within the groundwater samples. Carbon dioxide is a major constituent in landfill gas. The net impact on groundwater samples from effervescence is the "stripping out" of VOCs into the effervescing bubbles. This effect was addressed as part of the data validation efforts for the groundwater samples. Refer to Section 4.1 for more detailed information.

Groundwater purged from wells OW-09 and OW-10 had low pH values of 4.93 and 4.92, respectively, measured just prior to sampling.

Purge water extracted from all wells sampled was screened with a PID for organic vapors greater than 10 ppm and inspected for NAPL/sheens. Since no organic vapors were detected in purge water and no NAPL/sheens were observed, purge water was slowly discharged back to the ground surface at a minimum 50-foot distance downgradient from the well. Tubing was removed from the wells and disposed of.

Groundwater samples were collected for analysis of all or a combination of the following analytes: Routine Analytical Services (RAS) low concentration VOCs, RAS low concentration semivolatile organic compounds (SVOCs), RAS low concentration pesticide/PCBs, RAS low/medium concentration metals, and Delivery of Analytical Services (DAS) 1,4-dioxane in accordance with the SAP (M&E, 2005). All groundwater samples were preserved post-collection with the appropriate preservative for the analyses, with the exception of the aliquot for VOC analysis collected at MW-213S (and field duplicate MW-213S-CS) due to the intensified effervescence of the sample upon the addition of acid. For quality control purposes, additional sample volume was collected at monitoring wells MW-207B, MW-212D, MW-213S, and MW-304D for field duplicate analyses. At monitoring wells MW-203S, MW-208S, MW-212B, MW-303S, MW-305D, OW-20 and OW-50, additional sample volume was collected for Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses. Equipment blanks, trip blanks, and temperature blanks were prepared and submitted for analysis. Chain-of-custody documentation for each sample shipment is included in Appendix B.

2.4 LNAPL Sampling and Analysis

LNAPL was observed in PZ-115, a piezometer located on the B&M Railroad Landfill, during the well survey conducted during late October to early November 2005. An approximate LNAPL thickness of 0.1 to 0.5 feet was measured at that time. It must be noted that this amount should only be considered an estimate, since the actual thickness was difficult to discern due to the high viscosity of the LNAPL and its tendency to coat the measuring probe. When the piezometer was sampled with a bailer on February 21, 2006, however, a lesser amount of LNAPL was observed within the well, with only approximately 2 to 3 milliliters (ml) of product able to be recovered into a 40-ml vial for analysis.

MW-303S was included within the SAP (M&E, 2005) as a potential LNAPL sampling location, since it was located within the vicinity of destroyed piezometer P-12, which historically contained LNAPL. At the time of the February 2006 sampling event, however, no LNAPL was observed within MW-303S and therefore, LNAPL was not sampled from this well. Groundwater samples, however, were collected

from MW-303S.

The LNAPL sample collected at PZ-115 was submitted for Gas Chromatography (GC) Fingerprinting analysis through the DAS program.

2.5 Staff Gauge Installation

Ten surface water staff gauges were installed across the site to characterize surface water conditions and relations to overburden groundwater levels. The staff gauges, located as shown on Figure 2-1, were constructed by driving a green steel fence post into the sediments of the Middlesex Canal and various wetland areas around the site. The top of each fence post extended a minimum of 18 inches above the water surface. Three-foot long rulers were then attached to the fence posts to aid in taking surface water level measurements. Surface water elevations were calculated relative to the top of the fence post, which was the survey measuring point. Field data measurement conversions were later performed in the office and were recorded in the field logbook. Field checks of the conversions were conducted by an M&E Geologist during surveying oversight activities.

2.6 Water Level Measurements

On March 31, 2006, M&E measured groundwater levels at 101 new and existing monitoring wells, 30 piezometers, and 10 new staff gauges at the site. Groundwater level measurements were typically taken from the surveyed tops of PVC well risers and used to calculated groundwater elevations. In addition, well depths were verified and well vapors were screened for VOCs using a PID. The results of these measurements are presented in Section 3.3.

Water level indicator measurement tapes were calibrated before measurements were taken to verify consistent readings among different instruments. Readings for all water level indicators were within 0.01 foot of each other.

Due to the presence of LNAPL within PZ-115 at the B&M Railroad Landfill during the well and piezometer inventory, an oil/water interface probe was used to collect measurements from this piezometer. The oil/water interface probe indicated that LNAPL was not present in measurable quantities in this piezometer during the water level round.

At the time of the well inventory, piezometer P-2 was found to be broken off at grade, and therefore, was not included in the list of wells/piezometers for water level measurements. This piezometer, however, was repaired by M&E and a water level measurement was recorded on March 31, 2006. Piezometer P-3 was in good condition at the time of the well inventory, but was found destroyed, likely by a snowplow during the winter months, during the water level measurement round. Although piezometer P-3 was not repaired, and therefore no water level measurement was collected, the nature of the damage (broken off at grade) may allow for future repair.

2.7 Site Surveying

A survey of all site groundwater monitoring wells was conducted by Bryant Associates of Boston, MA from April 26 through May 9, 2006. An M&E representative met the Bryant Associates personnel onsite to assist in locating the groundwater monitoring wells.

Survey points at each monitoring well included the previously marked/notched location on the PVC (well pipe) and the previously marked/notched location on the steel casing (protective guard pipe, with the well casing cover removed). Notches were stamped into the steel casing at the survey point during a previous survey of site wells. For the MW-300 series wells, the five rehabilitated wells, and piezometer P-2, as well as for all the other wells, M&E added silver paint markings to the wells and piezometers during the water level round, so that the wells were consistently surveyed. The staff gauges were surveyed at the top of the green fence stake. The survey was conducted in accordance with the following standards to match the site basemap:

1. State Grid North and State Coordinate System, Origin Mass. Geodetic Disc 16-E and 16-C
2. Horizontal Controls - NAD 27 (North American Datum of 1927)
3. Vertical Controls - NGVD 29 (National Geodetic Vertical Datum of 1929)

Monitoring well survey documentation is provided in Appendix D.

SECTION 3.0
SITE CHARACTERISTICS

The site characteristics are described in terms of the geographic setting and site hydrogeologic conditions. Much of the geographic setting information provided in this section was originally presented in the OU-3 RI report (M&E, 1997). Other sections provide findings of the current investigation in relation to those presented in the OU-3 RI report.

3.1 Geographic Setting

The site is located in North Billerica, Massachusetts, which is approximately 8 miles south of the New Hampshire border. The site is approximately centered at a position described on the state coordinate system as North 577148, East 662935, or about 42° 35' 00" north latitude and 71° 16' 00" west longitude. The altitude of the site is approximately 115 feet (35 meters) above mean sea level. The site is located in eastern Massachusetts, on the western side of the Seaboard Lowland section of the New England physiographic province, a subdivision of the Appalachian Highlands. The Seaboard Lowlands are characterized by extensive glacial outwash and till deposits overlying a complex of igneous and metamorphic rocks (Castle, 1959).

The physiography of eastern Massachusetts is controlled mostly by its recent geologic history. The advance and retreat of glaciers across New England and eastern Massachusetts during the last 20,000 years has effected the most significant, recent regional physiographic change in the region. Glacial sediments were superposed on the bedrock during the Pleistocene (Wisconsin) glaciation. The resultant physiography of this region of glacial deposits can be characterized as small hills with elevations of approximately 100 to 200 feet NGVD (National Geodetic Vertical Datum 29) separated by small wetlands that are connected by meandering streams.

In addition to the surficial geology, the bedrock geology also has influenced the physiography of the region. The site lies within the Nashoba Terrane, a distinct and exotic lithologic block that is bounded by two northeast-trending faults. These faults are reflected in surficial features as evidenced by a long topographic lineament that traces the Bloody-Bluff fault, defined by discontinuous streams and valleys (Nelson, 1987).

Locally, the physiography of the Billerica area is characteristic of the region, which consists of small hills, wetlands and ponds, connected by small meandering streams. The site lies on the western edge of the Shawsheen River drainage basin and is approximately 1.5 miles from the northward flowing Shawsheen River.

The site has been altered by construction and development. Initial changes to the physiography of the site most likely resulted from the construction of the Middlesex Canal. Changes to the site topography may have also resulted from cut-and-fill techniques used to construct the industrial park buildings, parking areas, roads, railroad, and disposal areas. Further activities at the industrial park led to the filling of low-lying areas and wetlands during disposal activities.

The Iron Horse Industrial Park can be characterized as expansive, relatively unvegetated, and flat. The

industrial park is surrounded by upland areas on the south-southeast side, including several small forested hills near Pond Street, and low lying wetland areas on the western, northern, and northeastern side of the site. During field efforts associated with the OU-3 RI, 17% (79 acres) of the site was classified as wetlands (M&E, 1995).

The topographic relief of the site is approximately 50 feet, with the highest elevation of approximately 150 feet on the eastern side of the site and the lowest of approximately 100 feet on the northeast side near the B&M Pond. Other significant topographic features include several disposal areas which contain a mixture of vegetative cover (M&E, 1995).

3.2 Site Geologic Conditions

As noted in the OU-3 RI report (M&E, 1997), bedrock underlying the site is comprised of granite, schist, and diorite. Contoured bedrock surface elevations suggest the presence of a trough in the bedrock surface trending northeast and northwest across the site. Bedrock fractures were found trending north-northeast and east-west.

The overburden primarily consists of glacial drift deposits including basal and ablation till and glacial outwash deposits. Basal till was found primarily on the southwestern portion of the site, and ablation till was found primarily in the western and southern portions of the site overlying basal till. Glacial outwash deposits were encountered throughout the site. Peat deposits were encountered underlying fill materials near streams, ponds, and wetlands at the site (M&E, 1997).

This investigation was focused on providing a current "snapshot" of site conditions and included the installation of eleven overburden monitoring wells and four bedrock monitoring wells. As described in Section 2.0, the overburden was sampled continuously from the ground surface to the bedrock surface. The bedrock monitoring wells were advanced 20 to 30 feet into bedrock. The locations of the monitoring wells are presented on Figure 2-1. The site geologic conditions based on the investigation at those locations, in comparison to information provided in Section 3.0 of the OU-3 RI (M&E, 1997), are described herein.

Overburden thickness in borings that terminated at or in bedrock ranges from 21 to 56 feet. Overburden was observed to be thinnest at the MW-304 (22 feet) and MW-305 (21 feet) clusters and thickest at MW-308 (56 feet). The overburden soils encountered during this investigation consisted of glacial outwash, organics/peat, basal/ablation till, and fill. The glacial outwash was observed to be brown to tan or gray/natural (mineral) color, fine to coarse sand with little to trace amounts of silt, some to trace amounts of gravel, and trace amounts of cobble or boulder. Glacial outwash was encountered at clusters MW-301, MW-304, MW-305, MW-307, and MW-308; though the glacial outwash at MW-301 was finer than the other locations. Organic sands and peat were observed to occur at MW-303, MW-307, and MW-308, at depths of 7 to 10 feet. At each of these locations, the soil above the organic/peat layers was fill. Glacial till was observed at the MW-301 cluster as described in Section 3.0 of the OU-3 RI report (M&E, 1997), and possibly at depth in MW-308, though sample recovery was poor and could only be described as till-like. Fill was ubiquitously found at all of the MW-300 series borings to depths of 2.5 to14 feet. Borings MW-302S and MW-306S (both 12 feet) appeared to be entirely fill material. In general, the MW-300 series soil borings confirm the distribution

of soils/sediments as described in Section 3.0 of the OU-3 RI report (M&E, 1997).

The bedrock at the site was cored and characterized at MW-301, MW-304, MW-305, MW-307, and MW-308. The bedrock cores were logged and described by an M&E geologist. The bedrock lithologies observed during this investigation are consistent with those described in Section 3.0 of the OU-3 RI report (M&E, 1997), and include granite and diorite. Diorite, which was observed at MW-305, suggests that the extent of the pluton depicted in Figure 3-7 of the OU-3 RI report (M&E, 1997) extends further east-southeast than previously thought. Additionally, depths to bedrock were much shallower than expected at the MW-304 and MW-305 clusters, 22 and 21 feet, respectively. The bedrock surface elevations, which were estimated to be at 70 feet at both MW-304 and MW-305, were instead 92 feet and 97 feet, respectively.

At MW-301B, granite was observed from 52 to 78 feet, with a vein of quartz pegmatite from 66 to 74 feet below ground surface. The granite was observed to be weathered and highly fractured, with Rock Quality Designations (RQDs) of 0 to 33%.

At MW-304B, a total of 21.5 feet of granite was cored. The initial 3 feet were highly fractured with a RQD of 20%, but rapidly changed to more competent granite with RQDs of 69% to 90%. The granite was medium to coarse grained containing mica of the muscovite variety. Fractures were moderately angled and sand/silt filled joints were noted.

At MW–305D, bedrock was much shallower than anticipated. In order to confirm bedrock, two five-foot cores were drilled. Drilling was stopped two feet into the first five-foot run, when a boulder was thought to have been encountered, and a roller bit was used for the next three feet. The second core run had a RQD of 55%. The recovered bedrock cores were a coarse grained (nearly pegmatitic) diorite/granodiorite, with high angled to vertical fractures. Two dominant fracture sets were observed to intersect at approximately 40 degrees.

At MW-307B the recovered rock cores were moderate to coarse grained granite with RQDs of 30% to 80%. Observed fractures were generally large, highly weathered, and high angle to vertical. At a depth of 78.0 to 78.4 feet below ground surface, a shear zone was encountered, as noted by linear features and rock deformation.

At MW-308B a total of 25 feet of granite was cored. The first 15 feet of rock core consisted of a fine-grained granite coarsening downward into a medium-grained granite, with moderate to high angle fractures, with some clayey silt-sand filled joints and fractures. RQDs were 42% to 54%. The RQDs of the next two five-foot runs were 100% and 18%, respectively. From 62.75 to 67.75 feet below ground surface, the granite was medium to coarse grained with one moderately angled fracture. The 67.75 to 72.75 foot run was slightly more weathered and had a low RQD due to a high angle fracture and poor recovery.

3.3 Site Hydrogeologic Conditions

As noted in the OU-3 RI report (M&E, 1997), groundwater in both the overburden and bedrock aquifers generally enters the site from the southwest and flows to the northeast. Similarly, surface

water flows onto the site from the south and flows to the northeast, where it converges with B&M Pond and associated wetlands. Based on seepage meter, staff gauge, and mini-piezometer results, the potential for groundwater to discharge to surface water was evident throughout most of the site.

Water level measurements (groundwater and surface water) were taken on March 31, 2006 as part of the current investigation and are summarized in Table 3-1. Well construction information is presented in Section 2.0 and water quality data are presented in Appendix A. The well construction information is summarized on Table 2-1. A shallow overburden groundwater contour map was generated based on data collected during this investigation (Figure 3-1). The contours agree with the OU-3 RI report conclusions that groundwater flow is generally to the northeast with convergence toward B&M Pond and associated wetlands.

Horizontal hydraulic gradients in the shallow overburden range from a maximum of 7.4×10^{-3} ft/ft to the southwest, to a minimum of 7.4×10^{-4} ft/ft in the west central part of the site. In general, gradients are highest to the southwest where there are till soils and the topographic elevation of the site is generally higher; lowest in the west central area of the site which is relatively flat; and in between to the eastern part of the site toward the wetlands, and lower elevations north and south of Schaffer Landfill.

Using the March 2006 groundwater level data (Table 3-1) and well installation data (Table 2-1), vertical hydraulic gradients were evaluated in clustered wells. Vertical hydraulic gradients were generally upward from bedrock to shallow flow zones (e.g., MW-308, MW-210, MW-211, MW-212, MW-201, OW-01/02/03, and OW-49/50/51) or upward bedrock to deep overburden and downward from shallow to deep overburden (e.g., MW-307, MW-215, MW-214, MW-213, MW-206, and MW-205) at wells located at the edges of or in wetlands along the eastern part of the site. In the center of the site (e.g., OW-37/38 and MW-208, MW-305), there were no vertical gradients, and to the west and north there were downward gradients (e.g., OW-15/16, OW-22/23, OW-44/45/46, MW-203, and MW-204).

3.3.1 Overburden Groundwater. Groundwater at the site was found at a depth of approximately 2 feet below ground surface where wells were installed in low lying areas and up to approximately 14 feet below ground surface where wells were installed at higher elevations. Groundwater in the shallow and deep overburden is interpreted to flow generally east, discharging to the B&M Pond and associated wetlands (on both sides - east and west - of Pond Street). The section of the Middlesex Canal that runs south of the B&M Landfill also drains a portion of these wetlands (west of Pond Street) toward the southeast.

A current shallow overburden groundwater contour map is presented as Figure 3-1. Data for this map were collected during a comprehensive water level measurement round conducted on March 31, 2006. Compared to previous groundwater maps found in the OU-3 RI report (M&E, 1997), there do not appear to be any significant changes in shallow groundwater flow on a site-wide scale. The only notable difference is a mounding of the water table in the area of the Asbestos Lagoons, which is less noticeable during the 2006 water level round than during the 1995 water level round. The difference may be related to the water level elevations, which were approximately 0.5 to 1.0 feet higher during the 2006 water level round. Monitoring well OW-14, which is located in the vicinity of the Asbestos Lagoons, had an anomalously high groundwater elevation during the 2006 water level round. On a

smaller (local) scale, groundwater flow at the former Old B&M Oil/Sludge Recycling Area has most likely changed due to the new construction of a large building materials wholesaler supply company that has installed numerous drains and collection systems to catch storm water runoff and detain it on-site.

3.3.2 Overburden and Surface Water Interactions. As part of the 2006 groundwater level measurement round, M&E installed 10 surface water staff gauges to evaluate the surface water conditions and the relations to overburden groundwater. The locations of the surface water staff gauges and elevations of the surface water on March 31, 2006 are shown on Figure 3-1. As seen on this figure, it appears that shallow overburden groundwater discharges to the surface waters around the site and that the surface water gradient is generally to the east.

3.3.3 Bedrock Groundwater. Groundwater in the crystalline bedrock underlying the site is contained and transmitted in the highly fractured weathered bedrock and in secondary interstices such as joints and fractures in more competent bedrock. Bedrock wells were installed approximately 20 to 30 feet into bedrock. A current bedrock groundwater contour map is presented as Figure 3-2. Data for this map were collected during a comprehensive water level measurement round conducted on March 31, 2006. Compared to previous groundwater maps found in the OU-3 RI report (M&E, 1997), there do not appear to be any significant changes in bedrock groundwater flow on a site-wide scale.

Groundwater in bedrock is interpreted to flow generally eastward at the site (M&E, 1997). Hydraulic gradients were calculated to be 2.0×10^{-3} ft/ft across the central portion of the site (OW-37 to OW-34, 2006 data) and 1.0×10^{-3} ft/ft across the east side of the site (OW-34 to OW-49, 2006 data). Compared to the gradients between the same wells, 1.9×10^{-3} ft/ft across the central portion of the site (OW-37 to OW-34, 1995 data) and 1.0×10^{-3} ft/ft across the east side of the site (OW-34 to OW-49, 1995 data), there was no significant change in gradients.

SECTION 4.0
PRESENTATION OF ANALYTICAL DATA

This section outlines the validation of the analytical data for collected samples, discusses the nature of the analytical results by parameter (VOCs, metals, etc.), and discusses the extent of the contamination at the site. Analytical methods were selected to achieve parameter project action limits (PALs), which were selected based on risk criteria. Specific sources for each individual PAL are presented by matrix and analysis in the EPA-NE QAPP Worksheet #9b, in Appendix A of M&E's SAP (M&E, 2005).

4.1 Analytical Data Validation and Review

This section outlines the validation of the analytical data for samples, and discusses the nature of the results. The data were evaluated with respect to the data quality objectives (DQOs) for the site as presented in the SAP (M&E, 2005). The DQOs are summarized as follows:

- Fill data gaps and confirm previous findings concerning the groundwater characteristics of the site in terms of groundwater contours and flow;
- Determine the current nature and extent of groundwater contamination at the site;
- Evaluate if 1,4-dioxane is present as a contaminant in groundwater;
- Provide groundwater data of sufficient quality to perform a risk assessment; and
- Better define the nature and extent of NAPL at the site.

Samples collected by M&E were submitted for laboratory analysis using a combination of EPA Contract Laboratory Program (CLP) RAS and DAS laboratories. All DAS specifications are presented in Appendix G of M&E's SAP (M&E, 2005), and applicable specifications are also included as attachments to each data validation memorandum. As described in Section 2.0, groundwater samples were analyzed for various parameters (VOCs, SVOCs, metals, pesticides/PCBs, and 1,4-dioxane), depending on historical results. Specific analyses performed on each individual sample are presented in Table 2-2. Section 2.0 discusses the reasoning for the particular suite of analyses selected for each specific groundwater location. One sample of LNAPL product was submitted for hydrocarbon fingerprint identification. Soil samples collected during monitoring well installation were analyzed for TOC and grain size.

All analytical data were validated in accordance with EPA Region I guidance documents - *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analysis* (U.S. EPA, 1996b), and *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses* (U.S. EPA, 1989), with modifications as appropriate. Additional validation guidance was provided by *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (U.S. EPA, 2004b) and *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review* (U.S. EPA, 2001). As specified in the SAP (M&E, 2005), sample data for VOCs, SVOCs, metals, pesticides/PCBs, and 1,4-dioxane underwent Tier II validation. Sample data for hydrocarbon fingerprint identification underwent Tier I validation. Sample data for TOC and grain size underwent a cursory review for completeness.

Groundwater samples were collected from a total of sixty monitoring wells. All locations were

analyzed for VOCs and SVOCs under the CLP RAS program using the *USEPA Contract Laboratory Program Statement of Work for Analysis of Low Concentration Organic, OLC03.2* (U.S. EPA 2000), as modified in RAS Modification No. 1330.1. Twenty-one monitoring wells were analyzed for pesticides/PCBs using the same modified RAS statement of work. Samples were analyzed by Shealy Environmental Services of Cayce, South Carolina.

All sixty monitoring wells were analyzed for metals under the CLP RAS program using the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media/Multi-Concentration, ILM05.3* (U.S. EPA 2004a), as modified in RAS Modification No. 1329.0. Samples were analyzed by Liberty Analytical Corporation of Cary, North Carolina.

Fifteen monitoring wells were analyzed for 1,4-dioxane under the RAC DAS program using the M&E DAS *Analytical Specification for the Analysis of 1,4-Dioxane in Aqueous Samples by Extraction and Analysis by GC/MS/SIM* (D-122.1) based on EPA methodology (M&E, 2005). Samples were analyzed by Columbia Analytical Services of Kelso, Washington.

One sample of LNAPL was collected from piezometer PZ-115 and analyzed for petroleum hydrocarbon identification under the RAC DAS program using the M&E DAS *Analytical Specification for the Analysis of Petroleum Product (GC Fingerprinting) in non-Aqueous Phase Liquid (NAPL) Samples* (D-087) based on EPA methodology (M&E, 2005). Samples were analyzed by Alpha Woods Hole Labs of Raynham, Massachusetts.

Eleven subsurface soil samples (plus one field duplicate) were submitted to the EPA New England Laboratory in North Chelmsford, Massachusetts for TOC analysis following the EPA Region I SOP, EIA-MISCTOC6.SOP.

Ten subsurface soil samples (plus one field duplicate) were submitted to the EPA New England Laboratory in North Chelmsford, Massachusetts for grain size analysis following the EPA Region I NERL/EMT, Grain Size Analysis SOP, revision 3.

Groundwater data were reported in 14 sample delivery groups (SDGs); with six SDGs for VOC, SVOC, and pesticide/PCB analysis, five SDGs for metals analysis, two SDGs for 1,4-dioxane analysis, and one SDG for petroleum hydrocarbon identification.

Detailed data validation memoranda have been submitted to EPA and are listed below:

- VOCs, SVOCs, and pesticides/PCBs, Tier II Data Validation (Case 34958, SDG A1Z41), dated 04/26/06
- VOCs, SVOCs, and pesticides/PCBs, Tier II Data Validation (Case 34958, SDG A1ZA0), dated 04/28/06
- VOCs, SVOCs, and pesticides/PCBs, Tier II Data Validation (Case 34958, SDG A1Z60), dated 05/15/06
- VOCs, SVOCs, and pesticides/PCBs, Tier II Data Validation (Case 34958, SDG A1ZA2), dated 05/26/06
- VOCs, SVOCs, and pesticides/PCBs, Tier II Data Validation (Case 35099, SDG

A24T4), dated 05/16/06
- VOCs, SVOCs, and pesticides/PCBs, Tier II Data Validation (Case 35099, SDG A24T7), dated 05/16/06
- Metals, Tier II Data Validation (Case 34958, SDG MA1Z94), dated 03/10/06
- Metals, Tier II Data Validation (Case 34958, SDG MA1Z44), dated 03/10/06
- Metals, Tier II Data Validation (Case 34958, SDG MA1ZA8), dated 03/14/06
- Metals, Tier II Data Validation (Case 35099, SDG MA24T1), dated 04/25/06
- Metals, Tier II Data Validation (Case 35099, SDG MA24X4), dated 04/25/06
- 1,4-Dioxane, Tier II Data Validation (Case 0266M, SDG D06743), dated 02/24/06
- 1,4-Dioxane, Tier II Data Validation (Case 0269M, SDG D06830), dated 04/26/06
- Petroleum hydrocarbon identification, Tier I Data Validation (Case 0269M, SDG D06839), dated 05/26/06

4.1.1 Volatile Organic Compounds. There were no problems identified during data validation that resulted in the rejection of volatiles data. Problems identified during data validation had only minor impacts on data usability and are detailed in the associated data validation memoranda, summarized as follows. Some positive results for 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2-dichloroethane, bromoform, carbon disulfide, toluene, trichloroethene, chloroform, dibromochloromethane, methylene chloride, and benzene were qualified as nondetect (U) at the quantitation limit or sample result due to equipment blank, trip blank, method blank, instrument blank, or storage blank contamination. Numerous other positive results and nondetect results were qualified as estimated (J and UJ, respectively) due to analytical problems related to initial calibration (ICAL) and continuing calibration (CCAL) nonconformance, MS/MSD nonconformance, deuterated monitoring compound (DMC) nonconformance, and/or surrogate recovery nonconformance.

All groundwater samples collected had complete volatiles results that were usable for project data quality objectives as qualified during data validation.

4.1.2 Semivolatile Organic Compounds. During data validation, one problem was identified with semivolatile data that resulted in the rejection of data. Nondetect results in some samples were rejected for atrazine due to laboratory fortified blank (LFB) recovery nonconformance. Details are presented in the associated data validation memoranda. The rejection of this data has a major impact on the usability of atrazine results for project objectives.

Other problems identified during data validation had only minor impacts on data usability and are detailed in the associated data validation memoranda, summarized as follows. Some positive results for di-n-butylphthalate, naphthalene, atrazine, bis(2-ethylhexyl)phthalate, and diethylphthalate were qualified as nondetect (U) at the quantitation limit or sample result due to equipment blank or method blank contamination. Numerous other positive results and nondetect results were qualified as estimated (J and UJ, respectively) due to analytical problems related to sample holding time exceedance, extraction holding time exceedance, ICAL/CCAL nonconformance, LFB and laboratory fortified blank duplicate (LFBD) nonconformance, surrogate recovery nonconformance, and/or MS/MSD nonconformance.

With the exception of the rejected atrazine results in some samples, semivolatile data are usable for data

quality objectives as qualified during validation.

4.1.3 Pesticides/PCBs. During data validation, problems were identified with pesticide/PCB data that resulted in the rejection of some data and are detailed in the associated data validation memoranda, summarized as follows. Nondetect results in some samples were rejected for 4,4'-DDD, alpha-BHC, heptachlor epoxide, heptachlor, endrin, endrin aldehyde, endosulfan II, and Aroclor-1016 due to LFB recovery nonconformance; surrogate recovery nonconformance; performance nonconformance for pesticide degradation; percent difference (%D) exceedance between the two columns' results; and/or MS/MSD nonconformance. Positive results for 4,4'-DDT and endrin aldehyde and heptachlor in some samples were rejected due to %D exceedance between the two columns' results. All non-detect pesticide and PCB Aroclor results in two samples were rejected due to surrogate recovery nonconformance. The rejection of these data has a major impact on the usability of the pesticide/PCB results for project objectives.

Numerous other positive results and nondetect results were qualified as estimated (J and UJ, respectively) due to analytical problems related to sample holding time exceedance, LFB nonconformance, performance nonconformance for pesticide degradation, surrogate recovery nonconformance, %D exceedance between the two columns' results, Performance Evaluation Mixture (PEM) nonconformance, MS/MSD nonconformance and/or poor field duplicate precision.

With the exception of the rejected results described above, all pesticide/PCB data are usable for data quality objectives as qualified during validation.

4.1.4 Metals. There were no problems identified during data validation that resulted in the rejection of metals data. Other problems identified during data validation had only minor impacts on data usability and are detailed in the associated data validation memoranda, summarized as follows. Some positive results for aluminum, antimony, arsenic, beryllium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, silver, thallium, vanadium, and zinc were qualified as nondetect (U) due to equipment blank, instrument blank, or preparation blank contamination. Numerous other positive results and nondetect results were qualified as estimated (J and UJ, respectively) due to interferences detected in the interference check standard (ICSA) solution, Performance Evaluation (PE) sample recoveries outside of acceptance windows, field duplicate precision outside of criteria windows, laboratory duplicate imprecision, negative instrument drift, and/or Inductively Coupled Plasma (ICP) serial dilution imprecision.

All groundwater samples collected had complete metals results that were usable for project data quality objectives as qualified during data validation.

4.1.5 1,4-Dioxane. There were no qualifications to the 1,4-dioxane data as a result of error associated with sampling or analysis. All data are usable for project quality objectives.

4.1.6 Petroleum Hydrocarbon Identification. A Tier I validation and data quality assessment were performed on the petroleum hydrocarbon identification data. Only major analytical problems would be identified with this level of validation. There were no major issues or impacts to data quality identified as the result of the data validation. Therefore, the petroleum hydrocarbon identification data are usable

for the data quality objectives.

4.1.7 TOC and Grain Size. A cursory review of the TOC and grain size data was performed. There were no major issues or impacts to data quality identified as the result of this review. All data are usable for project quality objectives.

4.2 Groundwater Nature and Extent

Analytical data summary tables providing groundwater sampling results for all compounds analyzed during the winter 2005-2006 sampling round are presented in Appendix F. Table 4-1 provides a summary of analytical results for those compounds which were detected in one or more samples. The PALs set for the site in the SAP (M&E, 2005) have also been included on this table to provide a concentration level for visual evaluation purposes. A comparison between the results from this investigation and historical results has been presented in Table 4-2. A discussion of these results is presented below.

The most recent groundwater monitoring performed at the site was in 1995 (both April and July). To provide an updated "snapshot" of the nature and extent of groundwater contaminants at the site, groundwater from fifteen new monitoring wells and 45 existing monitoring wells was sampled during winter 2005-2006. Groundwater monitoring well locations are shown on Figure 2-1.

As presented in the OU-3 RI report (M&E, 1997), the site did not show evidence of any well-defined contaminant plumes. Organic contaminants also did not present themselves at high enough concentrations to be considered "hot spots." Metals were similarly distributed across the site without a notable pattern.

The human health risk assessment contained in the OU-3 RI report (M&E, 1997) determined that groundwater contaminants contributing to cancer risk and non-cancer hazards in excess of regulatory guidelines at the site included a variety of VOCs, SVOCs, pesticides/PCBs, and metals. The FS report (M&E, 2004) provided preliminary remediation goals (PRGs) as follows:

- benzene - 5 ug/L
- 1,2-dichloroethane (1,2-DCA) - 5 ug/L
- 1,1-dichloroethene (1,1-DCE) - 7 ug/L
- 1,1,2,2-tetrachloroethane - 0.425 ug/L
- tetrachloroethene (PCE) - 5 ug/L
- trichloroethene (TCE) - 5 ug/L
- bis(2-ethylhexylphthalate (BEHP) - 6 ug/L
- carbazole - 4.25 ug/L
- aldrin - 0.005 ug/L
- PCBs - 0.5 ug/L
- arsenic (As) - 10 ug/L
- beryllium (Be) - 4 ug/L

- manganese (Mn) - 300 ug/L[1]
- thallium (Tl)- 2 ug/L

Also presented in the OU-3 FS report was discussion of the time necessary to achieve the PRGs presented above. Based on modeling simulations, some VOCs were likely to achieve the PRGs in a short amount of time, with or without active remediation, due to their low concentrations. However, the metals, SVOCs, and pesticides were not likely to achieve the PRGs in a reasonable amount of time, even with active remediation. This recent monitoring round provides results 10 years beyond the historical results and allows an evaluation of these modeling conclusions to be performed.

In general, the recent monitoring (Table 4-1) shows that a noticeable contaminant plume is still not evident and that the site continues to have a variety of contaminants distributed throughout the site at relatively low concentrations compared to site PRGs and PALs. Note that Table 4-1 highlights exceedances of site PALs for comparison purposes, but that these PAL (developed to provide usable data for project objectives) exceedances do not necessarily correspond to PRG (developed for remediation purposes) exceedances at the site. In comparing the recent monitoring results to historical results (Table 4-2), many of the organic compounds previously detected above site PRGs have decreased to concentrations below the PRGs at those same wells. However, samples from some wells have analytes not previously detected. Some of these analytes (e.g., 1,1-DCA, and vinyl chloride) are breakdown products possibly resulting from natural attenuation occurring at the site. Since historical detection limits were not as sensitive as those used in the recent sampling round, it is also possible that detection of analytes not previously reported may be attributable to the increased analytical sensitivity.

Table 4-3 provides a well-specific summary of notable detections and observations for the winter 2005-2006 groundwater monitoring round. The table also provides the primary rationale for well selection, based on historical monitoring data, for comparison purposes.

1,4-Dioxane was detected in 6 out of 15 locations at the site. However, the maximum detection was 2.9 ug/L, which is less than the state guideline of 3 ug/L (the site PAL). 1,4-Dioxane is known to be associated with releases of chlorinated solvents, particularly 1,1,1-TCA. The low concentrations of both 1,4-dioxane and chlorinated solvents are consistent with the hypothesis that much of the site contamination by chlorinated solvents is likely due to smaller spills/releases across the site, rather than any significant releases. Based on the available data, these concentrations also indicate that 1,4-dioxane is not likely to be a significant site contaminant.

In reviewing the site areas of concern (AOCs) (see Figures 1-2 and 2-1 for locations of AOCs and monitoring wells) and with respect to the recent monitoring results, the following observations are noted (monitoring well clusters used for evaluation of each AOC are noted in brackets):

- The Old B&M Oil/Sludge Recycling Area [MW-202, MW-203, MW-301, MW-302, MW-303, and OW-37/38] did not show evidence of LNAPL in MW-303, installed near the destroyed piezometer P-12, which historically showed evidence of LNAPL. Arsenic and manganese were

[1] Original PRG in OU-3 FS report was 875 ug/L; PRG has been modified to reflect changes to regulatory standards and guidance since that report was published

detected in the area above PRGs. It appears that there may have been a release involving carbon tetrachloride after the 1995 sampling events, as evidenced by the detection in MW-202S (120 ug/L) and the downgradient OW-38 (deep overburden; 37 ug/L). While carbon tetrachloride did not have a site PRG developed previously, these concentrations are above the federal Maximum Contaminant Level (MCL) of 5 ug/L. There is also some residual evidence (1,1,1-TCA and 1,4-dioxane) in MW-203D of a historical release in the area.

- Monitoring around the Locomotive Shop Disposal Areas [MW-204, MW-205, and MW-206] only showed exceedances of site PRGs by manganese (PRG - 300 ug/L).

- Near the Asbestos Lagoons [MW-208, MW-209, OW-09/10/12, and OW-20], arsenic and manganese concentrations are still above site PRGs (10 ug/L and 300 ug/L, respectively). Most of the chlorinated VOCs detected historically have decreased in magnitude. One location, OW-20, showed increased detections of chlorinated VOCs.

- The furthest downgradient wells [MW-1/1A/1B/1C] did not show any PRG exceedances and only showed low organic detections.

- At the B&M Railroad Landfill [MW-213, MW-214, and MW-215; PZ-115], a LNAPL sample was collected at PZ-115 and determined to be No. 6 Fuel Oil (see Appendix F for results). MW-214S (downgradient of PZ-115) showed PAH detections close to reporting limits. TCE was still detected in the bedrock wells MW-213B and OW-49 at concentrations above the PRG, but trending downwards. Arsenic and manganese were detected above site PRGs.

- The wells sampled to provide information on the Contaminated Soils Area [MW-304 and OW-35] showed a few detections of organics close to reporting limits, and only manganese at OW-35 just above the site PRG. The wells which are on the upgradient end of the area (OW-37 and OW-38), may have been impacted by releases near the Old B&M Oil/Sludge Recycling Area, as well as site operations. These two wells have miscellaneous organics detected and, along with the carbon tetrachloride discussed above, show PCE detected above the site PRG in the deep overburden (OW-38).

- For the RSI Landfill [MW-210, MW-211, MW-212, and OW-01/02, organic detections appear to be reducing in magnitude. Arsenic and manganese concentrations are still above site PRGs.

- The Asbestos Landfill [MW-207, MW-305, MW-307, MW-308, OW-25/26, and OW-07/08] had seven new wells installed during this investigation. Upgradient locations showed a number of organics detected, including TCE and PCE above site PRGs in MW-207B. MW-306S showed detections close to the reporting limits of many SVOCs, including phenols, phthalates, and PAHs. These are likely residuals from the previous lagoon operations in the area. Downgradient locations (MW-307 cluster, MW-308B, OW-07 and -08) showed VOCs detected both above and below site PRGs. Benzene detections above the site PRG were confirmed in the area. Detections of chlorinated VOCs above site PRGs were also found in both the MW-307 cluster and MW-308B. As with the other areas of the site, arsenic and manganese concentrations were detected above site PRGs.

4.3 Subsurface Soil Results

Analytical data summary tables providing subsurface soil sampling results for TOC and grain size are presented in Appendix F. Of the samples collected, the primary soil size would be considered medium sand. TOC measurements ranged from non-detect (detection limit of 360 mg/kg) to 3,110 mg/kg.

SECTION 5.0
CONCLUSIONS

During the fall of 2005 and winter of 2005-2006, M&E conducted a groundwater monitoring program at the Iron Horse Park Superfund Site - OU-4 in North Billerica, Massachusetts, for EPA Region I. Field reconnaissance was performed to evaluate the condition of the groundwater monitoring well network at the site. Historical monitoring data were reviewed and a monitoring program was established to provide a current "snapshot" of existing groundwater conditions at the site.

Fifteen new monitoring wells were installed to either replace wells which were no longer available (destroyed) or to fill data gaps in the monitoring network. Subsurface soil samples were collected from these locations and analyzed for TOC and grain size to supplement historical data used in creating a groundwater model for the site.

A total of 60 monitoring wells were sampled and analyzed for VOCs, SVOCs, and metals. A subset of these wells were also analyzed for pesticides/PCBs (21 locations) and 1,4-dioxane (15 locations). One LNAPL sample was collected from an on-site piezometer and sent to a laboratory for hydrocarbon fingerprinting analysis.

As specified in the SAP (M&E, 2005), Tier II data validation was performed on all the analytical chemistry data, except for LNAPL, TOC, and grain size. Tier I data validation was performed on the LNAPL hydrocarbon fingerprint analysis. TOC and grain size analyses were not formally validated. The required level of validation was met for all matrices.

A comprehensive water-level survey was performed in March 2006 and included use of staff gauges installed in surface water bodies and streams at the site. A site survey of the newly installed monitoring locations was also performed. This information was applied to the evaluation of the groundwater flow direction.

Conclusions regarding this investigation have been developed based on the problem definition (Section 1.3) and include the following:

- Compared to historical findings reported in the OU-3 RI report (M&E, 1997), there were only minor differences in subsurface geology and groundwater flow direction determined from the current investigation.

- Groundwater monitoring data was collected at a quality sufficient for any potential supplemental human health risk assessment at the site.

- In general, the recent monitoring shows that a noticeable contaminant plume is still not evident and that the site continues to have a variety of contaminants distributed throughout the site at relatively low concentrations compared to site PRGs and PALs. In comparing the recent monitoring results to historical results, many of the organic compounds previously detected above site PRGs have decreased to concentrations below the PRGs at those same wells.

However, samples from some wells have analytes not previously detected. Some of these analytes (e.g., 1,1-dichloroethane and vinyl chloride) are breakdown products possibly resulting from natural attenuation occurring at the site. Since historical detection limits were not as sensitive as those used in the recent sampling round, it is also possible that detection of analytes not previously reported may be attributable to the increased analytical sensitivity.

- Similar to historical monitoring results, arsenic and manganese PRG exceedances were noted across the entire site. Most concentrations were of similar magnitude to historical results. This confirms that attainment of cleanup goals for metals at the site could take a significant number of years (shown as > 200 in the 2004 OU-3 FS report).

- LNAPL was not observed in any monitoring locations near or around the Old B&M Oil/Sludge Recycling Area. Furthermore, monitoring results did not show contaminant concentrations indicative of an LNAPL source. It is possible that the historically-observed LNAPL is no longer in the area, due to either migration or possible removal during construction activities, or that the current monitoring network does not intersect with the LNAPL. However, LNAPL was observed in a piezometer at the B&M Railroad Landfill. Hydrocarbon fingerprinting resulted in the determination that the LNAPL is No. 6 Fuel Oil. With respect to the possible presence of DNAPL in some site areas, chlorinated hydrocarbons were detected in deep overburden and bedrock locations, but not at concentrations which would be indicative of a significant source.

- 1,4-Dioxane was detected in 6 out of 15 locations at the site. However, the maximum detection was 2.9 ug/L, which is less than the state guideline of 3 ug/L (the site PAL). 1,4-Dioxane is known to be associated with releases of chlorinated solvents, particularly 1,1,1-TCA. The low concentrations of both 1,4-dioxane and chlorinated solvents are consistent with the hypothesis that much of the site contamination by chlorinated solvents is likely due to smaller spills/releases across the site, rather than any significant releases. Based on the available data, these concentrations also indicate that 1,4-dioxane is not likely to be a significant site contaminant.

SECTION 6.0
REFERENCES

Castle, R.O. 1959. Surficial geology of the Wilmington Quadrangle, Massachusetts. U.S Geological Survey geologic quadrangle map GQ-122.

Metcalf and Eddy, Inc. (M&E). 1995. *Ecological characterization for remedial investigation - Iron Horse Park Superfund Site, 3rd Operable Unit, North Billerica, MA.* Report prepared for the U.S. Environmental Protection Agency. April 1995.

Metcalf & Eddy (M&E). 1997. *Remedial Investigation Final Report - Iron Horse Park Superfund Site, 3rd Operable Unit, North Billerica, MA.* Report prepared for the U.S. Environmental Protection Agency. September 1997.

Metcalf & Eddy (M&E). 2004. *Feasibility Study Final Report, Iron Horse Park Superfund Site, 3rd Operable Unit, North Billerica, Massachusetts.* June 2004.

Metcalf & Eddy (M&E). 2005. *Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) for Operable Unit 4 Remedial Investigation/Feasibility Study Addendum, Hydrogeological Investigation, Iron Horse Park Superfund Site, North Billerica, Massachusetts.* November 2005.

Nelson, A.E. 1987. The Bloody Bluff fault zone near Lexington, Massachusetts. In *Geological Society of America Centennial Field Guide—Northeastern Section*.

U.S. Environmental Protection Agency (U.S. EPA). 1989. *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis.* June 13, 1988. Modified February 1989.

U.S. Environmental Protection Agency (U.S. EPA). 1993. *Region I Tiered Organic and Inorganic Data Validation Guidelines.* July 1993.

U.S. Environmental Protection Agency (U.S. EPA). 1996a. *Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, Revision 2.* July 1996.

U.S. Environmental Protection Agency (U.S. EPA). 1996b. *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December 1996.

U.S. Environmental Protection Agency (U.S. EPA). 2000. *USEPA Contract Laboratory Program, Statement of Work for Analysis of Low Concentration Organic*. OLC03.2. December 2000.

U.S. Environmental Protection Agency (U.S. EPA). 2001. *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review.* June 2001.

U.S. Environmental Protection Agency (U.S. EPA). 2004a. *USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis, Multi-Media/Multi-Concentration*. ILM05.3. February 2004.

U.S. Environmental Protection Agency (U.S. EPA). 2004b. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* October 2004.

TABLES

TABLE 2-1. MONITORING WELL AND PIEZOMETER CONSTRUCTION INFORMATION

Well ID Number [1]	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Formation Screened	PVC Diameter (in.)	Screened Interval (ft bgs)	Depth to Bottom	
						as Installed [2] (ft bgs)	Measured [3] (ft bgs)
Monitoring Wells - "OW" Series							
OW-01	577523.37	664790.39	BR	1.5	35.5-55.5	55.5	54.78
OW-02	577528.09	664801.57	DOB	2	15.58-25.58	25.58	25.50
OW-03	577525.08	664795.65	SOB	2	3-13	13	12.98
OW-04	576169.68	664348.16	DOB	2	15.25-25.25	25.25	24.01
OW-05	575623.51	663991.96	BR	1.5	13-33	33	30.79
OW-06	575626.07	663985.39	DOB	2	4.5-9.5	9.5	10.13
OW-07	577226.34	664957.61	DOB	2	30.25-40.25	40.25	40.27
OW-08	577231.48	664958.06	SOB	2	15.41-20.41	20.4	19.26
OW-09	578209.81	663059.75	BR	1.5	64.5-84.5	84.5	84.23
OW-10	578205	663055.08	DOB	2	50-65	65	60.38
OW-11	578214.82	663063.56	SOB	2	25-40	40	40.33
OW-12	578218.09	663066.08	SOB	2	5-20	20	19.98
OW-13	578075.91	662612.05	DOB	2	33-48	48	48.58
OW-14	578081.41	662608.62	SOB	2	7.8-22.8	22.8	22.93
OW-15	578046.93	661911.28	DOB	2	24.33-39.33	39.33	39.66
OW-16	578048.6	661915.07	SOB	2	8.5-18.5	18.5	18.58
OW-17	576684.93	662032.44	BR	1.5	50-70	70	-
OW-18	576690.49	662036.98	DOB	2	29.33-39.33	39.33	-
OW-19	576689.45	662032.65	SOB	2	6.33-21.33	21.33	-
OW-20	578131.63	663494.31	DOB	2	33.5-43.5	43.5	37.98
OW-21	578135.25	663499.71	SOB	2	3.5-18.5	18	17.93
OW-22	576136.05	663385.62	BR	1.5	21.9-41.9	41.9	40.10
OW-23	576144.9	663399.67	DOB	2	6-16	16	14.73
OW-24	576143.6	663772.26	DOB	2	9.5-24.5	24.5	24.63
OW-25	576854.6	663529.06	DOB	2	45-60	60	57.57
OW-26	576850.17	663532.26	SOB	2	25-40	40	37.99
OW-27	576854.78	663535.14	SOB	2	10-20	20	19.53
OW-28	576558.53	663711.33	BR	1.5	73.25-93.25	93.25	91.88
OW-29	576548.76	663709.19	DOB	2	36.25-56.25	56.25	55.23
OW-30	576555.12	663710.77	SOB	2	19.5-29.5	29.5	29.63
OW-31	576552.48	663710.11	SOB	2	5.33-15.33	15.33	15.33
OW-32	577248.26	661823.61	DOB	2	25-40	40	34.63
OW-33	577251.26	661825.82	SOB	2	10-20	20	16.23

TABLE 2-1. MONITORING WELL AND PIEZOMETER CONSTRUCTION INFORMATION

Well ID Number [1]	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Formation Screened	PVC Diameter (in.)	Screened Interval (ft bgs)	Depth to Bottom	
						as Installed [2] (ft bgs)	Measured [3] (ft bgs)
OW-34	578063.96	664287.89	BR	1.5	47-67	67	66.85
OW-35	578068.16	664290.77	DOB	2	22.25-37.25	37.25	37.15
OW-36	578072.53	664294.2	SOB	2	5-15	15	14.78
OW-37	577148.44	662932.5	BR	1.5	39.33-59.33	59.33	59.33
OW-38	577146.52	662935.13	DOB	2	14.66-29.66	29.7	29.76
OW-39	575739.83	662720.6	DOB	2	14-24	24	24.33
OW-40	575739	662719.35	SOB	2	3.91-8.91	8.9	8.60
OW-41	576309.06	662008.83	DOB	2	38-53	53	-
OW-42	576311.89	662000.47	SOB	2	21-31	31	-
OW-43	576304.33	661997.59	SOB	2	5-15	15	-
OW-44	578572.5	661892.8	BR	1.5	46.5-66.5	66.5	55.20
OW-45	578577.11	661892.96	DOB	2	23-38	38	27.58
OW-46	578581.11	661892.36	SOB	2	4.5-14.5	14.5	14.33
OW-47	576572.74	663186.32	DOB	2	18-28	28	25.88
OW-48	576571.77	663185.07	SOB	2	5-10	10	11.04
OW-49	578119.76	665898.92	BR	1.5	50-70	70	69.48
OW-50	578122.38	665903.06	DOB	2	28-43	43	42.48
OW-51	578126.32	665908.75	SOB	2	4-19	19	19.20
OW-52	574712.95	661133.9	BR	1.5	32-52	52	-
OW-53	574717.29	661129.15	DOB	2	11-21	21	-
Monitoring Wells - "MW" Series							
MW-200B	574817.5784	661295.5904	BR	2	40.5-60.5	60.9	-
MW-200D	574817.0894	661290.0894	DOB	2	16.7-26.7	27.1	-
MW-200S	574822.2095	661292.6999	SOB	2	5.5-15.5	16.1	-
MW-201B	575790.9527	661959.1608	BR	2	56.7-76.7	77.1	-
MW-201D	575781.6618	661957.4156	DOB	2	33.0-43.0	43.4	-
MW-201S	575784.6197	661965.4235	SOB	2	6.5-16.5	16.9	-
MW-202B	576420.9256	662444.7996	BR	2	80.0-100.0	100	>101.4
MW-202D	576413.3993	662441.0345	DOB	2	31.5-41.5	41.5	38.47
MW-202S	576406.5676	662438.336	SOB	2	6.0-16.0	16	16.80
MW-203B	576606.2809	662224.8093	BR	2	58.5-78.5	78.8	78.75
MW-203D	576598.9523	662217.8725	DOB	2	32.5-42.5	42.5	40.35
MW-203S	576592.7357	662213.0524	SOB	2	5.7-15.7	16	16.15
MW-204B	575297.6912	662371.0024	BR	2	55.2-75.2	75.4	75.59
MW-204D	575294.6435	662366.3443	DOB	2	35.3-45.3	45.5	41.96
MW-204S	575291.2801	662361.3053	SOB	2	13.8-23.8	24	24.36

TABLE 2-1. MONITORING WELL AND PIEZOMETER CONSTRUCTION INFORMATION

Well ID Number [1]	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Formation Screened	PVC Diameter (in.)	Screened Interval (ft bgs)	Depth to Bottom as Installed [2] (ft bgs)	Depth to Bottom Measured [3] (ft bgs)
MW-205B	575535.7676	662825.0867	BR	2	34.3-54.3	54.7	54.77
MW-205D	575536.3898	662831.1168	DOB	2	20.7-30.7	31	30.85
MW-205S	575529.6852	662827.3819	SOB	2	10.0-20.0	20.4	20
MW-206B	575770.194	662970.1129	BR	2	34.7-54.7	55	54.93
MW-206D	575774.0681	662973.0008	DOB	2	12.9-22.9	23.2	22.47
MW-206S	575766.6756	662966.0079	SOB	2	6.9-16.9	17.2	16.6
MW-207	576865.1306	663540.868	BR	2	104.4-124.4	124.7	124.35
MW-208B	577672.2601	663080.8321	BR	2	64.0-84.0	84	83.45
MW-208D	577635.8867	663068.3776	DOB	2	30.0-40.0	44	40.9
MW-208S	577630.6684	663064.0358	SOB	2	9.0-19.0	20	18.9
MW-209	578150.2341	663501.4304	BR	2	44.8-64.8	65	64.83
MW-210B	577283.2111	664338.5948	BR	2	23.5-43.5	44	42.93
MW-210S	577281.8117	664333.258	SOB	2	4.5-9.5	10	9.93
MW-211B	577621.0746	664514.8514	BR	2	27.4-47.4	47.8	47.63
MW-211D	577630.212	664517.214	DOB	2	15.6-25.6	26	25.85
MW-211S	577625.794	664511.7448	SOB	2	5.0-15.0	15.4	15.15
MW-212B	577412.6254	664601.1328	BR	2	31.8-51.8	52.1	51.03
MW-212D	577409.5818	664596.9821	DOB	2	14.7-24.7	25	24.98
MW-212S	577414.2628	664595.0929	SOB	2	5.1-15.1	15.5	15.18
MW-213B	577959.9502	665338.588	BR	2	64.1-84.1	91	84.53
MW-213D	577956.2589	665344.1503	DOB	2	41.3-51.3	51.8	51.77
MW-213S	577953.2634	665338.6265	SOB	2	7.4-17.4	17.7	17.95
MW-214B	578427.6565	665404.9425	BR	2	68.6-88.6	89	88.90
MW-214D	578438.5187	665405.0565	DOB	2	42.5-52.5	53	52.97
MW-214S	578432.9863	665405.3035	SOB	2	15.1-25.1	25.5	24.85
MW-215B	578701.2674	665281.3918	BR	2	66.1-86.1	86.7	86.54
MW-215D	578712.7692	665283.0611	DOB	2	39.6-49.6	50	49.59
MW-215S	578707.6106	665281.3576	SOB	2	10.0-20.0	20.5	19.47
MW-301B	575869.261	661924.842	BR	2	57-77	77	78.41
MW-301D	575864.751	661932.272	DOB	2	28-43	43	43.71
MW-301S	575873.451	661918.122	SOB	2	4.1-14.1	14.1	13.97
MW-302S	576660.337	662516.976	SOB	2	1.2-11.2	11.2	11.19
MW-303S	576043.517	662283.425	SOB	2	1.3-11.3	11.3	11.31

TABLE 2-1. MONITORING WELL AND PIEZOMETER CONSTRUCTION INFORMATION

Well ID Number [1]	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Formation Screened	PVC Diameter (in.)	Screened Interval (ft bgs)	Depth to Bottom as Installed [2] (ft bgs)	Depth to Bottom Measured [3] (ft bgs)
MW-304B	577820.264	663783.917	BR	2	29.4-49.4	49.4	49.42
MW-304D	577828.074	663790.777	DOB	2	15-25	25	25.1
MW-304S	577811.835	663775.967	SOB	2	2.2-12.2	12.2	12.7
MW-305D	576931.768	663873.251	DOB	2	15-25	25	25.3
MW-305S	576941.378	663872.132	SOB	2	3-13	13	12.98
MW-306S	576509.602	664118.004	SOB	2	1.85-11.85	11.85	11.67
MW-307B	576834.191	664995.421	BR	2	61.5-81.5	83.5	83.34
MW-307D	576842.351	664995.981	DOB	2	37.5-47.5	47.5	47.49
MW-307S	576849.581	664996.151	SOB	2	2.85-12.85	12.85	12.95
MW-308B	577219.273	664958.277	BR	2	52-72	72	72.26
Barcad Well - "MW" Series							
MW-01	578746.49	666184.22	BR	0.25	63-65	-	-
MW-01A	578746.49	666184.22	DOB	0.25	44-46	-	-
MW-01B	578746.49	666184.22	DOB	0.25	34-36	-	-
MW-01C	578746.49	666184.22	SOB	1.5	2-12	-	12.22
Piezometers - "P" Series							
P-1	577670.08	661619.93	SOB	2	4.75-9.75	9.75	9.10
P-2	577760.99	662395.75	SOB	2	2.04-7.04	7	8.18
P-3	577418.59	662238.38	SOB	2	4.59-9.59	9.6	7.00
P-4	578501.99	663473.8	SOB	2	2.16-7.16	7.2	-
P-5	578255.11	663551.87	SOB	2	3.83-8.83	8.8	1.45
P-9	577501.41	663744.32	SOB	2	3.5-8.5	8.50	8.00
P-10	575922.31	663657.2	SOB	2	7.75-12.75	12.75	12.15
P-11	576422.39	662152.27	SOB	2	5-10	10.00	-
P-12	576000.11	662229.9	SOB	2	3.66-8.66	8.66	-
P-17	577156.74	662919.63	SOB	2	3.5-8.5	8.50	8.57
P-18	576478.16	664238.824	SOB	2	-	-	14.20
Piezometers - "PZ" Series							
PZ-101	576673.59	662273.1	SOB	2	4.3-9.3	9.5	-
PZ-102	575881.45	661896.81	SOB	2	8.8-13.8	14	14.60
PZ-103	576407.86	662427.04	SOB	2	4.8-9.8	10.3	10.16
PZ-104A	575709.31	662809.24	SOB	2	9.5-14.5	14.7	14.76
PZ-105A	575723.84	662915.19	SOB	2	9.4-14.6	14.6	-
PZ-106A	575834.67	662948.68	SOB	2	4.8-10.1	10.1	10.20
PZ-104B	575459.85	662502.84	SOB	2	9.4-14.4	15	15.01
PZ-105B	575618.99	662772.47	SOB	2	9.0-14.0	14.2	14.28
PZ-106B	575451	662803.44	SOB	2	9.8-14.8	15	15.06
PZ-107	577822.31	663226.41	SOB	2	3.5-8.5	9	8.33
PZ-108	578015.28	662930.47	SOB	2	4.3-9.3	9.5	9.53
PZ-109	578272.65	663348.88	SOB	2	8.5-13.5	14	13.88
PZ-110	577585.73	664465.43	SOB	2	5.6-9.6	10.3	9.23
PZ-111	577389.86	664487.07	SOB	2	13.3-18.3	18.60	18.80
PZ-112	577610.01	664217.79	SOB	2	14.0-19.0	20.00	19.08
PZ-113	578205.67	664914.23	SOB	2	17.5-22.5	25.00	22.41
PZ-114	578205.14	665385.74	SOB	2	13.6-18.6	19.00	19.23
PZ-115	578392.52	665212.94	SOB	2	13.6-18.6	18.00	18.40

TABLE 2-1. MONITORING WELL AND PIEZOMETER CONSTRUCTION INFORMATION

NOTES:

1. - Well clusters are separated by spaces (note some clusters contain OW and MW wells, which are sorted by series).
2. - Depth to bottom as installed; Source: Table 5-1 - Phase 1A Report (CDM, 1987) for OW series wells; Table 3-2 of OU-3 RI Report (M&E, 1997) for MW-200 series and PZ series; Boring logs (Appendix C) for MW-300 series wells
3. - Measurements made October 31 - November 3, 2005 and March 31, 2006. Field measurements were adjusted for: thicknesses of concrete pads, which were built slightly above or at grade (0.25'); water level meter probe configuration, reading point to end of probe (0.28'); and for frost heaving.

DATUMS: NAD27 MA Geodetic Disc 16-E and 16-C, NGVD29, Massachusetts State Planer Feet.
NAD27 - North American Datum of 1927
NGVD29 - National Geodetic Vertical Datum of 1929

Well History - OW and P series installed by CDM, 1987; M&E installed series PZ-1994, MW-200s-1995, MW-300s-2006

ft bgs - feet below ground surface

ID - Identification

"-" - not applicable or no data available.

BR - Bedrock

DOB - Deep Overburden

SOB - Shallow Overburden

Sources for screen intervals:

MW-200 series monitoring wells - Table 3-2 of OU-3 RI Report (M&E, 1997)

PZ series piezometers - Table 3-2 of OU-3 RI Report (M&E, 1997)

OW series monitoring wells - Table D-2 of Hydrogeological Assessment Report (M&E, 1994)

P series piezometers - Table D-2 of Hydrogeological Assessment Report (M&E, 1994)

MW series barcad wells - Boring / Monitoring Well Log

MW-300 series monitoring wells - boring logs included in Appendix C.

TABLE 2-2. MONITORING WELLS AND PIEZOMETERS SELECTED FOR WATER LEVEL MEASUREMENTS AND CHEMICAL ANALYSIS

Well ID	Formation Screened	Water Level Measurement	Sample Analysis			Discussion/Rationale for Sample Location Selection
			VOCs, SVOCs, Metals	PCBs/ Pesticides	1,4-Dioxane	
Existing Monitoring Wells – "OW" Series						
OW-01	BR	X	X			Trichloroethene was previously detected at the MCL
OW-02	DOB	X	X			Manganese was previously detected above the PRG
OW-03	SOB	X				
OW-04	DOB	X				
OW-05	BR	X				
OW-06	DOB	X				
OW-07	DOB	X	X	X		The second highest PCB detection occurred here, as well as TCE above the PRG; well repaired and redeveloped
OW-08	SOB	X	X	X		Benzene and pesticides were previously detected here; well repaired and redeveloped
OW-09	BR	X	X	X		The highest previous PCB detection occurred here
OW-10	DOB	X	X			Manganese above PRG was previously detected here; well redeveloped
OW-11	SOB	X				
OW-12	SOB	X	X			1,1,2,2-Tetrachloroethane was previously detected above the PRG
OW-13	DOB	X				
OW-14	SOB	X				
OW-15	DOB	X				
OW-16	SOB	X				
OW-17	BR					Well could not be located
OW-18	DOB					Well could not be located
OW-19	SOB					Well could not be located
OW-20	DOB	X	X	X		Pesticides and manganese above PRGs were previously detected here; well redeveloped
OW-21	SOB	X				
OW-22	BR	X				
OW-23	DOB	X				
OW-24	DOB	X				
OW-25	DOB	X	X			Thallium and manganese above PRGs were previously detected here; well redeveloped
OW-26	SOB	X	X	X		Pesticides were previously detected here; well redeveloped
OW-27	SOB	X				
OW-28	BR	X				

TABLE 2-2. MONITORING WELLS AND PIEZOMETERS SELECTED FOR WATER LEVEL MEASUREMENTS AND CHEMICAL ANALYSIS

Well ID	Formation Screened	Water Level Measurement	Sample Analysis			Discussion/Rationale for Sample Location Selection
			VOCs, SVOCs, Metals	PCBs/ Pesticides	1,4-Dioxane	
OW-29	DOB	X				
OW-30	SOB	X				
OW-31	SOB	X				
OW-32	DOB	X				
OW-33	SOB	X				
OW-34	BR	X				
OW-35	DOB	X	X	X		Pesticides near the contaminated soils area were previously detected here
OW-36	SOB	X				
OW-37	BR	X	X			Manganese was previously detected above the PRG
OW-38	DOB	X	X		X	A downgradient location from Oil/Sludge Recycling Area (which previously had detections of 1,1,1-trichloroethane) and a location of manganese detected above the PRG
OW-39	DOB	X				
OW-40	SOB	X				Bent and not plumb
OW-41	DOB					Destroyed
OW-42	SOB					Destroyed
OW-43	SOB					Destroyed
OW-44	BR	X				
OW-45	DOB	X				
OW-46	SOB	X				
OW-47	DOB	X				
OW-48	SOB	X				
OW-49	BR	X	X			Close to off-site; downgradient of B&M Railroad Landfill
OW-50	DOB	X	X		X	Close to off-site; downgradient of B&M Railroad Landfill; check for 1,4-dioxane in a downgradient location
OW-51	SOB	X	X			Close to off-site; downgradient of B&M Railroad Landfill
OW-52	BR					Access to property denied, however well not seen over fence; may no longer be there
OW-53	DOB					Access to property denied, however well not seen over fence; may no longer be there
Existing Monitoring Wells – "MW" Series						
MW-200B	BR					Access to property denied, however well not seen over fence; may no longer be there
MW-200D	DOB					Access to property denied, however well not seen over fence; may no longer be there

TABLE 2-2. MONITORING WELLS AND PIEZOMETERS SELECTED FOR WATER LEVEL MEASUREMENTS AND CHEMICAL ANALYSIS

Well ID	Formation Screened	Water Level Measurement	Sample Analysis			Discussion/Rationale for Sample Location Selection
			VOCs, SVOCs, Metals	PCBs/ Pesticides	1,4-Dioxane	
MW-200S	SOB					Access to property denied, however well not seen over fence; may no longer be there
MW-201B	BR					Destroyed
MW-201D	DOB					Destroyed
MW-201S	SOB					Destroyed
MW-202B	BR	X	X			Check to see if contaminants migrated out of Oil/Sludge Recycling Area; well was cut down and made flush - required repair and redevelopment
MW-202D	DOB	X	X			Check to see if contaminants migrated out of Oil/Sludge Recycling Area; well was cut down and made flush - required repair and redevelopment
MW-202S	SOB	X	X	X		Check to see if contaminants migrated out of Oil/Sludge Recycling Area; check surficial aquifer for pesticide detections; well was cut down and made flush - required repair and redevelopment
MW-203B	BR	X	X			Check to see if contaminants migrated out of Oil/Sludge Recycling Area
MW-203D	DOB	X	X		X	1,1,1-Trichloroethane was previously detected here; well redeveloped
MW-203S	SOB	X	X	X	X	1,1,1-Trichloroethane was previously detected in MW-203D. Check the surficial aquifer in the area downgradient of the Oil/Sludge Recycling Area
MW-204B	BR	X				
MW-204D	DOB	X				
MW-204S	SOB	X	X			1,1,2,2-Tetrachloroethane and manganese were previously detected above the PRGs
MW-205B	BR	X				
MW-205D	DOB	X				
MW-205S	SOB	X	X	X		Check the surficial aquifer in the Locomotive Shop Disposal Areas
MW-206B	BR	X				
MW-206D	DOB	X	X		X	Check the deep aquifer in the Locomotive Shop Disposal Areas
MW-206S	SOB	X	X	X		Check the surficial aquifer in the Locomotive Shop Disposal Areas
MW-207B	BR	X	X	X	X	Location upgradient of Asbestos Landfill; previously showed detections of 1,1,1-trichloroethane and 1,2-dichloroethane
MW-208B	BR	X	X			Bis(2-ethylhexyl)phthalate was previously detected above the PRG
MW-208D	DOB	X	X			Bis(2-ethylhexyl)phthalate was previously detected above the PRG; well redeveloped
MW-208S	SOB	X	X			Arsenic and manganese were previously detected above the PRG
MW-209B	BR	X	X			1,2-Dichloroethane and manganese were previously detected above PRGs
MW-210B	BR	X				

TABLE 2-2. MONITORING WELLS AND PIEZOMETERS SELECTED FOR WATER LEVEL MEASUREMENTS AND CHEMICAL ANALYSIS

Well ID	Formation Screened	Water Level Measurement	Sample Analysis			Discussion/Rationale for Sample Location Selection
			VOCs, SVOCs, Metals	PCBs/ Pesticides	1,4-Dioxane	
MW-210S	SOB	X	X			Metal concentrations were higher than most other site locations
MW-211B	BR	X				
MW-211D	DOB	X	X			Metal concentrations were higher than most other site locations
MW-211S	SOB	X	X	X		Pesticides, manganese, and arsenic higher than most other site locations
MW-212B	BR	X	X			Manganese was previously detected above the PRG
MW-212D	DOB	X	X			1,1,2,2-Tetrachloroethane and manganese were previously detected above the PRGs
MW-212S	SOB	X				
MW-213B	BR	X	X		X	Multiple chlorinated VOCs were previously detected above PRGs; well redeveloped
MW-213D	DOB	X	X			Chlorinated VOCs and manganese were previously detected above PRGs
MW-213S	SOB	X	X	X		PCBs and pesticides were previously detected here
MW-214B	BR	X				
MW-214D	DOB	X				
MW-214S	SOB	X	X	X		The highest site PCB concentrations were detected here, along with exceedances of PRGs by pesticides, manganese, and arsenic
MW-215B	BR	X	X			Bis(2-ethylhexyl)phthalate was previously detected above the PRG
MW-215D	DOB	X				
MW-215S	SOB	X				
Existing Barcad Well – "MW" Series						
MW-01	BR		X			Check the most downgradient wells
MW-01A	DOB		X		X	Check the most downgradient wells; sample one deep overburden well for 1,4-dioxane
MW-01B	DOB		X			Check the most downgradient wells
MW-01C	SOB	X	X		X	Check the most downgradient wells; sample the shallow overburden well for 1,4-dioxane
New Monitoring Wells						
MW-301S	SOB	X	X	X	X	Check the surficial aquifer in the Oil/Sludge Recycling area for PCBs/pesticides; 1,1,1-trichloroethane was detected in the historical MW-201S location
MW-301D	DOB	X	X		X	1,1,1-Trichloroethane was detected in the historical MW-201S location
MW-301B	BR	X	X			Replace destroyed wells upgradient of the Oil/Sludge Recycling Area
MW-302S	SOB	X	X			Check the suficial aquifer in the area downgradient of the Oil/Sludge Recycling Area; screen at the water table to look for LNAPL

TABLE 2-2. MONITORING WELLS AND PIEZOMETERS SELECTED FOR WATER LEVEL MEASUREMENTS AND CHEMICAL ANALYSIS

Well ID	Formation Screened	Water Level Measurement	Sample Analysis			Discussion/Rationale for Sample Location Selection
			VOCs, SVOCs, Metals	PCBs/ Pesticides	1,4-Dioxane	
MW-303S	SOB	X	X			LNAPL was historically found in destroyed piezometer P-12. Check the suficial aquifer in this area and screen at the water table to look for LNAPL; likely location for LNAPL sample
MW-304S	SOB	X	X	X		Fill a data gap at the Contaminated Soils Area
MW-304D	DOB	X	X	X	X	Fill a data gap at the Contaminated Soils Area; sample for 1,4-dioxane in the deep overburden flowzone
MW-304B	BR	X	X	X		Fill a data gap at the Contaminated Soils Area
MW-305S	SOB	X	X	X	X	Fill a data gap upgradient of the Asbestos Landfill; 1,1,1-trichloroethane was previously detected in MW-207B
MW-305D	DOB	X	X	X	X	Fill a data gap upgradient of the Asbestos Landfill; 1,1,1-trichloroethane was previously detected in MW-207B
MW-306S	SOB	X	X			Fill a data gap upgradient of the Asbestos Landfill
MW-307S	SOB	X	X			Fill a data gap at the Asbestos Landfill
MW-307D	DOB	X	X			Fill a data gap at the Asbestos Landfill
MW-307B	BR	X	X			Fill a data gap at the Asbestos Landfill
MW-308B	BR	X	X	X	X	Check the bedrock aquifer below the Asbestos Landfill
Existing Piezometers – "P" Series						
P-1	SOB	X				
P-2	SOB	X				Found destroyed, but repaired
P-3	SOB					Destroyed
P-4	SOB					Destroyed
P-5	SOB	X				
P-9	SOB	X				
P-10	SOB	X				
P-11	SOB					Destroyed
P-12	SOB					Destroyed
P-17	SOB	X				
Existing Piezometers – "PZ" Series						
PZ-101	SOB					Can't locate; presumed destroyed
PZ-102	SOB	X				
PZ-103	SOB	X				Repaired, had been cut down and made flush

TABLE 2-2. MONITORING WELLS AND PIEZOMETERS SELECTED FOR WATER LEVEL MEASUREMENTS AND CHEMICAL ANALYSIS

Well ID	Formation Screened	Water Level Measurement	Sample Analysis			Discussion/Rationale for Sample Location Selection
			VOCs, SVOCs, Metals	PCBs/ Pesticides	1,4-Dioxane	
PZ-104A	SOB	X				
PZ-105A	SOB					Destroyed
PZ-106A	SOB	X				
PZ-104B	SOB	X				
PZ-105B	SOB	X				
PZ-106B	SOB	X				
PZ-107	SOB	X				
PZ-108	SOB	X				
PZ-109	SOB	X				
PZ-110	SOB	X				
PZ-111	SOB	X				
PZ-112	SOB	X				
PZ-113	SOB	X				
PZ-114	SOB	X				
PZ-115	SOB	X				Sample LNAPL

NOTES:

SOB - Shallow Overburden

DOB - Deep Overburden

BR - Bedrock

MCL - Maximum Contaminant Limit

PRG - Preliminary Remediation Goal

LNAPL - Light non-aqueous phase liquid

TABLE 3-1. WATER LEVEL MEASUREMENTS - COMPREHENSIVE ROUND - MARCH 2006 [1]

Well ID Number [2]	Formation Screened	Measurement Time (military)	PID TVOC (ppm)	Ground Surface Elevation (ft)	Top of PVC Elevation [3] (ft)	Depth to Water (ft TOPVC)	Groundwater Elevation (ft)
Monitoring Wells - "OW" Series							
OW-01	BR	16:05	0.1	111.26	113.52	4.22	109.30
OW-02	DOB	16:05	0	111.14	112.42	3.32	109.10
OW-03	SOB	16:05	0	111.26	113.19	4.13	109.06
OW-04	DOB	15:58	0	126.03	128.09	17.20	110.89
OW-05	BR	15:03	0	124.16	126.06	11.02	115.04
OW-06	DOB	15:05	0	124.17	126.54	10.81	115.73
OW-07	DOB	17:23	0	114.07	115.71	6.41	109.30
OW-08	SOB	17:27	0	113.04	115.76	6.45	109.31
OW-09	BR	10:05	364	114.39	116.33	5.43	110.90
OW-10	DOB	09:57	0	114.29	116.06	5.09	110.97
OW-11	SOB	10:03	0	114.43	116.2	5.25	110.95
OW-12	SOB	10:01	0	114.61	116.01	4.59	111.42
OW-13	DOB	17:02	0	118.17	119.88	8.74	111.14
OW-14	SOB	17:06	0	118.49	120.44	8.29	112.15
OW-15	DOB	17:15	0	116.44	117.06	5.81	111.25
OW-16	SOB	17:18	0	116.28	118.35	7.04	111.31
OW-17 [4]	BR	-	-	117.57	117.57	-	-
OW-18 [4]	DOB	-	-	115.25	116.15	-	-
OW-19 [4]	SOB	-	-	115.09	116.61	-	-
OW-20	DOB	10:39	0	114.37	116.87	5.94	110.93
OW-21	SOB	10:37	0	114.13	116.31	5.56	110.75
OW-22	BR	15:45	0	116.01	119.01	5.55	113.46
OW-23	DOB	15:43	0	116.53	118.72	5.19	113.53
OW-24	DOB	15:23	0	121.68	122.53	9.10	113.43
OW-25	DOB	12:35	0	115.47	117.24	4.71	112.53
OW-26	SOB	12:38	0	115.85	117.46	4.91	112.55
OW-27	SOB	12:40	0	115.2	117.09	4.55	112.54
OW-28	BR	14:09	0	115.96	117.76	4.96	112.80
OW-29	DOB	14:03	0	115.84	117.92	5.17	112.75
OW-30	SOB	14:06	0	116.74	116.74	4.02	112.72
OW-31	SOB	14:08	0	116.02	117.84	5.09	112.75
OW-32	DOB	12:40	0	115.35	115	2.43	112.57
OW-33	SOB	12:45	0	115.36	114.88	2.30	112.58

TABLE 3-1. WATER LEVEL MEASUREMENTS - COMPREHENSIVE ROUND - MARCH 2006 [1]

Well ID Number [2]	Formation Screened	Measurement Time (military)	PID TVOC (ppm)	Ground Surface Elevation (ft)	Top of PVC Elevation [3] (ft)	Depth to Water (ft TOPVC)	Groundwater Elevation (ft)
OW-34	BR	09:50	0	112.37	114.08	4.18	109.90
OW-35	DOB	09:50	0	112.53	114.19	4.34	109.85
OW-36	SOB	09:50	0	112.78	113.85	4.10	109.75
OW-37	BR	08:55	0	115.26	117.32	4.15	113.17
OW-38	DOB	08:57	0	115.8	117.12	3.96	113.16
OW-39	DOB	10:22	0	116.18	118	4.25	113.75
OW-40	SOB	10:25	0	116.24	117.44	3.82	113.62
OW-41 [5]	DOB	-	-	116.76	118.12	-	-
OW-42 [5]	SOB	-	-	116.52	117.59	-	-
OW-43 [5]	SOB	-	-	116.5	118.45	-	-
OW-44	BR	11:59	0	113.77	115.01	3.59	111.42
OW-45	DOB	11:57	0	113.91	114.95	3.52	111.43
OW-46	SOB	11:55	0	113.9	114.56	3.07	111.49
OW-47	DOB	08:45	0	115.78	117.69	4.99	112.70
OW-48	SOB	08:45	0	115.79	117.58	4.74	112.84
OW-49	BR	12:10	0	111.28	112.48	4.21	108.27
OW-50	DOB	12:10	0	111.08	112.3	4.03	108.27
OW-51	SOB	12:10	0	111.19	112.02	3.88	108.14
OW-52 [6]	BR	-	-	145.38	149.92	-	-
OW-53 [6]	DOB	-	-	145.44	150.03	-	-
Monitoring Wells - "MW" Series							
MW-200B [6]	BR	-	-	-	133.95	-	-
MW-200D [6]	DOB	-	-	-	133.88	-	-
MW-200S [6]	SOB	-	-	-	134.07	-	-
MW-201B [7]	BR	-	-	-	123.24	-	-
MW-201D [7]	DOB	-	-	-	123.41	-	-
MW-201S [7]	SOB	-	-	-	122.64	-	-
MW-202B	BR	14:45	0	115.66	115.23	2.37	112.86
MW-202D	DOB	14:35	0	115.49	115.12	2.41	112.71
MW-202S	SOB	14:30	0	115.68	115.35	2.61	112.74
MW-203B	BR	13:26	49.1	115.48	116.79	4.07	112.72
MW-203D	DOB	13:22	136	115.45	116.73	4.00	112.73
MW-203S	SOB	13:12	205	115.37	116.63	3.83	112.80
MW-204B	BR	11:26	0	129.79	132.2	16.52	115.68
MW-204D	DOB	11:33	0	129.84	132.48	14.08	118.40
MW-204S	SOB	11:28	0	130.03	132.39	13.68	118.71

TABLE 3-1. WATER LEVEL MEASUREMENTS - COMPREHENSIVE ROUND - MARCH 2006 [1]

Well ID Number [2]	Formation Screened	Measurement Time (military)	PID TVOC (ppm)	Ground Surface Elevation (ft)	Top of PVC Elevation [3] (ft)	Depth to Water (ft TOPVC)	Groundwater Elevation (ft)
MW-205B	BR	10:54	0	120.46	122.3	8.32	113.98
MW-205D	DOB	10:56	0	120.14	122.16	8.27	113.89
MW-205S	SOB	11:00	0	120.50	122.54	8.35	114.19
MW-206B	BR	12:11	0	118.66	120.76	7.6	113.16
MW-206D	DOB	12:09	0	118.50	121.1	8.02	113.08
MW-206S	SOB	12:06	0	118.48	120.85	7.75	113.10
MW-207	BR	12:42	0	115.03	116.63	4.50	112.13
MW-208B	BR	09:41	0	115.145	117.31	5.70	111.61
MW-208D	DOB	09:36	56.6	115.15	117.02	5.43	111.59
MW-208S	SOB	09:39	134	114.98	117.29	5.69	111.60
MW-209	BR	10:45	6.4	114.49	116.8	6.08	110.72
MW-210B	BR	16:37	0	113.81	116.24	6.14	110.10
MW-210S	SOB	16:37	0	113.7	115.89	6.01	109.88
MW-211B	BR	15:25	0	112.55	114.59	5.13	109.46
MW-211D	DOB	15:25	0	112.31	114.45	5.11	109.34
MW-211S	SOB	15:25	0	112.59	114.61	5.28	109.33
MW-212B	BR	15:42	0	112.34	114.61	5.21	109.40
MW-212D	DOB	15:42	0	112.37	114.18	4.77	109.41
MW-212S	SOB	15:42	0	112.22	114.28	4.90	109.38
MW-213B	BR	13:50	0	113.2	114.97	6.07	108.90
MW-213D	DOB	13:50	0	113.56	115.84	6.96	108.88
MW-213S	SOB	13:50	0	113.18	115.63	6.72	108.91
MW-214B	BR	14:40	0	111.11	113.44	4.45	108.99
MW-214D	DOB	14:40	0	110.86	113.23	4.29	108.94
MW-214S	SOB	14:40	0	111	113.33	4.37	108.96
MW-215B	BR	12:50	0	112.25	114.16	4.97	109.19
MW-215D	DOB	12:50	0	111.95	113.86	4.63	109.23
MW-215S	SOB	12:50	0	112.11	114.28	5.05	109.23
MW-301B	BR	13:52	18.5	121	123.75	9.45	114.30
MW-301D	DOB	13:41	17.3	121.18	123.64	10.04	113.60
MW-301S	SOB	13:45	31	121.02	123.53	9.92	113.61
MW-302S	SOB	13:02	6.6	115.7	117.72	5.17	112.55
MW-303S	SOB	13:00	0	116.58	116.34	3.09	113.25

TABLE 3-1. WATER LEVEL MEASUREMENTS - COMPREHENSIVE ROUND - MARCH 2006 [1]

Well ID Number [2]	Formation Screened	Measurement Time (military)	PID TVOC (ppm)	Ground Surface Elevation (ft)	Top of PVC Elevation [3] (ft)	Depth to Water (ft TOPVC)	Groundwater Elevation (ft)
MW-304B	BR	09:19	1	114.85	117.43	6.37	111.06
MW-304D	DOB	09:29	0.3	114.89	117.58	6.62	110.96
MW-304S	SOB	09:17	0.2	114.97	117.37	6.37	111.00
MW-305D	DOB	16:57	0	117.92	120.39	8.22	112.17
MW-305S	SOB	16:53	0	118.08	120.79	8.62	112.17
MW-306S	SOB	16:15	0	117.15	119.48	7.76	111.72
MW-307B	BR	17:25	2.1	115.12	118.06	8.39	109.67
MW-307D	DOB	17:25	28.3	115.52	117.94	8.47	109.47
MW-307S	SOB	17:25	3.7	115.58	118.56	9.06	109.50
MW-308B	BR	17:16	0	113.99	116.08	6.74	109.34
Barcad Well - "MW" Series							
MW-01	BR	11:22	0	108.07	111.15	3.80	107.35
MW-01A	DOB	11:20	0	108.07	110.90	3.67	107.23
MW-01B	DOB	11:20	0	108.07	110.90	3.66	107.24
MW-01C	SOB	11:22	0	108.07	109.89	2.65	107.24
Piezometers - "P" Series							
P-1	SOB	11:28	0	117.15	118.48	6.55	111.93
P-2	SOB	11:20	5	114.14	114.81	3.37	111.44
P-3 [8]	SOB	-	-	115.26	117.73	-	-
P-4 [9]	SOB	-	-	114.19	115.56	-	-
P-5	SOB	09:12	22.9	113.33	114.87	dry	114.87
P-9	SOB	09:08	0	116.15	118.26	6.46	111.80
P-10	SOB	15:15	0	122.37	124.85	10.92	113.93
P-11 [10]	SOB	-	-	116.81	119.82	-	-
P-12 [10]	SOB	-	-	117.56	118.85	-	-
P-17	SOB	09:04	0	115.53	117.13	4.69	112.44
P-18	SOB	13:00	0	124.37	125.57	dry	-
Piezometers - "PZ" Series							
PZ-101 [11]	SOB	-	-	114.54	116.58	-	-
PZ-102	SOB	13:35	27.3	121.21	123.56	9.83	113.73
PZ-103	SOB	14:19	0	115.51	115.19	2.43	112.76
PZ-104A	SOB	11:55	0	118.49	121.02	7.66	113.36
PZ-105A [11]	SOB	-	-	117.39	119.76	-	-
PZ-106A	SOB	12:20	0	115.25	117.59	4.64	112.95
PZ-104B	SOB	11:14	0	123.92	126.78	12.23	114.55
PZ-105B	SOB	10:35	0	119.51	122.26	8.68	113.58
PZ-106B	SOB	10:45	0	121.45	124.6	10.04	114.56
PZ-107	SOB	11:18	4.7	114.94	116.42	4.58	111.84
PZ-108	SOB	09:49	45.5	114.86	116.75	4.86	111.89
PZ-109	SOB	11:00	451	116.7	118.18	7.45	110.73
PZ-110	SOB	15:32	0	112.33	114.91	5.56	109.35
PZ-111	SOB	16:30	0	119.43	121.65	12.23	109.42
PZ-112	SOB	16:50	0	124.27	127.19	17.23	109.96
PZ-113	SOB	13:40	0	118.69	121.47	12.24	109.23
PZ-114	SOB	14:10	0	114.2	115.57	6.62	108.95
PZ-115	SOB	14:55	5.5	120.7	122.81	13.82	108.99

TABLE 3-1. WATER LEVEL MEASUREMENTS - COMPREHENSIVE ROUND - MARCH 2006 [1]

Staff Gauge ID Number	Formation Screened	Measurement Time (military)	Canal Bottom Elevation (ft)	Top of Gauge Elevation [12] (ft)	Top of Staff Elevation [12] (ft)	Depth to Water (ft TO Staff)	Surface Water Elevation (ft)
Staff Gauges [13]							
SG301	SW	12.23	111.29	114.32	115.64	2.95	112.69
SG302	SW	11:38	108.25	112.39	114.92	3.6	111.32
SG303	SW	10:20	109.31	113.09	113.4	2.66	110.74
SG304	SW	10:35	108.71	111.44	112.76	3.25	109.51
SG305	SW	11:35	105.23	108.28	108.6	2.58	106.02
SG306	SW	10:50	106.59	109.88	110.19	1.61	108.58
SG307	SW	10:20	108.12	110.75	110.04	1.23	108.81
SG308 [14]	SW	15:55	108.83	111.76	112.58	3.26	109.32
SG309	SW	17:45	107.67	110.72	111.53	2.41	109.12
SG310	SW	15:38	111.83	114.51	114.83	2.27	112.56

NOTES:

1. - Measurements were collected on March 31, 2006.
2. - Well clusters are separated by spaces (note some clusters contain OW and MW wells, which are sorted by series).
3. - Measuring Point (MP) elevations updated for wells OW #1, 5, 13, 15, 34, 41, and 49 (to 1995 survey data); and wells MW-202 B/D/S and OW #'s 7, 8, 32, and 33 (to 2006 survey data). Updates necessary due to changes/damage to well configuration.
4. - Wells could not be located
5. - OW-41 was found destroyed. OW-42 and 43 were not found, presumed destroyed.
6. - Wells are located on COPART Auto Auction property at which access was denied.
7. - Wells not found, likely destroyed.
8. - Piezometer destroyed January 2006
9. - Piezometer not found. Found PVC fragments, likely destroyed.
10. - Piezometer destroyed, as it has been paved over.
11. - Piezometer not found at location, presumed destroyed.
12. - Staff refers to staff gauge stake. Gauge refers to rulers attached to stake. Rulers are exactly 36" long.
13. - Staff Gauges were installed during March 2006 and surveyed during April 2006. Staff Gauge rulers: Left side counts 36 at top to 0 at bottom, Right side counts 0 at top and 36 at bottom.
14. - SG-302 has two gauges that overlap by 0.15 ft. For simplicity, the top gauge is ignored because water levels were below the top of the lower gauge.

DATUMS: NAD27 MA Geodetic Disc 16-E and 16-C, NGVD29, Massachusetts State Planer Feet.
NAD27 - North American Datum of 1927
NGVD29 - National Geodetic Vertical Datum of 1929

Well History - OW and P series installed by CDM, 1987; M&E installed series PZ-1994, MW-200s-1995, MW-300s-2006

ft - feet
ft TOPVC - feet from top of PVC pipe
ft TO Staff - feet from top of staff
ID - Identification
"-" - not applicable or no data available.
BR - Bedrock
DOB - Deep Overburden
SOB - Shallow Overburden
ppm - parts per million
PID - Photoionization Detector
TVOC - Total VOCs

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	MW-01 NX 12/14/2005	MW-01A NX 12/15/2005	MW-01B NX 12/14/2005	MW-01C NX 12/14/2005	MW-202B NX 2/20/2006	MW-202D NX 2/20/2006	MW-202S NX 2/20/2006	MW-203B NX 12/15/2005	MW-203D NX 12/15/2005	MW-203S NX 12/15/2005	MW-204S NX 12/15/2005	MW-205S NX 12/15/2005	MW-206D NX 12/13/2005	MW-206S NX 12/13/2005	MW-207B AV 12/13/2005	MW-208B NX 12/16/2005
VOCs (ug/L)																	
1,1,1-Trichloroethane	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.3	0.5 U
1,1,2,2-Tetrachloroethane	0.055	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.077 J	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
1,1-Dichloroethane	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.6	0.063 J
1,1-Dichloroethene	7	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	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	4.6	0.5 U
1,2,3-Trichlorobenzene	N/A	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	37	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	0.5 U
1,2-Dichloroethane	0.12	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	0.095 J	0.5 U	0.5 U	0.5 U	0.5 U	2.6	1.7
1,2-Dichloropropane	0.16	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	0.5 U	0.5 U	0.5 U	0.68	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	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
1,4-Dichlorobenzene	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.5 U
Acetone	550	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.35	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1 J	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 UJ
Benzene, (1-methylethyl)-	0.84	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	N/A	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.17	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U	120	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.10 J	0.5 U
Chlorobenzene	11	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U
Chloroethane	4.6	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Chloromethane	6.7	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
cis-1,2-Dichloroethene	6.1	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.36 J	0.5 U
cis-1,3-Dichloropropene	0.4	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 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	1000	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ
Ethylbenzene	130	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.98 J	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
Methyl acetate	610	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	1.8 J	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	11	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	1.4	0.5 U	0.5 U	0.5 U	0.44 J	0.69	0.15 J	0.5 U
Methylcyclohexane	71	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.25 J	0.5 U	0.86	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	4.3	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	0.065 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	12	0.5 U
Toluene	72	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	12	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.028	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	9.1	0.5 U
Trichlorofluoromethane	18	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.71	0.5 U
Vinyl Chloride	0.02	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	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
SVOCs (ug/L)																	
2,4-Dimethylphenol	73	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
2,4-Dinitrotoluene	7.3	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
2,6-Dinitrotoluene	3.6	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
2-Methylnaphthalene	0.62	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U
2-Methylphenol	180	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
3-Nitroaniline	1.1	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	21 U
4,6-Dinitro-2-methylphenol	0.36	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	0.11 J	21 U	21 U	20 U	20 U	20 U	21 U
4-Methylphenol	18	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Acenaphthene	37	0.2 U	0.21 U	0.044 J	0.2 U	0.2 U	0.2 U	0.25 J	0.23 U	0.035 J	0.21 U	0.038 J	0.033 J	0.2 U	0.2 U	0.2 U	0.21 U
Acenaphthylene	0.62	0.012 J	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U
Anthracene	180	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Atrazine	0.3	1 U	0.19 J	1.1 U	1 U	-- R	1.9 J	-- R	1.1 U	0.27 J	1 U	1.1 U	1.1 U	1 U	1 U	0.26 J	1 U
Benzaldehyde	360	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Benzo(g,h,i)perylene	0.62	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.035 J
Bis(2-chloroethyl)ether	0.01	0.05 U	0.53 U	0.57 U	0.05 U	0.5 U	0.5 U	0.5 UJ	0.57 U	0.53 U	0.52 U	0.53 U	0.53 U	0.05 U	0.05 U	0.40 J	0.52 U
Bis(2-ethylhexyl)phthalate	4.8	0.2 U	2.1 UJ	2.3 UJ	0.2 U	2 UJ	2 UJ	2 UJ	2.3 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	0.2 U	0.2 U	0.2 U	2.1 UJ
Butylbenzylphthalate	730	5 U	5.3 U	5.7 U	5 U	5 U	5 U	0.5 J	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 UJ
Dibenz(a,h)anthracene	0.0092	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.026 J
Dibenzofuran	1.2	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Dimethylphthalate	36000	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 UJ
Di-n-octylphthalate	150	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 UJ
Fluoranthene	150	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	0.13 J	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Fluorene	24	5 U	5.3 U	5.7 U	5 U	5 UJ	5 UJ	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Indeno(1,2,3-cd)pyrene	0.092	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.03 J
Isophorone	71	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Naphthalene	0.62	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.24 J	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U
N-Nitrosodiphenylamine	N/A	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Phenanthrene	0.62	0.012 J	0.21 U	0.012 J	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.015 J	0.21 U	0.21 U	0.011 J	0.2 U	0.2 U	0.2 U	0.21 U

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	MW-01 NX 12/14/2005	MW-01A NX 12/15/2005	MW-01B NX 12/14/2005	MW-01C NX 12/14/2005	MW-202B NX 2/20/2006	MW-202D NX 2/20/2006	MW-202S NX 2/20/2006	MW-203B NX 12/15/2005	MW-203D NX 12/15/2005	MW-203S NX 12/15/2005	MW-204S NX 12/15/2005	MW-205S NX 12/15/2005	MW-206D NX 12/13/2005	MW-206S NX 12/13/2005	MW-207B AV 12/13/2005	MW-208B NX 12/16/2005
Phenol	1100	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5.2 U
Pyrene	18	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.31	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U
Pesticides/PCBs (ug/L)																	
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	NA
alpha-Chlordane	0.19	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	NA
delta-BHC	0.011	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	NA
Dieldrin	0.0042	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	NA
Endosulfan II	22	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	NA
Endrin Ketone	1.1	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	NA
Metals (ug/L)																	
Aluminum	50	2660 J	5390 J	176	23.4 J	1380	70.2	88.4	52.2 J	42.3 J	22.6 J	171 J	50 UJ	50 UJ	21.2 J	1455 J	66.7
Antimony	1.5	2 U	2 U	2 U	2 U	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U
Arsenic	0.045	4.3	5.8	0.21 J	0.054 J	3.5	0.5 U	17.2	0.86	1.5	5.8	2.5	0.39 J	0.25 J	0.62	5.8 J	4.2
Barium	260	33.5	44	15.1	26.9	7.2 J	18	12.3	22.5	23.8	32.1	353	13.2	52.3	52.4	174	29.1
Beryllium	4	0.29 J	0.48 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.38 J	1 U	1 U	1 U	10 U	1 U
Cadmium	1.8	7.1	1.8	22.3	0.15 J	0.28 J	0.063 J	0.14 J	0.65 J	0.088 J	1 U	0.97 J	0.11 J	0.19 J	0.59 J	0.83 J	1 U
Calcium	N/A	14300	16800	17000	13400	13800	15800	19300	22400	30000	11700	126000	3120 J	29700	25800	1775000	43200
Chromium	11	2.1	8.2	0.9 J	2 U	0.81 J	0.21 J	1.8 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	0.31 J
Cobalt	73	1.8	2	1.2	1 U	1 U	1 U	1 U	0.51 J	0.92 J	2.8	224	0.59 J	1.8	0.68 J	10 U	5
Copper	150	24	11.7	14.6	2 U	2 U	2 U	2 U	2 U	2.1 U	2 U	4.4	7.6	2 U	2 U	20 U	2 UJ
Iron	300	10400 J	1990 J	20500	100 UJ	324 J	100 UJ	6360	30.6 J	568 J	20400 J	29800 J	280 J	100 UJ	226 UJ	1290 J	276
Lead	15	28.8	10.5	6	1 U	0.83 J	0.86 J	0.58 J	0.51 J	0.36 J	1 U	7.4	6.3	1 U	1 U	5.5 J	0.37 J
Magnesium	N/A	3740 J	3610 J	2950 J	1780 J	2290 J	2800 J	2830 J	3560 J	5900	2570 J	26200	5000 U	7030	5260	196000	8190
Manganese	50	287 J	93.9 J	290	106 J	81.8	12.2	220	29.7 J	256 J	1010 J	22400 J	397 J	57.8 J	532 J	431 J	281
Mercury	1.1	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.083 J	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.895 J	0.2 UJ
Nickel	73	7.9	6.6	9.2	1 U	1 U	1 UJ	1 U	1 U	1.1 U	1.4	41.1	4.7	2.1	3.2	10 U	1.4 J
Potassium	N/A	1720 J	2070 J	1920 J	1840 J	910 J	2160 J	3250 J	3440 J	3310 J	2920 J	8140	1080 J	5140	5010	39100	3630 J
Selenium	18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.61 J	5 U	5 U	5 U	50 U	5 UJ
Silver	18	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	23	1 U
Sodium	N/A	9660	18700	18500	11600	17600	16700	22300	12300	14600	38400	141000	32600	97200	97400	2955000	17400
Vanadium	3.6	2.4 J	8.2 J	0.94 J	0.19 UJ	2.2 J	0.2 J	0.42 J	0.75 J	0.14 J	0.89 J	0.41 J	0.046 J	0.073 J	0.15 J	2.4 J	0.31 J
Zinc	1100	88.2 J	23.4 J	69.2	4.1 UJ	7 U	2.4 U	4.4 U	29.7 J	8.2 UJ	4.6 UJ	21.1 J	8.1 UJ	9.8 UJ	3.1 UJ	27.5 UJ	4.6 J
1,4-Dioxanes (ug/L)																	
1,4-Dioxane	3	NA	2 U	NA	2 U	NA	NA	NA	NA	2.9	2 U	NA	NA	2 U	NA	1.3 J	NA

Notes
NX - Normal Field Sample
AV - Average of Field Duplicates
PAL - Project Action Limit
Shaded values indicate exceedance of PAL
NA - Not Analyzed

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	MW-208D NX 12/16/2005	MW-208S NX 12/16/2005	MW-209B NX 12/21/2005	MW-210S NX 12/20/2005	MW-211D NX 12/20/2005	MW-211S NX 12/20/2005	MW-212B NX 12/20/2005	MW-212D AV 12/20/2005	MW-213B NX 12/19/2005	MW-213D NX 12/19/2005	MW-213S AV 12/19/2005	MW-214S NX 12/19/2005	MW-215B NX 12/19/2005	MW-301B NX 2/23/2006	MW-301D NX 2/23/2006	MW-301S NX 2/23/2006
VOCs (ug/L)																	
1,1,1-Trichloroethane	200	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.055	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	70	0.39 J	0.5 U	1.3	0.5 U	0.5 U	0.5 U	1.4	0.5 U	1.8	1.4	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5	0.57 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	N/A	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	37	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.62 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.12	0.5 U	0.5 U	21	0.5 U	0.5 U	0.5 U	1.6	0.5 U	4.6	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	0.16	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	18	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	0.5 U	0.5 U	0.5 U	2	0.5 U	0.5 U	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	0.5 U
Acetone	550	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	0.35	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene, (1-methylethyl)-	0.84	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	N/A	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.17	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	11	0.5 U	0.5 U	0.5 U	5.7	1.2	0.5 U	0.5 U	0.5 U	1.2	0.68	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	4.6	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.74 U	1.5 U	0.5 U
Chloromethane	6.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	6.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.9	0.98	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	0.4	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	1000	0.5 U	0.5 U	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Dichlorodifluoromethane	1.4	0.5 UJ	0.5 UJ	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 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	130	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl acetate	610	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	11	0.5 U	0.5 U	2.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.21 J	3.4
Methylcyclohexane	71	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	4.3	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.1	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	72	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.2 J	0.13 J	0.5 U
trans-1,2-Dichloroethene	12	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.028	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	16	4.8	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	18	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.02	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	21	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	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
SVOCs (ug/L)																	
2,4-Dimethylphenol	73	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
2,4-Dinitrotoluene	7.3	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
2,6-Dinitrotoluene	3.6	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
2-Methylnaphthalene	0.62	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 U	0.077 J	0.23 U	0.2 U	0.2 U	0.2 U
2-Methylphenol	180	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
3-Nitroaniline	1.1	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	20 U	21 U	23 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	0.36	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	20 U	21 U	23 U	20 U	20 U	20 U
4-Methylphenol	18	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
Acenaphthene	37	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	0.94 J	1	0.23 U	0.2 U	0.2 UJ	0.2 U
Acenaphthylene	0.62	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5 UJ	0.015 J	0.23 U	0.2 U	0.2 U	0.2 U
Anthracene	180	5.4 U	5.6 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 U	5 UJ	0.74 J	0.49 J	5.7 U	5 U	5 U	5 U
Atrazine	0.3	1.1 U	1.1 U	-- R	5 U	5 U	5 U	5 U	5 U	1 U	5 U	5 U	0.36 J	1.1 U	-- R	-- R	-- R
Benzaldehyde	360	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	1.8 J	5.3 U	5.7 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	0.62	0.074 J	0.066 J	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.024 J	0.2 UJ	5 U	0.033 J	0.036 J	0.2 U	0.2 U	0.2 U
Bis(2-chloroethyl)ether	0.01	0.54 U	0.56 U	0.32 J	0.66 UJ	0.5 UJ	0.82 UJ	0.1 J	0.51 UJ	0.31 J	0.5 UJ	-- R	0.53 U	0.57 U	0.5 U	0.5 U	0.5 U
Bis(2-ethylhexyl)phthalate	4.8	2.2 UJ	2.2 UJ	0.5 UJ	2.6 UJ	2 UJ	3.3 UJ	2 UJ	1.9 J	2.1 UJ	2 UJ	5 U	2.1 UJ	2.3 UJ	2 UJ	2 UJ	2 UJ
Butylbenzylphthalate	730	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 UJ	5 U
Dibenz(a,h)anthracene	0.0092	0.05 J	0.05 J	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.019 J	0.1 UJ	5 U	0.024 J	0.027 J	0.1 U	0.1 U	0.1 U
Dibenzofuran	1.2	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	0.90 J	5.3 U	5.7 U	5 U	5 U	5 U
Dimethylphthalate	36000	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 UJ	5 U
Di-n-octylphthalate	150	5.4 U	5.6 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 U	5 UJ	5 UJ	5.3 U	5.7 U	5 U	5 UJ	5 U
Fluoranthene	150	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	0.98 J	5.7 U	5 U	5 U	5 U
Fluorene	24	5.4 U	5.6 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 U	5 UJ	1.2 J	1.8 J	5.7 U	5 UJ	5 UJ	5 UJ
Indeno(1,2,3-cd)pyrene	0.092	0.051 J	0.057 J	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.021 J	0.1 UJ	5 U	0.025 J	0.027 J	0.1 U	0.1 U	0.1 U
Isophorone	71	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
Naphthalene	0.62	0.22 U	0.22 U	0.2 UJ	0.065 J	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	-- R	0.2 U	0.23 U	0.2 U	0.2 U	0.2 U
N-Nitrosodiphenylamine	N/A	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	0.4 J	5.3 U	5.7 U	5 U	5 U	5 U
Phenanthrene	0.62	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.017 J	0.2 UJ	0.32 J	2.1	0.016 J	0.2 U	0.2 U	0.2 U

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	MW-208D NX 12/16/2005	MW-208S NX 12/16/2005	MW-209B NX 12/21/2005	MW-210S NX 12/20/2005	MW-211D NX 12/20/2005	MW-211S NX 12/20/2005	MW-212B NX 12/20/2005	MW-212D AV 12/20/2005	MW-213B NX 12/19/2005	MW-213D NX 12/19/2005	MW-213S AV 12/19/2005	MW-214S NX 12/19/2005	MW-215B NX 12/19/2005	MW-301B NX 2/23/2006	MW-301D NX 2/23/2006	MW-301S NX 2/23/2006
Phenol	1100	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5.3 U	5.7 U	5 U	5 U	5 U
Pyrene	18	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	0.12 J	0.46	0.23 U	0.2 U	0.2 UJ	0.2 U
Pesticides/PCBs (ug/L)																	
4,4'-DDT	0.2	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.013 J	0.01 UJ	NA	NA	NA	0.01 U
alpha-Chlordane	0.19	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	-- R	0.005 UJ	NA	NA	NA	0.005 UJ
delta-BHC	0.011	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	-- R	0.005 UJ	NA	NA	NA	0.005 U
Dieldrin	0.0042	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	-- R	0.01 UJ	NA	NA	NA	0.01 UJ
Endosulfan II	22	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.016 J	0.01 UJ	NA	NA	NA	0.01 U
Endrin Ketone	1.1	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	0.020 J	0.01 UJ	NA	NA	NA	0.01 U
Metals (ug/L)																	
Aluminum	50	50 U	89.8	50 U	50 U	50 U	50 U	25.5 J	50 U	610	56.8	50 U	50 U	117	3740	7070	46.4 J
Antimony	1.5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	0.045	0.11 J	101	4.4	66.1	281	99.5	32.9	20	5.1	0.42 J	1.7	88.8	4.2	2.7	7	22.1
Barium	260	36.2	38.9	36.4	40.4	44.1	32.1	13.8	62	16.3	57.3	837	41.2	3.9 J	23.9	84.8	104
Beryllium	4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.37 J	0.43 J	1 U
Cadmium	1.8	0.1 J	1 U	1 U	1 U	1 U	1 U	1 U	0.079 J	1.2	1 U	0.075 J	1 U	0.088 J	1 U	0.061 J	1 U
Calcium	N/A	20400	9980	62600	44900	80800	30700	55800	23750	44100	39600	125500	8000	16800	9010	13500	58800
Chromium	11	2 U	0.77 J	2 U	0.24 J	2 U	0.38 J	2 U	0.21 J	5.1	0.17 J	4.1	0.083 J	0.27 J	7	32.2	0.35 J
Cobalt	73	0.73 J	3.5	2.6	3.5	10.6	1.6	8	2.6	7.7	2.7	0.74 J	2.3	1 U	1.3	4.3	0.5 J
Copper	150	2 UJ	2.9 UJ	0.52 J	2 UJ	2 U	2 UJ	3	2 UJ	11.2 J	2.2 UJ	3.4 UJ	2 UJ	2 UJ	3.7 U	9.8	2 U
Iron	300	100 U	21400	2250	21100	53800	37000	2560	5105	2150	400	12000	57400	100 U	1570	13300	15400
Lead	15	1 UJ	1.9 J	1 U	1 UJ	1 U	1 UJ	0.37 J	0.38 J	17.3 J	0.32 J	3.35 J	0.36 J	0.37 J	2.8	4.3	1 U
Magnesium	N/A	3050 J	1740 J	22600	4480 J	12000	3600 J	5420	3770 J	6140	7280	23750	1360 J	4040 J	2640 J	5200	6590
Manganese	50	1690	1050	1290	2770	5140	1180	2770	1041	270	224	774	4550	30.7	130	238	599
Mercury	1.1	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
Nickel	73	1 J	3.3 J	0.35 J	2 J	4.4	1.3 J	3.4	1.4 J	5.5 J	3.1 J	9.7 J	1 J	0.44 J	4.1	10.9	1 UJ
Potassium	N/A	1560 J	2680 J	6020	6540 J	12600	5220 J	3290 J	3250 J	3460 J	4500 J	21800 J	878 J	2460 J	2060 J	6240	4300 J
Selenium	18	5 UJ	5 UJ	5 U	5 UJ	0.18 J	5 UJ	5 U	5 UJ	5 UJ	5 UJ	2.7 J	5 UJ	5 UJ	5 U	5 U	5 U
Silver	18	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	N/A	24000	13700	25500	11000	22800	4900 J	63500	73450	54700	79200	203500	8000	15900	22300	27900	15300
Vanadium	3.6	1 UJ	2 J	1 UJ	1 UJ	1 UJ	0.36 J	1 J	0.58 J	1.6 J	1 UJ	1 J	1 UJ	1.3 J	5.2	16	0.27 J
Zinc	1100	2 U	8.3 J	1.2 J	2 U	1.9 J	2 U	5.2	2.6 U	32.9 J	2.2 U	31 J	86.3 J	9.6 J	11.2	24.2	2 U
1,4-Dioxanes (ug/L)																	
1,4-Dioxane	3	NA	NA	NA	NA	NA	NA	NA	NA	1.5 J	NA	NA	NA	NA	NA	2 U	2 U

Notes
NX - Normal Field Sample
AV - Average of Field Duplicates
PAL - Project Action Limit
Shaded values indicate exceedance of PAL
NA - Not Analyzed

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	MW-302S NX 2/20/2006	MW-303S NX 2/20/2006	MW-304B NX 2/21/2006	MW-304D AV 2/21/2006	MW-304S NX 2/21/2006	MW-305D NX 2/21/2006	MW-305S NX 2/21/2006	MW-306S NX 2/23/2006	MW-307B NX 2/22/2006	MW-307D NX 2/22/2006	MW-307S NX 2/22/2006	MW-308B NX 2/22/2006	OW-01 NX 12/20/2005	OW-02 NX 12/20/2005	OW-07 NX 2/22/2006	OW-08 NX 2/22/2006
VOCs (ug/L)																	
1,1,1-Trichloroethane	200	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	0.5 U	0.5 U	0.072 J	0.5 U	0.5 U	0.5 U	22
1,1,2,2-Tetrachloroethane	0.055	0.5 U	0.5 U	0.5 U	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	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	70	0.5 U	0.5 U	0.47 J	0.5 U	0.5 U	3.5 J	0.066 J	0.5 U	1	3.8	0.089 J	2.7	1.4	0.5 U	0.34 J	38
1,1-Dichloroethene	7	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	N/A	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	37	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.52	0.5 U	0.5 U	0.5 U	0.95	0.5 U	0.38 J	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	0.12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.8	0.5 U	0.5 U	23	11	0.5 U	8.5	0.74	0.5 U	0.54 U	2.7 U
1,2-Dichloropropane	0.16	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.21 J
1,3-Dichlorobenzene	18	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	0.5 U	0.42 J	0.5 U	0.26 J	0.5 U	0.5 U	0.5 U	1.6
Acetone	550	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.4	5 U	5 U	5 U	5 U	5 U
Benzene	0.35	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.5 U	0.5 U	0.5 U	6.6 J	0.2 J	0.5 U	0.5 U	0.5 U	59
Benzene, (1-methylethyl)-	0.84	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	N/A	0.5 U	0.5 U	0.27 J	0.057 J	0.5 U	0.26 J	0.5 U	0.5 U	0.25 J	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.17	0.5 U	0.39 J	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.22 J	0.42 J	0.27 J	0.5 U	0.5 U	0.5 U	0.36 J
Chlorobenzene	11	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	46
Chloroethane	4.6	0.5 U	0.5 U	1.4 U	0.5 U	0.5 U	4.5 J	0.57 U	0.5 U	2.5	0.5 U	0.5 U	7.2	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	6.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3 J	0.5 U	0.5 U	0.5 U	1.2	0.22 J	7.1	0.5 U	0.5 U	1.6	0.58
cis-1,2-Dichloroethene	6.1	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 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	0.4	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	0.5 U	1.2 J	0.5 U	0.5 U	0.5 U	0.5 U	8.6
Cyclohexane	1000	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	0.5 U	0.5 U	0.19 J	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	1.4	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	0.5 U	3.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.39 J
Ethylbenzene	130	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	0.5 U	1.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.52
Methyl acetate	610	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	11	0.5 U	0.5 U	0.5 U	1.0	0.5 U	0.38 J	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.27 J	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	71	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	0.5 U	1.7 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	4.3	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.1	0.5 U	0.5 U	0.5 U	0.34 J	0.085 J	0.5 U	1.6	0.5 U	0.5 U	0.26 J	0.5 U	0.26 J	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	72	0.5 U	0.5 U	0.5 U	0.46 J	0.5 U	0.058 J	0.5 U	0.5 U	0.078 J	0.5 U	0.25 J	0.083 J	0.5 U	0.5 U	0.5 U	0.52
trans-1,2-Dichloroethene	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.52 J	0.5 U	0.5 U	0.5 U	0.14 J	0.5 U	2.1	0.5 U	0.5 U	0.58	0.5 U
Trichloroethene	0.028	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J	0.4 J	0.5 U	0.5 U	0.96	0.5 U	75	1.5	0.5 U	4.6	0.13 J
Trichlorofluoromethane	18	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.02	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	0.5 U	0.66	0.74	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	21	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	0.5 U	250 J	0.5 U	0.5 U	0.5 U	0.5 U	4.8
SVOCs (ug/L)																	
2,4-Dimethylphenol	73	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.52 J	5 U	5 U	1.1 J	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrotoluene	7.3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	3.6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	0.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U
2-Methylphenol	180	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.48 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	1.1	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	0.36	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Methylphenol	18	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.97 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acenaphthene	37	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U
Acenaphthylene	0.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U
Anthracene	180	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U
Atrazine	0.3	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	5 U	5 UJ	-- R	-- R
Benzaldehyde	360	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	0.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U
Bis(2-chloroethyl)ether	0.01	0.5 U	0.5 U	0.058 J	0.5 U	0.5 U	0.55	0.059 J	0.5 U	0.53	0.7	0.5 U	0.66	0.065 J	0.58 UJ	0.093 J	0.5 U
Bis(2-ethylhexyl)phthalate	4.8	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2.4 UJ	2.3 UJ	2 UJ	2 UJ
Butylbenzylphthalate	730	5 U	5 U	0.19 J	5 U	5 UJ	0.71 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibenz(a,h)anthracene	0.0092	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	0.12 UJ	0.12 UJ	0.1 U	0.1 U
Dibenzofuran	1.2	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dimethylphthalate	36000	5 U	5 U	5 UJ	5 U	5 UJ	5 U	5 U	0.54 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-n-octylphthalate	150	5 U	5 U	5 UJ	5 U	5 UJ	5 U	5 U	0.58 J	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U
Fluoranthene	150	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.64 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	24	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	0.56 J	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Indeno(1,2,3-cd)pyrene	0.092	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	0.12 UJ	0.12 UJ	0.1 U	0.1 U
Isophorone	71	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	0.62	0.2 U	0.2 U	0.028 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.53	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U
N-Nitrosodiphenylamine	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenanthrene	0.62	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.049 J	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	MW-302S NX 2/20/2006	MW-303S NX 2/20/2006	MW-304B NX 2/21/2006	MW-304D AV 2/21/2006	MW-304S NX 2/21/2006	MW-305D NX 2/21/2006	MW-305S NX 2/21/2006	MW-306S NX 2/23/2006	MW-307B NX 2/22/2006	MW-307D NX 2/22/2006	MW-307S NX 2/22/2006	MW-308B NX 2/22/2006	OW-01 NX 12/20/2005	OW-02 NX 12/20/2005	OW-07 NX 2/22/2006	OW-08 NX 2/22/2006
Phenol	1100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.7
Pyrene	18	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.24 UJ	0.23 UJ	0.2 U	0.2 U
Pesticides/PCBs (ug/L)																	
4,4'-DDT	0.2	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.0066 J	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	0.01 UJ
alpha-Chlordane	0.19	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	0.005 UJ
delta-BHC	0.011	NA	NA	0.005 UJ	0.005 UJ	0.0054	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	0.005 UJ
Dieldrin	0.0042	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.013	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	0.01 UJ
Endosulfan II	22	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	0.01 UJ
Endrin Ketone	1.1	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	0.01 UJ
Metals (ug/L)																	
Aluminum	50	275	77.6	11.2 J	151	50 U	25.7 J	55.8	13.3 J	149	42.9 J	74.9	87.5	50 U	50 U	60.6	28 J
Antimony	1.5	3.7 J	2.6 J	2 UJ	3.3 J	4.2 J	2 UJ	2 UJ	2 U	2 UJ	2 UJ	2 UJ	2 UJ	2 U	2 U	2 UJ	2 UJ
Arsenic	0.045	1.1	16.1	6.4	0.56	0.5 U	3.8	3.3	14.5	10.6	2.8	8.6	1.4	2.4	11.9	7.2	14.4
Barium	260	43.4	75.4	14.5	20	12.2	22.9	68.2	15.5	11.1	35.8	41.3	26.5	2.6 J	26.1	32.4	23.7
Beryllium	4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	1.8	0.061 J	1 U	1 U	0.077 J	0.082 J	0.15 J	1 U	1 U	1 U	1 U	1 U	0.12 J	0.18 J	0.38 J	1 U	1 U
Calcium	N/A	31200	26000	87000	13750	6510	46100	97300	62400	14000	41300	86800	45900	71300	36700	44200	37700
Chromium	11	0.5 J	0.31 J	2 U	0.33 J	2 U	0.22 J	0.25 J	0.36 J	2 U	2 U	0.45 J	0.29 J	0.095 J	0.15 J	2 U	0.48 J
Cobalt	73	1 U	1.1 U	1 U	1 U	1 U	2 U	2.7	0.23 J	1 U	4.5	1.3 U	3.1	0.4 J	2.2	1.2 U	1 U
Copper	150	2.7 U	2 U	2 U	2 U	2 U	5 U	2.5 U	2.1 U	2 U	3.1 U	2 U	2.7 U	2 UJ	2 UJ	2.2 U	2 U
Iron	300	881	12100	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	645	100 UJ	100 UJ	161 J	100 UJ	100 U	1280	1270	3160
Lead	15	2.5	7.9	0.16 J	0.35 J	1 U	1 U	1 U	1 U	0.13 J	1 U	0.12 J	0.15 J	1 UJ	0.24 J	0.25 J	0.11 J
Magnesium	N/A	1040 J	2070 J	10900	2300 J	1040 J	6030	4140 J	2010 J	4080 J	8530	4940 J	7890	6700	5110	7870	6580
Manganese	50	45.1	346	75.7	138	6.6	6440	1730	205	37.3	133	409	149	158	2320	2110	567
Mercury	1.1	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
Nickel	73	1.9 U	1 U	2.2 U	1.4 U	1 U	4.6	2.8	1 UJ	1 U	3.6	11.8	3.9	1.2 J	2.5 J	1 U	1 U
Potassium	N/A	1880 J	3130 J	9100 J	3310 J	1110 J	7940 J	4800 J	2830 J	2720 J	5680 J	3820 J	6620 J	2090 J	3050 J	4600 J	5850 J
Selenium	18	5 U	5 U	5 U	0.93 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U
Silver	18	1 U	1 U	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Sodium	N/A	9470	15200	193000	18150	5090	195000	22100	8640	26400	135000	7680	104000	36000	77700	48400	39500
Vanadium	3.6	0.46 J	0.27 J	0.38 J	0.37 J	1 U	0.41 J	3.3 J	0.38 J	0.53 J	0.49 J	12.4	0.33 J	0.31 J	0.51 J	0.31 J	0.43 J
Zinc	1100	10	24.3	2 U	4.8 U	62.2	2.1 U	2 U	2 U	2 U	2 U	3 U	3.6 U	2 U	2 U	2 U	2 U
1,4-Dioxanes (ug/L)																	
1,4-Dioxane	3	NA	NA	NA	2 U	NA	1.7 J	2 U	NA	NA	NA	NA	2	NA	NA	NA	NA

Notes
NX - Normal Field Sample
AV - Average of Field Duplicates
PAL - Project Action Limit
Shaded values indicate exceedance of PAL
NA - Not Analyzed

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	OW-09 NX 12/15/2005	OW-10 NX 12/15/2005	OW-12 NX 12/15/2005	OW-20 NX 12/21/2005	OW-25 NX 12/13/2005	OW-26 NX 12/13/2005	OW-35 NX 12/21/2005	OW-37 NX 12/21/2005	OW-38 NX 12/21/2005	OW-49 NX 12/14/2005	OW-50 NX 12/14/2005	OW-51 NX 12/14/2005
VOCs (ug/L)													
1,1,1-Trichloroethane	200	0.66	0.64	0.5 U	9.1	0.94	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.055	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	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	70	4.8	4.7	0.5 U	11	1.6	0.28 J	0.5 U	1.7	15	1.3	0.23 J	0.5 U
1,1-Dichloroethene	7	0.5 U	0.5 U	0.5 U	4.8 J	0.5 U	0.5 U	0.5 U	0.26 J	1.7	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	N/A	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	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	37	1.4	1.5	0.5 U	0.46 J	0.29 J	0.41 J	0.5 U	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U
1,2-Dichloroethane	0.12	2.6	2.6	0.5 U	0.66	1.3	0.5 U	0.5 U	0.47 J	0.5 U	5	0.5 U	0.5 U
1,2-Dichloropropane	0.16	0.5 U	0.5 U	0.5 U	0.56	0.81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	18	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	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5	0.32 J	0.31 J	0.5 U	0.6	0.5 U	0.27 J	0.5 U	0.5 U	1.7	0.14 J	0.5 U	0.5 U
Acetone	550	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.35	0.5 U	0.5 U	0.37 J	0.26 J	0.5 U	0.5 U	0.5 U	0.5 U	0.63	0.5 U	0.5 U	0.5 U
Benzene, (1-methylethyl)-	0.84	0.5 U	0.5 U	0.34 J	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
Bromochloromethane	N/A	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	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.17	0.5 U	0.5 U	0.5 U	7.8 J	0.5 U	0.5 U	0.5 U	0.56	37	0.5 U	0.5 U	0.5 U
Chlorobenzene	11	0.86	0.87	0.5 U	0.5 U	0.17 J	0.41 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	4.6	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	0.5 U	0.5 U	0.5 U
Chloromethane	6.7	0.5 U	0.5 U	0.5 U	3.2	0.5 U	0.5 U	0.5 U	0.11 J	0.48 J	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	6.1	0.87	0.85	0.24 J	0.5 UJ	0.6	0.31 J	0.5 U	0.5 U	0.5 U	2.4	0.5 U	0.5 U
cis-1,3-Dichloropropene	0.4	0.5 U	0.5 U	0.5 UJ	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 UJ
Cyclohexane	1000	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	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	1.4	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	0.5 U	0.5 U	0.5 U
Ethylbenzene	130	0.5 U	0.5 U	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U
Methyl acetate	610	0.5 UJ	0.5 UJ	0.5 UJ	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
Methyl tert-butyl ether	11	0.089 J	0.5 U	0.093 J	0.98	0.25 J	0.5 U	0.5 U	0.5 U	0.11 J	0.26 J	1.4	0.62
Methylcyclohexane	71	0.5 U	0.5 U	0.16 J	0.76	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	4.3	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	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.1	3.2	3.2	0.5 U	39	4.4	0.5 U	0.5 U	1.3	14	0.5 U	0.5 U	0.5 U
Toluene	72	0.5 U	0.5 U	0.32 J	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
trans-1,2-Dichloroethene	12	0.093 J	0.076 J	0.5 U	0.21 J	0.5 U	0.096 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	0.028	2.2	2.2	0.5 U	7 J	3.2	0.08 J	0.5 U	0.28 J	2	7.8	0.18 J	0.5 U
Trichlorofluoromethane	18	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.02	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	0.5 U	0.5 U	0.5 U
Xylene (total)	21	0.5 U	0.5 U	1.7	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
SVOCs (ug/L)													
2,4-Dimethylphenol	73	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrotoluene	7.3	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	6.7	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	3.6	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	1.3 J	5 U	5 U	5 U	5 U
2-Methylnaphthalene	0.62	0.23 U	0.23 U	1.2	0.1 J	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
2-Methylphenol	180	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	1.1	23 U	23 U	23 U	20 U	20 U	20 U	20 U	6.2 J	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	0.36	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Methylphenol	18	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acenaphthene	37	0.044 J	0.035 J	0.23 U	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Acenaphthylene	0.62	0.23 U	0.23 U	0.23 U	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Anthracene	180	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Atrazine	0.3	1.1 U	0.13 J	1.1 U	-- R	0.28 J	1 U	-- R	-- R	-- R	1 U	1 U	1 U
Benzaldehyde	360	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	2 J	5 U	5 U	5 U	5 U
Benzo(g,h,i)perylene	0.62	0.23 U	0.23 U	0.23 U	0.2 UJ	0.097 J	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Bis(2-chloroethyl)ether	0.01	0.44 J	0.058 J	0.57 U	0.5 UJ	0.02 J	0.11 J	0.5 UJ	0.5 UJ	0.5 UJ	0.21 J	0.034 J	0.058 J
Bis(2-ethylhexyl)phthalate	4.8	2.3 UJ	2.3 UJ	2.3 UJ	0.5 UJ	0.2 U	0.38 U	0.5 UJ	0.5 UJ	0.5 UJ	0.2 U	0.2 U	0.23 U
Butylbenzylphthalate	730	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibenz(a,h)anthracene	0.0092	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Dibenzofuran	1.2	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dimethylphthalate	36000	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.015 J	5 U
Di-n-octylphthalate	150	5.7 U	5.7 U	5.7 U	5 UJ	5 U	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U
Fluoranthene	150	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	24	5.7 U	5.7 U	0.46 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	0.092	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Isophorone	71	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	0.77 J	5 U	5 U	5 U	5 U
Naphthalene	0.62	0.23 U	0.23 U	1.1	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
N-Nitrosodiphenylamine	N/A	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenanthrene	0.62	0.23 U	0.23 U	0.23 U	0.04 J	0.083 J	0.031 J	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U

TABLE 4-1. GROUNDWATER SAMPLING RESULTS - WINTER 2005-2006 - DETECTS ONLY

ANALYTE	PAL	OW-09 NX 12/15/2005	OW-10 NX 12/15/2005	OW-12 NX 12/15/2005	OW-20 NX 12/21/2005	OW-25 NX 12/13/2005	OW-26 NX 12/13/2005	OW-35 NX 12/21/2005	OW-37 NX 12/21/2005	OW-38 NX 12/21/2005	OW-49 NX 12/14/2005	OW-50 NX 12/14/2005	OW-51 NX 12/14/2005
Phenol	1100	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	18	0.039 J	0.23 U	0.23 U	0.2 UJ	0.095 J	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)													
4,4'-DDT	0.2	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
alpha-Chlordane	0.19	0.0051 J	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
delta-BHC	0.011	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
Dieldrin	0.0042	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Endosulfan II	22	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Endrin Ketone	1.1	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Metals (ug/L)													
Aluminum	50	3200	1870	419	50 U	61.7 J	81.7 J	50 U	50 U	50 U	50 UJ	643 J	23.2 J
Antimony	1.5	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	0.045	1.5	0.25 J	13.6	10.7	2 J	24.7	8.3	7.4	8.1	0.48 J	6.9	23.1
Barium	260	105	62.4	11.8	69.8	313	5.1 J	21.8	107	19.8	36.3	25.8	30
Beryllium	4	3.1 J	1.6 J	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 J	1 U
Cadmium	1.8	18.3	0.96 J	0.051 J	0.056 J	1.3 J	1 U	1 U	1 U	0.41 J	0.43 J	0.18 J	1 U
Calcium	N/A	304000	51900	25700	34700	563000	19800	43300	105000	25200	52100	22600	25000
Chromium	11	1.4 J	0.32 J	0.16 J	2 U	20 U	1.1 J	2 U	2 U	2 U	2 U	1.4 J	2 U
Cobalt	73	341	41.5	0.28 J	24.7	12.2	1 U	0.53 J	5.3	1.5	2.1	4.4	2
Copper	150	135 J	8.6 J	2 UJ	1 J	20 U	2 U	0.77 J	0.66 J	0.66 J	2 U	3.2 U	2 U
Iron	300	770	443	293	9160	489 J	100 UJ	536	8000	619	606 J	1230 J	8750 J
Lead	15	6.1 J	0.6 J	1 UJ	1 U	10 U	0.78 J	0.73 J	1 U	1 U	1 U	1.1	1 U
Magnesium	N/A	60800	9500	5000 U	5350	74700	1190 J	12500	19700	5440	10600	4550 J	4460 J
Manganese	50	22600	2820	82.2	3480	5970 J	7.6 J	327	1390	1700	516 J	1350 J	1470 J
Mercury	1.1	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
Nickel	73	286 J	36.2 J	2.2 J	11.4	10 U	1.6	1	1.4	0.48 J	1.7	1.7	1 U
Potassium	N/A	17900 J	3150 J	18800 J	6660	47300	3620 J	3280 J	11400	3270 J	4600 J	4150 J	3600 J
Selenium	18	5 UJ	0.15 J	5 UJ	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Silver	18	0.63 J	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	N/A	311000	68800	39800	111000	4070000	141000	15400	122000	23200	34400	36000	41700
Vanadium	3.6	1.4 J	1 UJ	1.1 J	1 UJ	1.4 J	0.64 J	1 UJ	1 UJ	0.35 J	0.25 J	2.6 J	1.2 J
Zinc	1100	357 J	80.9 J	2 U	4.6	45.9 UJ	10.2 UJ	2.3	2.4	2.9	6.4 UJ	14.8 J	8.7 UJ
1,4-Dioxanes (ug/L)													
1,4-Dioxane	3	NA	NA	NA	NA	NA	NA	NA	NA	2 U	NA	0.59 J	NA

Notes
NX - Normal Field Sample
AV - Average of Field Duplicates
PAL - Project Action Limit
Shaded values indicate exceedance of PAL
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-01A NX 4/10/1995	MW-01A NX 7/28/1995	MW-01A NX 12/15/2005	MW-01C NX 4/10/1995	MW-01C NX 7/28/1995	MW-01C NX 12/14/2005	MW-202B NX 3/30/1995	MW-202B NX 7/19/1995	MW-202B NX 2/20/2006	MW-202D NX 3/29/1995	MW-202D AV 7/19/1995	MW-202D NX 2/20/2006	MW-202S NX 3/29/1995	MW-202S NX 7/19/1995	MW-202S NX 2/20/2006
VOCs (ug/L)															
1,1,1-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.077 J
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 UJ	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.27 J
1,2-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.16 J
1,4-Dichlorobenzene	10 UJ	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	7.5
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Acetone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	1.1 J
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ
Bromoform	10 UJ	10 U	0.5 U	10 UJ	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromomethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.16 J	10 U	10 U	0.5 U	10 U	10 U	120
Chlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	3 J	10 U	0.5 U
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.23 J
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.98 J
Methyl acetate	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.16 J	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.25 J
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.29 J
SVOCs (ug/L)															
1,1'-Biphenyl	NA	NA	5.3 UJ	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5.3 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 UJ
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5.3 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2,4,5-Trichlorophenol	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
2,4,6-Trichlorophenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2,4-Dichlorophenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2,4-Dimethylphenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 UJ
2,4-Dinitrophenol	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
2,4-Dinitrotoluene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2,6-Dinitrotoluene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-01A NX 4/10/1995	MW-01A NX 7/28/1995	MW-01A NX 12/15/2005	MW-01C NX 4/10/1995	MW-01C NX 7/28/1995	MW-01C NX 12/14/2005	MW-202B NX 3/30/1995	MW-202B NX 7/19/1995	MW-202B NX 2/20/2006	MW-202D NX 3/29/1995	MW-202D AV 7/19/1995	MW-202D NX 2/20/2006	MW-202S NX 3/29/1995	MW-202S NX 7/19/1995	MW-202S NX 2/20/2006
2-Chloronaphthalene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2-Chlorophenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2-Methylnaphthalene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 UJ	10 U	0.2 U	10 UJ	10 U	0.2 UJ
2-Methylphenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
2-Nitroaniline	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
2-Nitrophenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
3,3'-Dichlorobenzidine	10 U	10 U	5.3 U	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
3-Nitroaniline	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
4,6-Dinitro-2-methylphenol	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
4-Bromophenyl-phenylether	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
4-Chloro-3-methylphenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
4-Chloroaniline	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
4-Chlorophenyl-phenylether	10 U	10 U	5.3 UJ	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
4-Methylphenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 UJ
4-Nitroaniline	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
4-Nitrophenol	25 U	25 U	21 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 UJ
Acenaphthene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.25 J
Acenaphthylene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 UJ
Acetophenone	NA	NA	5.3 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 UJ
Anthracene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 UJ	10 UJ	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 UJ
Atrazine	NA	NA	0.19 J	NA	NA	1 U	NA	NA	R	NA	NA	1.9 J	NA	NA	R
Benzaldehyde	NA	NA	5.3 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 UJ
Benzo(a)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 UJ
Benzo(a)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 UJ
Benzo(b)fluoranthene	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 UJ
Benzo(g,h,i)perylene	10 UJ	10 U	0.21 U	10 UJ	10 U	0.2 U	10 U	10 U	0.2 U	10 UJ	10 U	0.2 U	10 UJ	10 U	0.2 UJ
Benzo(k)fluoranthene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 UJ
Bis(2-chloroethoxy)methane	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Bis(2-chloroethyl)ether	10 U	10 U	0.53 U	10 U	10 U	0.05 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ
Bis(2-ethylhexyl)phthalate	10 U	10 U	2.1 UJ	10 U	10 U	0.2 U	10 U	10 U	2 UJ	10 U	10 U	2 UJ	10 U	3 J	2 UJ
Butylbenzylphthalate	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	0.5 J
Caprolactam	NA	NA	5.3 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 UJ
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ
Dibenz(a,h)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 UJ
Dibenzofuran	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Diethylphthalate	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Dimethylphthalate	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Di-n-butylphthalate	10 U	10 U	5.3 UJ	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Di-n-octylphthalate	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Fluoranthene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Fluorene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ
Hexachlorobenzene	10 U	10 U	1.1 U	10 U	10 U	1 U	10 U	10 U	1 U	10 U	10 U	1 U	10 U	10 U	1 UJ
Hexachlorobutadiene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Hexachlorocyclopentadiene	10 U	10 U	5.3 U	10 U	10 U	5 U	R	10 UJ	5 U	10 UJ	10 UJ	5 U	10 UJ	10 UJ	5 UJ
Hexachloroethane	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 UJ
Isophorone	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Naphthalene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.24 J
Nitrobenzene	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
N-Nitroso-di-n-propylamine	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
N-Nitrosodiphenylamine	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Pentachlorophenol	25 U	25 U	1.1 U	25 U	25 U	1 U	25 U	25 U	1 U	25 U	25 U	1 U	25 U	25 U	1 UJ
Phenanthrene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 UJ
Phenol	10 U	10 U	5.3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ
Pyrene	10 U	10 U	0.21 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 UJ
Pesticides/PCBs (ug/L)															
4,4'-DDD	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.0008 J	0.005 U	0.01 UJ
4,4'-DDE	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.006 U	0.005 U	0.01 UJ
4,4'-DDT	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.006 U	0.005 U	0.01 UJ
Aldrin	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
alpha-BHC	0.003 U	0.003 UJ	NA	0.003 U	0.003 UJ	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-01A NX 4/10/1995	MW-01A NX 7/28/1995	MW-01A NX 12/15/2005	MW-01C NX 4/10/1995	MW-01C NX 7/28/1995	MW-01C NX 12/14/2005	MW-202B NX 3/30/1995	MW-202B NX 7/19/1995	MW-202B NX 2/20/2006	MW-202D NX 3/29/1995	MW-202D AV 7/19/1995	MW-202D NX 2/20/2006	MW-202S NX 3/29/1995	MW-202S NX 7/19/1995	MW-202S NX 2/20/2006
alpha-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
beta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
delta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
Dieldrin	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.006 U	0.005 U	0.01 UJ
Endosulfan I	0.003 UJ	0.003 UJ	NA	0.003 UJ	0.003 UJ	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
Endosulfan II	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.006 U	0.005 U	0.01 UJ
Endosulfan Sulfate	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.006 U	0.005 U	0.01 UJ
Endrin	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.005 U	0.006 U	NA	0.006 U	0.005 U	0.01 UJ
Endrin Aldehyde	0.009 U	0.009 U	NA	0.008 U	0.009 U	NA	0.008 U	0.009 U	NA	0.0009 J	0.009 U	NA	0.009 U	0.008 U	0.01 UJ
Endrin Ketone	0.006 U	0.007 U	NA	0.006 U	0.007 U	NA	0.006 U	0.007 U	NA	0.006 U	0.007 U	NA	0.007 U	0.006 U	0.01 UJ
gamma-BHC(Lindane)	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
gamma-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
Heptachlor	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
Heptachlor Epoxide	0.003 UJ	0.003 UJ	NA	0.003 UJ	0.003 UJ	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
Methoxychlor	0.03 U	0.03 U	NA	0.03 U	0.03 U	NA	0.03 U	0.04 U	NA	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 UJ
Toxaphene	0.32 U	0.33 U	NA	0.32 U	0.33 U	NA	0.31 U	0.35 U	NA	0.31 U	0.33 U	NA	0.34 U	0.31 U	0.5 UJ
Aroclor-1016	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.06 U	0.05 U	0.1 U
Aroclor-1221	0.11 U	0.11 U	NA	0.11 U	0.11 U	NA	0.1 U	0.12 U	NA	0.1 U	0.11 U	NA	0.11 U	0.1 U	0.2 U
Aroclor-1232	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.06 U	0.05 U	0.1 U
Aroclor-1242	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.06 U	0.05 U	0.1 U
Aroclor-1248	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.06 U	0.05 U	0.1 U
Aroclor-1254	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.06 U	0.05 U	0.1 U
Aroclor-1260	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA	0.02 J	0.05 U	0.1 U
Metals (ug/L)															
Aluminum	25 U	77.3 U	5390 J	246	235 U	23.4 J	178 U	649	1380	25 U	131 U	70.2	157 U	234 U	88.4
Antimony	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 UJ	3 U	1.9 U	2.0 UJ	3 U	1.9 U	2.0 UJ
Arsenic	8 U	2.7 U	5.8	8 U	2.7 U	0.054 J	8 U	3.3	3.5	8 U	2.7 U	0.50 U	8 U	2.7 U	17.2
Barium	5.9	5.9 U	44.0	35.9	27 U	26.9	5.1 U	7.5 U	7.2 J	31.7	29.85	18.0	11.7	12.6	12.3
Beryllium	1 U	0.17 U	0.48 J	1 U	0.24 U	1.0 U	1 U	0.53 U	1.0 U	1 U	0.47 U	1.0 U	1 U	0.53 U	1.0 U
Cadmium	2 U	0.5 U	1.8	2 U	0.5 U	0.15 J	2 U	0.5 U	0.28 J	2 U	0.5 U	0.063 J	2 U	0.5 U	0.14 J
Calcium	10600	10800	16800	8230	6280	13400	12000	11000	13800	24800	21050	15800	12500	11100	19300
Chromium	5 U	0.7 U	8.2	5 U	0.7 U	2.0 U	5 U	1.1 U	0.81 J	5 U	0.7 U	0.21 J	5 U	1.2 U	1.8 J
Cobalt	2 U	0.5 U	2.0	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U	2 U	1.3 U	1.0 U	2 U	0.8 U	1.0 U
Copper	3 U	0.5 U	11.7	3 U	0.5 U	2.0 U	3 U	1.4 U	2.0 U	3 U	0.83 U	2.0 U	3 U	1.6 U	2.0 U
Iron	30 U	14.5 U	1990 J	205	39.6 U	100 UJ	158	403	324 J	30 U	15.075 J	100 UJ	1950	1780	6360
Lead	3 UJ	1.6 U	10.5	3 UJ	1.6 U	1.0 U	3 UJ	1.6 UJ	0.83 J	3 UJ	1.6 UJ	0.86 J	3 UJ	1.6 UJ	0.58 J
Magnesium	2220	2200	3610 J	1330	953	1780 J	1980	1760	2290 J	3630	3215	2800 J	4550	3680	2830 J
Manganese	1.9	1.8 U	93.9 J	218	184	106 J	64.5	210	81.8	262	65.8	12.2	72.5	56.4	220
Mercury	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	10 U	2.4 U	6.6	10 U	2.4 U	1.0 U	10 U	2.4 U	1.0 U	10 U	3.9	1.0 UJ	10 U	2.4 U	1.0 U
Potassium	1190	1310	2070 J	589	602 U	1840 J	1210	1260	910 J	3700	3200	2160 J	3120	2990	3250 J
Selenium	5 U	3.4 U	5.0 U	5 U	3.4 U	5.0 U	5 UJ	3.4 U	5.0 U	5 UJ	3.4 U	5.0 U	5 UJ	3.4 U	5.0 U
Silver	R	0.6 U	1.0 U	R	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U
Sodium	11700	13700 J	18700	9430	8210 J	11600	17300	18400	17600	28900	30700	16700	15900	14600	22300
Thallium	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U
Vanadium	2 U	0.6 U	8.2 J	2 U	0.6 U	0.19 UJ	2 U	1.1	2.2 J	2 U	0.59 J	0.20 J	2 U	1.5	0.42 J
Zinc	4.8	1.2 U	23.4 J	4 U	1.2 U	4.1 UJ	4 U	44.9	7.0 U	4 U	11.5 U	2.4 U	4 U	10 U	4.4 U
1,4-Dioxanes (ug/L)															
1,4-Dioxane	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-203B NX 3/30/1995	MW-203B NX 7/19/1995	MW-203B NX 12/15/2005	MW-203D NX 3/29/1995	MW-203D NX 7/19/1995	MW-203D NX 12/15/2005	MW-203S NX 3/29/1995	MW-203S NX 7/19/1995	MW-203S NX 12/15/2005	MW-204S NX 3/31/1995	MW-204S NX 7/21/1995	MW-204S NX 12/15/2005	MW-205S NX 4/3/1995	MW-205S NX 7/21/1995	MW-205S NX 12/15/2005
VOCs (ug/L)															
1,1,1-Trichloroethane	10 U	10 U	0.5 U	4 J	6 J	0.16 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	3 J	0.5 U	10 U	10 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethane	10 U	10 U	0.5 U	3 J	3 J	1.5	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.095 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	16	5 U	10 UJ	10 U	5 U
Acetone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromoform	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.62 U
Bromomethane	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	3 J	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Methyl acetate	NA	NA	0.5 UJ	NA	NA	1.8 J	NA	NA	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 UJ
Methyl tert-butyl ether	NA	NA	0.1 J	NA	NA	1.4	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.86	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.065 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	0.23 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U
Trichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
SVOCs (ug/L)															
1,1'-Biphenyl	NA	NA	5.7 UJ	NA	NA	5.3 UJ	NA	NA	5.2 UJ	NA	NA	5.3 UJ	NA	NA	5.3 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5.7 U	NA	NA	5.3 U	NA	NA	5.2 U	NA	NA	5.3 U	NA	NA	5.3 U
2,2'-Oxybis(1-chloropropane)	10 UJ	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2,4,5-Trichlorophenol	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U
2,4,6-Trichlorophenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2,4-Dichlorophenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2,4-Dimethylphenol	10 U	10 UJ	5.7 U	10 U	10 UJ	5.3 U	10 U	10 UJ	5.2 U	10 U	10 UJ	5.3 U	10 U	10 UJ	5.3 U
2,4-Dinitrophenol	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U
2,4-Dinitrotoluene	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2,6-Dinitrotoluene	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-203B NX 3/30/1995	MW-203B NX 7/19/1995	MW-203B NX 12/15/2005	MW-203D NX 3/29/1995	MW-203D NX 7/19/1995	MW-203D NX 12/15/2005	MW-203S NX 3/29/1995	MW-203S NX 7/19/1995	MW-203S NX 12/15/2005	MW-204S NX 3/31/1995	MW-204S NX 7/21/1995	MW-204S NX 12/15/2005	MW-205S NX 4/3/1995	MW-205S NX 7/21/1995	MW-205S NX 12/15/2005
2-Chloronaphthalene	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2-Chlorophenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2-Methylnaphthalene	10 U	10 U	0.23 U	10 UJ	10 U	0.21 U	10 UJ	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
2-Methylphenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
2-Nitroaniline	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U
2-Nitrophenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
3,3'-Dichlorobenzidine	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
3-Nitroaniline	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U
4,6-Dinitro-2-methylphenol	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	0.11 J	25 U	25 U	21 U	25 U	25 U	21 U
4-Bromophenyl-phenylether	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
4-Chloro-3-methylphenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
4-Chloroaniline	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
4-Chlorophenyl-phenylether	10 U	10 U	5.7 UJ	10 U	10 U	5.3 UJ	10 U	10 U	5.2 UJ	10 U	10 U	5.3 UJ	10 U	10 U	5.3 UJ
4-Methylphenol	10 U	10 U	5.7 U	10 UJ	10 U	5.3 U	10 UJ	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
4-Nitroaniline	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U
4-Nitrophenol	25 U	25 U	23 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U	25 U	25 U	21 U
Acenaphthene	10 U	10 U	0.23 U	10 U	10 U	0.035 J	10 U	10 U	0.21 U	10 U	10 U	0.038 J	10 U	10 U	0.033 J
Acenaphthylene	10 U	10 U	0.23 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
Acetophenone	NA	NA	5.7 U	NA	NA	5.3 U	NA	NA	5.2 U	NA	NA	5.3 U	NA	NA	5.3 U
Anthracene	10 UJ	10 UJ	5.7 U	10 U	10 UJ	5.3 U	10 U	10 UJ	5.2 U	10 UJ	10 UJ	5.3 U	10 UJ	10 UJ	5.3 U
Atrazine	NA	NA	1.1 U	NA	NA	0.27 J	NA	NA	1 U	NA	NA	1.1 U	NA	NA	1.1 U
Benzaldehyde	NA	NA	5.7 U	NA	NA	5.3 U	NA	NA	5.2 U	NA	NA	5.3 U	NA	NA	5.3 U
Benzo(a)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U	10 U	10 U	0.11 U
Benzo(a)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U	10 U	10 U	0.11 U
Benzo(b)fluoranthene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U	10 U	10 U	0.11 U
Benzo(g,h,i)perylene	10 U	10 U	0.23 U	10 UJ	10 U	0.21 U	10 UJ	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
Benzo(k)fluoranthene	10 U	10 U	0.23 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
Bis(2-chloroethoxy)methane	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Bis(2-chloroethyl)ether	10 U	10 U	0.57 U	10 U	10 U	0.53 U	10 U	10 U	0.52 U	10 U	10 U	0.53 U	10 U	10 U	0.53 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	2.3 UJ	10 U	10 U	2.1 UJ	10 U	10 U	2.1 UJ	10 U	10 U	2.1 UJ	10 U	10 U	2.1 UJ
Butylbenzylphthalate	10 U	10 U	5.7 UJ	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Caprolactam	NA	NA	5.7 UJ	NA	NA	5.3 U	NA	NA	5.2 U	NA	NA	5.3 U	NA	NA	5.3 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.23 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
Dibenz(a,h)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U	10 U	10 U	0.11 U
Dibenzofuran	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Diethylphthalate	10 U	10 U	5.7 UJ	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Dimethylphthalate	10 U	10 U	5.7 UJ	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Di-n-butylphthalate	10 U	10 U	5.7 UJ	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Di-n-octylphthalate	10 U	10 U	5.7 UJ	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Fluoranthene	10 U	10 U	5.7 U	10 U	10 U	0.13 J	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Fluorene	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Hexachlorobenzene	10 U	10 U	1.1 U	10 U	10 U	1.1 U	10 U	10 U	1 U	10 U	10 U	1.1 U	10 U	10 U	1.1 U
Hexachlorobutadiene	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Hexachlorocyclopentadiene	R	10 UJ	5.7 U	10 UJ	10 UJ	5.3 U	10 UJ	10 UJ	5.2 U	R	10 UJ	5.3 U	10 U	10 UJ	5.3 U
Hexachloroethane	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U	10 U	10 U	0.11 U
Isophorone	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Naphthalene	10 U	10 U	0.23 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
Nitrobenzene	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
N-Nitroso-di-n-propylamine	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
N-Nitrosodiphenylamine	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Pentachlorophenol	25 U	25 U	1.1 U	25 U	25 U	1.1 U	25 U	25 U	1 U	25 U	25 U	1.1 U	25 U	25 U	1.1 U
Phenanthrene	10 U	10 U	0.23 U	10 U	10 U	0.015 J	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.011 J
Phenol	10 U	10 U	5.7 U	10 U	10 U	5.3 U	10 U	10 U	5.2 U	10 U	10 U	5.3 U	10 U	10 U	5.3 U
Pyrene	10 U	10 U	0.23 U	10 U	10 U	0.31	10 U	10 U	0.21 U	10 U	10 U	0.21 U	10 U	10 U	0.21 U
Pesticides/PCBs (ug/L)															
4,4'-DDD	0.005 U	0.005 U	NA	0.005 U	0.006 U	NA	0.005 U	0.005 U	-- R	0.005 U	0.005 U	NA	0.005 U	0.005 U	-- R
4,4'-DDE	0.005 U	0.005 U	NA	0.005 U	0.003 J	NA	0.005 U	0.005	0.01 UJ	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U
4,4'-DDT	0.005 U	0.005 U	NA	0.005 U	0.006 U	NA	0.005 U	0.005 U	0.01 UJ	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U
Aldrin	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
alpha-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-203B NX 3/30/1995	MW-203B NX 7/19/1995	MW-203B NX 12/15/2005	MW-203D NX 3/29/1995	MW-203D NX 7/19/1995	MW-203D NX 12/15/2005	MW-203S NX 3/29/1995	MW-203S NX 7/19/1995	MW-203S NX 12/15/2005	MW-204S NX 3/31/1995	MW-204S NX 7/21/1995	MW-204S NX 12/15/2005	MW-205S NX 4/3/1995	MW-205S NX 7/21/1995	MW-205S NX 12/15/2005
alpha-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	NA	0.0004 J	0.003 U	0.005 U
beta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
delta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.002 J	0.005 UJ	0.003 U	0.001 J	NA	0.003 U	0.003 U	0.005 U
Dieldrin	0.005 U	0.005 U	NA	0.005 U	0.006 U	NA	0.005 U	0.005 U	0.01 UJ	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U
Endosulfan I	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003	0.003 UJ	NA	0.003 U	0.003 UJ	0.005 U
Endosulfan II	0.005 U	0.005 U	NA	0.005 U	0.006 U	NA	0.005 U	0.005 U	0.01 UJ	0.004 J	0.005 U	NA	0.005 U	0.005 U	0.01 U
Endosulfan Sulfate	0.005 U	0.005 U	NA	0.0007 J	0.006 U	NA	0.005 U	0.005 U	0.01 UJ	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U
Endrin	0.005 U	0.005 U	NA	0.005 U	0.0008 J	NA	0.005 U	0.005 U	0.01 UJ	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 UJ
Endrin Aldehyde	0.009 U	0.009 U	NA	0.009 U	0.009 U	NA	0.008 U	0.008 U	0.01 UJ	0.008 U	0.008 U	NA	0.008 U	0.008 U	0.01 U
Endrin Ketone	0.006 U	0.006 U	NA	0.006 U	0.007 U	NA	0.006 U	0.006 U	0.01 UJ	0.006 U	0.006 U	NA	0.006 U	0.006 U	0.01 U
gamma-BHC(Lindane)	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ
gamma-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.001 J	0.005 UJ	0.003 U	0.003 U	NA	0.003 U	0.0004 J	0.005 U
Heptachlor	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
Heptachlor Epoxide	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003	0.003 U	NA	0.003 U	0.003 U	0.005 U
Methoxychlor	0.03 U	0.03 U	NA	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 UJ	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 U
Toxaphene	0.33 U	0.33 U	NA	0.33 U	0.33 U	NA	0.32 U	0.31 U	0.5 UJ	0.32 U	0.32 U	NA	0.3 U	0.32 U	0.5 U
Aroclor-1016	0.05 U	0.05 U	NA	0.05 U	0.06 U	NA	0.05 U	0.05 U	0.1 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1221	0.11 U	0.11 U	NA	0.11 U	0.11 U	NA	0.11 U	0.1 U	0.2 UJ	0.11 U	0.1 U	NA	0.1 U	0.11 U	0.2 U
Aroclor-1232	0.05 U	0.05 U	NA	0.05 U	0.06 U	NA	0.05 U	0.05 U	0.1 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1242	0.05 U	0.05 U	NA	0.05 U	0.06 U	NA	0.05 U	0.05 U	0.1 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1248	0.05 U	0.05 U	NA	0.05 U	0.06 U	NA	0.05 U	0.05 U	0.1 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1254	0.05 U	0.05 U	NA	0.05 U	0.06 U	NA	0.05 U	0.05 U	0.1 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1260	0.05 U	0.05 U	NA	0.05 U	0.06 U	NA	0.01 J	0.05 U	0.1 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Metals (ug/L)															
Aluminum	50.7 U	380 U	52.2 J	25 U	154 U	42.3 J	40.4 U	171 U	22.6 J	73.2 U	149 U	171 J	27.1 U	181 U	50.0 UJ
Antimony	3 U	2.2 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U
Arsenic	8 U	9.6 J	0.86	8 U	2.7 UJ	1.5	8 U	11.4 J	5.8	8 U	2.7 U	2.5	8 U	4.3 J	0.39 J
Barium	17.6	16.4 J	22.5	18.1	15.8 J	23.8	7 U	19.8 J	32.1	33.8	37.2	353	47.2	6.4 U	13.2
Beryllium	1 U	0.54 U	1.0 U	1 U	0.36 U	1.0 U	1 U	0.37 U	1.0 U	1 U	0.1 U	0.38 J	1 U	0.37 U	1.0 U
Cadmium	2 U	0.5 U	0.65 J	2 U	0.5 U	0.088 J	2 U	0.5 U	1.0 U	2 U	0.5 U	0.97 J	2 U	0.5 U	0.11 J
Calcium	17700	17900 J	22400	28300	26000 J	30000	8820	10000 J	11700	38900	38800 J	126000	152000	12700 J	3120 J
Chromium	5 U	2 U	2.0 U	5 U	0.7 U	2.0 U	5 U	1.8 U	2.0 U	5 U	2.4 U	2.0 U	5 U	0.7 U	2.0 U
Cobalt	2 U	1 U	0.51 J	2 U	1.3 U	0.92 J	2 U	4.3	2.8	16.8	55.3	224	4.6	0.5 U	0.59 J
Copper	3 U	60.9	2.0 U	3 U	0.6 U	2.1 U	3 U	0.5 U	2.0 U	3 U	3.1 U	4.4	7 J	0.5 U	7.6
Iron	30 U	371 J	30.6 J	30 U	44.4 U	568 J	15500	11000 J	20400 J	3890	1570	29800 J	2370 J	9.7 U	280 J
Lead	3 UJ	2.8	0.51 J	3 UJ	1.6 U	0.36 J	3 UJ	1.6 U	1.0 U	3 UJ	4.4 U	7.4	3.8 J	1.6 U	6.3
Magnesium	3050	3570 J	3560 J	5340	4890 J	5900	1720	2300 J	2570 J	7780	8270 J	26200	30100	1050 J	5000 U
Manganese	21.3	29.6 J	29.7 J	466	297 J	256 J	755	505 J	1010 J	5010	11000	22400 J	1140	10.5 J	397 J
Mercury	0.2 U	0.2 U	0.083 J	0.22	0.2 U	0.20 UJ	0.37	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	10 U	3.1	1.0 U	10 U	2.4 U	1.1 U	10 U	2.4 U	1.4	10 U	14.7	41.1	10 U	2.4 U	4.7
Potassium	3200	2340	3440 J	3000	2690	3310 J	1160	2800	2920 J	2490	1790	8140	9490	1470	1080 J
Selenium	5 UJ	3.4 U	5.0 U	5 UJ	3.4 U	5.0 U	5 UJ	3.4 U	5.0 U	5 UJ	3.4 U	0.61 J	5 U	3.4 U	5.0 U
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U
Sodium	13900	11900 J	12300	9440	10000 J	14600	5110	15000 J	38400	13300	13700 J	141000	17100	24000 J	32600
Thallium	8 UJ	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U	8 U	3.6 U	0.50 U
Vanadium	2 U	1.9 U	0.75 J	2 U	0.6 U	0.14 J	2 U	2.8 U	0.89 J	2 U	0.6 U	0.41 J	2 U	0.6 U	0.046 J
Zinc	4 U	14.1 U	29.7 J	4 U	4.6 U	8.2 UJ	4 U	7.4 U	4.6 UJ	15.1	9 U	21.1 J	18.9	1.2 U	8.1 UJ
1,4-Dioxanes (ug/L)															
1,4-Dioxane	NA	NA	NA	NA	NA	2.9	NA	NA	2.0 U	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-206D NX 4/3/1995	MW-206D NX 7/26/1995	MW-206D NX 12/13/2005	MW-206S NX 4/3/1995	MW-206S AV 7/26/1995	MW-206S NX 12/13/2005	MW-207B NX 4/7/1995	MW-207B AV 7/27/1995	MW-207B NX 12/13/2005	MW-207B FD 12/13/2005	MW-208B NX 4/5/1995	MW-208B NX 7/25/1995	MW-208B NX 12/16/2005	MW-208D NX 4/5/1995	MW-208D AV 7/25/1995	MW-208D NX 12/16/2005
VOCs (ug/L)																
1,1,1-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	3 J	10 U	2.3	2.3	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	2 J	10 U	1.6	1.6	10 U	10 U	0.063 J	2 J	10 U	0.39 J
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	2 J	10 U	4.6	4.5	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 UJ	10 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.3 J	0.3 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	6 J	5.5 J	2.6	2.6	4 J	3 J	1.7	10 U	10 U	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	NA	10 U	10 U	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.68	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.15 J	0.14 J	10 U	10 U	0.5 U	10 UJ	10 U	0.5 U
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Acetone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromoform	10 U	10 UJ	0.5 UJ	10 U	10 UJ	0.73 U	10 U	10 UJ	0.63 U	0.61 U	10 U	10 U	0.62 UJ	10 U	10 UJ	0.5 UJ
Bromomethane	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 UJ	10 U	10 UJ	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.096 J	0.11 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.16 J	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.37 J	0.35 J	NA	NA	0.5 U	NA	NA	0.5 U
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 U	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 UJ
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Methyl acetate	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.44 J	NA	NA	0.69	NA	NA	0.15 J	0.15 J	NA	NA	0.5 U	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	3 J	3 J	12	12	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U
Trichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	3 J	3 J	9.1	9	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.64	0.77	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
SVOCs (ug/L)																
1,1'-Biphenyl	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 UJ	NA	NA	5.4 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5.4 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 UJ	10 U	5.4 U
2,4,5-Trichlorophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 U	25 U	21 U	25 U	25 U	22 U
2,4,6-Trichlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
2,4-Dichlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
2,4-Dimethylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 UJ	5.4 U
2,4-Dinitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 UJ	25 U	21 U	25 U	25 U	22 U
2,4-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
2,6-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-206D NX 4/3/1995	MW-206D NX 7/26/1995	MW-206D NX 12/13/2005	MW-206S NX 4/3/1995	MW-206S AV 7/26/1995	MW-206S NX 12/13/2005	MW-207B NX 4/7/1995	MW-207B AV 7/27/1995	MW-207B NX 12/13/2005	MW-207B FD 12/13/2005	MW-208B NX 4/5/1995	MW-208B NX 7/25/1995	MW-208B NX 12/16/2005	MW-208D NX 4/5/1995	MW-208D AV 7/25/1995	MW-208D NX 12/16/2005
2-Chloronaphthalene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
2-Chlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
2-Methylnaphthalene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
2-Methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
2-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 U	25 U	21 U	25 UJ	25 U	22 U
2-Nitrophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
3,3'-Dichlorobenzidine	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	5 UJ	10 UJ	10 U	5.2 U	10 U	10 U	5.4 U
3-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 U	25 U	21 U	25 U	25 U	22 U
4,6-Dinitro-2-methylphenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 U	25 U	21 U	25 U	25 U	22 U
4-Bromophenyl-phenylether	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
4-Chloro-3-methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
4-Chloroaniline	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
4-Chlorophenyl-phenylether	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 UJ	10 U	10 U	5.4 UJ
4-Methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
4-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 U	25 U	21 U	25 U	25 U	22 U
4-Nitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	20 U	25 U	25 U	21 U	25 U	25 U	22 U
Acenaphthene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Acenaphthylene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Acetophenone	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5.4 U
Anthracene	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 UJ	10 UJ	5.4 U
Atrazine	NA	NA	1 U	NA	NA	1 U	NA	NA	0.27 J	0.24 J	NA	NA	1 U	NA	NA	1.1 U
Benzaldehyde	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5.4 U
Benzo(a)anthracene	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Benzo(a)pyrene	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Benzo(b)fluoranthene	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Benzo(g,h,i)perylene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.035 J	10 U	10 U	0.074 J
Benzo(k)fluoranthene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Bis(2-chloroethoxy)methane	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Bis(2-chloroethyl)ether	10 U	10 U	0.05 U	10 U	10 U	0.05 U	10 U	10 U	0.41 J	0.38 J	10 U	10 U	0.52 U	10 U	10 U	0.54 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	17 J	10 U	2.1 UJ	13	10 U	2.2 UJ
Butylbenzylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 UJ	10 U	10 U	5.4 U
Caprolactam	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 UJ	NA	NA	5.4 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Dibenz(a,h)anthracene	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	0.1 U	10 U	10 U	0.026 J	10 U	10 U	0.05 J
Dibenzofuran	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Diethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 UJ	10 U	10 U	5.4 U
Dimethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 UJ	10 U	10 U	5.4 U
Di-n-butylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 UJ	10 U	10 U	5.4 U
Di-n-octylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 UJ	10 U	10 U	5.4 U
Fluoranthene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Fluorene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Hexachlorobenzene	10 U	10 U	1 U	10 U	10 U	1 U	10 U	10 U	1 U	1 U	10 U	10 U	1 U	10 U	10 U	1.1 U
Hexachlorobutadiene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Hexachlorocyclopentadiene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	R	10 UJ	5.4 U
Hexachloroethane	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.1 U	0.1 U	10 U	10 U	0.03 J	10 U	10 U	0.051 J
Isophorone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Naphthalene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Nitrobenzene	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
N-Nitroso-di-n-propylamine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
N-Nitrosodiphenylamine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Pentachlorophenol	25 U	25 U	1 U	25 U	25 U	1 U	25 U	25 U	1 U	1 U	25 U	25 U	1 U	25 U	25 U	1.1 U
Phenanthrene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Phenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	5 U	10 U	10 U	5.2 U	10 U	10 U	5.4 U
Pyrene	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.2 U	0.2 U	10 U	10 U	0.21 U	10 U	10 U	0.22 U
Pesticides/PCBs (ug/L)																
4,4'-DDD	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.01 UJ	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.005 U	NA
4,4'-DDE	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.01 UJ	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.005 U	NA
4,4'-DDT	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.01 UJ	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.005 U	NA
Aldrin	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 U	0.004 U	NA	0.003 U	0.003 U	NA
alpha-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 UJ	0.003 UJ	0.005 UJ	0.005 U	0.004 U	0.004 U	NA	0.003 U	0.003 U	NA

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-206D NX 4/3/1995	MW-206D NX 7/26/1995	MW-206D NX 12/13/2005	MW-206S NX 4/3/1995	MW-206S AV 7/26/1995	MW-206S NX 12/13/2005	MW-207B NX 4/7/1995	MW-207B AV 7/27/1995	MW-207B NX 12/13/2005	MW-207B FD 12/13/2005	MW-208B NX 4/5/1995	MW-208B NX 7/25/1995	MW-208B NX 12/16/2005	MW-208D NX 4/5/1995	MW-208D AV 7/25/1995	MW-208D NX 12/16/2005
alpha-Chlordane	0.003 U	0.003 UJ	NA	0.003 U	0.003 UJ	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 U	0.004 UJ	NA	0.003 U	0.003 UJ	NA
beta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 U	0.004 U	NA	0.003 U	0.003 U	NA
delta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 U	0.004 U	NA	0.003 U	0.001 J	NA
Dieldrin	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.01 UJ	0.01 U	0.006 U	0.006 U	NA	0.0008 J	0.005 U	NA
Endosulfan I	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	R	0.003 UJ	0.005 UJ	0.005 U	0.004 U	0.004 U	NA	0.003 U	0.003 U	NA
Endosulfan II	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.01 UJ	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.005 U	NA
Endosulfan Sulfate	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.01 UJ	0.01 U	0.006 U	0.008 U	NA	0.006 U	0.007 U	NA
Endrin	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 UJ	0.005 U	0.005 U	0.01 UJ	0.01 UJ	0.006 U	0.006 U	NA	0.006 U	0.005 U	NA
Endrin Aldehyde	0.008 U	0.009 U	NA	0.008 U	0.008 U	0.01 U	0.008 U	0.008 U	0.01 UJ	0.01 U	0.01 U	0.009 U	NA	0.009 U	0.009 U	NA
Endrin Ketone	0.006 U	0.006 U	NA	0.006 U	0.006 U	0.01 U	0.006 U	0.006 U	0.01 UJ	0.01 U	0.008 U	0.007 U	NA	0.007 U	0.006 U	NA
gamma-BHC(Lindane)	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 UJ	0.004 U	NA	0.003 UJ	0.003 U	NA
gamma-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 UJ	0.004 U	NA	0.003 UJ	0.003 U	NA
Heptachlor	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.003 U	0.005 UJ	0.005 U	0.004 U	0.004 U	NA	0.003 U	0.003 U	NA
Heptachlor Epoxide	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 UJ	0.003 UJ	0.005 UJ	0.005 U	0.004 UJ	0.004 U	NA	0.002 J	0.003 U	NA
Methoxychlor	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 U	0.03 U	0.03 U	0.05 UJ	0.05 U	0.04 U	0.04 U	NA	0.03 U	0.03 U	NA
Toxaphene	0.3 U	0.33 U	NA	0.31 U	0.32 U	0.5 U	0.32 U	0.31 U	0.5 UJ	0.5 U	0.38 U	0.35 U	NA	0.33 U	0.32 U	NA
Aroclor-1016	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.2 U	0.05 U	0.05 U	0.2 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.05 U	NA
Aroclor-1221	0.1 U	0.11 U	NA	0.1 U	0.11 U	0.4 U	0.1 U	0.1 U	0.4 U	0.4 U	0.12 U	0.12 U	NA	0.11 U	0.11 U	NA
Aroclor-1232	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.2 U	0.05 U	0.05 U	0.2 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.05 U	NA
Aroclor-1242	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.2 U	0.05 U	0.05 U	0.2 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.05 U	NA
Aroclor-1248	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.2 U	0.05 U	0.05 U	0.2 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.05 U	NA
Aroclor-1254	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.2 U	0.05 U	0.05 U	0.2 U	0.2 U	0.06 U	0.06 U	NA	0.008 J	0.05 U	NA
Aroclor-1260	0.009 J	0.05 U	NA	0.008 J	0.05 U	0.2 U	0.05 U	0.05 U	0.2 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.05 U	NA
Metals (ug/L)																
Aluminum	25 U	95.6 U	50.0 UJ	25 U	102 U	21.2 J	25 U	171 U	500 UJ	2660 J	25 U	82.2 U	66.7	25 U	73.6 U	50.0 U
Antimony	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	20.0 U	20.0 U	3 U	3 U	2.0 U	3 U	1.9 U	2.0 U
Arsenic	8 U	2.7 U	0.25 J	8 U	2.7 U	0.62	8 U	2.125 J	1.2 J	10.4	8 U	2.7 U	4.2	8 U	2.7 U	0.11 J
Barium	36.4	32.3 U	52.3	40.3	38.5 U	52.4	58.6	81.45	167	181	40.5	37.3 U	29.1	61.2	60.95 J	36.2
Beryllium	1 U	0.31 U	1.0 U	1 U	0.26 U	1.0 U	1 U	0.48 U	10.0 U	10.0 U	1 U	0.1 U	1.0 U	1 U	0.1 U	1.0 U
Cadmium	2 U	0.5 U	0.19 J	2 U	0.5 U	0.59 J	2 U	0.5 U	0.80 J	0.86 J	2 U	0.5 U	1.0 U	2 U	0.5 U	0.10 J
Calcium	73000	32000	29700	74200	54900	25800	1860000	1800000	1820000	1730000	53100	43400	43200	25200	26150	20400
Chromium	5 U	0.7 U	2.0 U	5 U	0.7 U	2.0 U	5 U	0.825 J	20.0 U	20.0 U	5 U	1.4 U	0.31 J	5 U	0.7 U	2.0 U
Cobalt	3.2	0.86	1.8	2.5	3.05	0.68 J	2 U	0.53	10.0 U	10.0 U	2 U	0.6	5.0	2 U	0.7	0.73 J
Copper	10.2 J	4.7 U	2.0 U	8.7 J	4.1 U	2.0 U	4.1 J	0.5 U	20.0 U	20.0 U	3 U	1.6 U	2.0 UJ	3 U	1.4 U	2.0 UJ
Iron	44.2 J	24.3 U	100 UJ	30 UJ	44 U	226 UJ	130	17.3 U	100 UJ	2530 J	753	517	276	79.1	88.4	100 U
Lead	4.7 J	1.6 U	1.0 U	3 UJ	1.6 U	1.0 U	3 UJ	1.6 U	10.0 U	5.5 J	3 U	2.1	0.37 J	3 UJ	1.6 J	1.0 UJ
Magnesium	11800	5450	7030	10900	7375	5260	134000	193500	201000	191000	10800	8490	8190	5060	5190	3050 J
Manganese	37.1 UJ	2.5 U	57.8 J	38.7 UJ	38.85	532 J	45.5	10.35	365 J	497 J	504	453	281	1620	1730	1690
Mercury	0.53	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.19 J	1.6 J	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	10 U	3.4	2.1	10 U	2.8	3.2	10 U	2.4 U	10.0 U	10.0 U	10 U	2.4 U	1.4 J	10 U	2.4 U	1.0 J
Potassium	7720	9160 J	5140	8070	8280 J	5010	37300	44200 J	39600	38600	5630	3820 J	3630 J	2620	2370 J	1560 J
Selenium	5 U	3.4 U	5.0 U	5 U	3.4 U	5.0 U	5 U	3.4 U	50.0 U	50.0 U	5 U	3.4 U	5.0 UJ	5 U	3.4 U	5.0 UJ
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	25.8 J	27.4	20.7	26.2	3 U	0.63	1.0 U	3 U	0.6 U	1.0 U
Sodium	25100	46400	97200	24700	37400	97400	1210000	1640000	2960000	2950000	20900	17700	17400	34500	36800	24000
Thallium	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U	8 U	3.6 U	5.0 U	5.0 U	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U
Vanadium	2 U	0.6 U	0.073 J	2 U	0.6 U	0.15 J	2 U	0.6 U	10.0 UJ	2.4 J	2 U	0.6 U	0.31 J	2 U	0.6 U	1.0 UJ
Zinc	4 U	1.2 U	9.8 UJ	4 U	1.2 U	3.1 UJ	4 U	1.2 U	27.5 UJ	34.5 UJ	4 U	2.4 U	4.6 J	4 U	1.2 U	2.0 U
1,4-Dioxanes (ug/L)																
1,4-Dioxane	NA	NA	2.0 U	NA	NA	NA	NA	NA	1.3 J	1.3 J	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-208S NX 4/5/1995	MW-208S NX 7/25/1995	MW-208S NX 12/16/2005	MW-209B NX 4/4/1995	MW-209B NX 7/25/1995	MW-209B NX 12/21/2005	MW-210S AV 4/4/1995	MW-210S NX 7/24/1995	MW-210S NX 12/20/2005	MW-211D NX 3/28/1995	MW-211D AV 7/18/1995	MW-211D NX 12/20/2005	MW-211S NX 3/28/1995	MW-211S NX 7/18/1995	MW-211S NX 12/20/2005
VOCs (ug/L)															
1,1,1-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U
1,1-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	1.3	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dichloroethane	10 U	10 U	0.5 U	38	39	21	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	2	10 U	10 U	0.5 U	10 U	10 U	0.5 U
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Acetone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromoform	10 U	10 UJ	0.5 UJ	10 U	10 UJ	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromomethane	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	3 J	10 U	5.7	10 U	10 U	1.2	10 U	10 U	0.5 U
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.35 J	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Methyl acetate	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.5 U	NA	NA	2.3	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U
Trichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
SVOCs (ug/L)															
1,1'-Biphenyl	NA	NA	5.6 UJ	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	5 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5.6 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5.6 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4,5-Trichlorophenol	25 U	25 U	22 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2,4,6-Trichlorophenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 U
2,4-Dichlorophenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dimethylphenol	10 U	10 UJ	5.6 U	10 U	10 UJ	5 U	10 U	10 U	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 U
2,4-Dinitrophenol	25 UJ	25 U	22 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2,4-Dinitrotoluene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,6-Dinitrotoluene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-208S NX 4/5/1995	MW-208S NX 7/25/1995	MW-208S NX 12/16/2005	MW-209B NX 4/4/1995	MW-209B NX 7/25/1995	MW-209B NX 12/21/2005	MW-210S AV 4/4/1995	MW-210S NX 7/24/1995	MW-210S NX 12/20/2005	MW-211D NX 3/28/1995	MW-211D AV 7/18/1995	MW-211D NX 12/20/2005	MW-211S NX 3/28/1995	MW-211S NX 7/18/1995	MW-211S NX 12/20/2005
2-Chloronaphthalene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Chlorophenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Methylnaphthalene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 UJ	10 U	0.2 UJ	10 UJ	10 U	0.33 UJ
2-Methylphenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Nitroaniline	25 U	25 U	22 U	25 UJ	25 U	20 U	25 UJ	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2-Nitrophenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
3,3'-Dichlorobenzidine	10 UJ	10 UJ	5.6 U	10 UJ	10 U	5 U	10 U	10 UJ	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
3-Nitroaniline	25 U	25 U	22 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4,6-Dinitro-2-methylphenol	25 U	25 U	22 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4-Bromophenyl-phenylether	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chloro-3-methylphenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chloroaniline	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chlorophenyl-phenylether	10 U	10 U	5.6 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ
4-Methylphenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Nitroaniline	25 U	25 U	22 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4-Nitrophenol	25 U	25 U	22 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
Acenaphthene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.33 UJ
Acenaphthylene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.33 UJ
Acetophenone	NA	NA	5.6 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Anthracene	10 U	10 UJ	5.6 U	10 UJ	10 UJ	5 U	10 UJ	10 U	5 UJ	10 U	10 UJ	5 UJ	10 U	10 UJ	5 UJ
Atrazine	NA	NA	1.1 U	NA	NA	R	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Benzaldehyde	NA	NA	5.6 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Benzo(a)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.13 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.16 UJ
Benzo(a)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.13 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.16 UJ
Benzo(b)fluoranthene	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.13 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.16 UJ
Benzo(g,h,i)perylene	10 U	10 U	0.066 J	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 UJ	10 U	0.2 UJ	10 UJ	10 U	0.33 UJ
Benzo(k)fluoranthene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.33 UJ
Bis(2-chloroethoxy)methane	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Bis(2-chloroethyl)ether	10 U	10 U	0.56 U	10 U	10 U	0.32 J	10 U	10 U	0.66 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.82 UJ
Bis(2-ethylhexyl)phthalate	10 U	10 U	2.2 UJ	10 U	10 U	0.5 UJ	10 U	10 U	2.6 UJ	10 U	10 U	2 UJ	10 U	10 U	3.3 UJ
Butylbenzylphthalate	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Caprolactam	NA	NA	5.6 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.33 UJ
Dibenz(a,h)anthracene	10 U	10 U	0.05 J	10 U	10 U	0.1 UJ	10 U	10 U	0.13 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.16 UJ
Dibenzofuran	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Diethylphthalate	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Dimethylphthalate	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Di-n-butylphthalate	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Di-n-octylphthalate	10 U	10 U	5.6 U	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ
Fluoranthene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Fluorene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ
Hexachlorobenzene	10 U	10 U	1.1 U	10 U	10 U	1 UJ	10 U	10 U	1.3 UJ	10 U	10 U	1 UJ	10 U	10 U	1.6 UJ
Hexachlorobutadiene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 U
Hexachlorocyclopentadiene	10 U	10 UJ	5.6 U	R	10 UJ	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Hexachloroethane	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 UJ	5 U	10 U	10 UJ	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.057 J	10 U	10 U	0.1 UJ	10 U	10 U	0.13 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.16 UJ
Isophorone	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Naphthalene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.065 J	10 U	10 UJ	0.2 UJ	10 U	10 UJ	0.33 UJ
Nitrobenzene	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
N-Nitroso-di-n-propylamine	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
N-Nitrosodiphenylamine	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Pentachlorophenol	25 U	25 U	1.1 U	25 U	25 U	1 UJ	25 U	25 U	1.3 UJ	25 U	25 U	1 UJ	25 U	25 U	1.6 UJ
Phenanthrene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.33 UJ
Phenol	10 U	10 U	5.6 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Pyrene	10 U	10 U	0.22 U	10 U	10 U	0.2 UJ	10 U	10 U	0.26 UJ	10 U	10 UJ	0.2 UJ	10 U	10 UJ	0.33 UJ
Pesticides/PCBs (ug/L)															
4,4'-DDD	0.006 U	0.005 U	NA	0.005 U	0.005 U	NA	0.006 U	0.006 U	NA	0.005 U	0.005 U	NA	0.005 U	0.006 J	-- R
4,4'-DDE	0.006 U	0.005 U	NA	0.005 U	0.005 U	NA	0.006 U	0.006 U	NA	0.005 U	0.0035 J	NA	0.005 U	0.003 J	0.01 U
4,4'-DDT	0.006 U	0.005 U	NA	0.005 U	0.005 U	NA	0.006 U	0.006 U	NA	0.005 U	0.005 U	NA	0.005 U	0.005 U	0.01 U
Aldrin	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
alpha-BHC	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-208S NX 4/5/1995	MW-208S NX 7/25/1995	MW-208S NX 12/16/2005	MW-209B NX 4/4/1995	MW-209B NX 7/25/1995	MW-209B NX 12/21/2005	MW-210S AV 4/4/1995	MW-210S NX 7/24/1995	MW-210S NX 12/20/2005	MW-211D NX 3/28/1995	MW-211D AV 7/18/1995	MW-211D NX 12/20/2005	MW-211S NX 3/28/1995	MW-211S NX 7/18/1995	MW-211S NX 12/20/2005
alpha-Chlordane	0.004 U	0.003 UJ	NA	0.003 U	0.003 UJ	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
beta-BHC	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
delta-BHC	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
Dieldrin	0.0003 J	0.005 U	NA	0.005 U	0.005 U	NA	0.006 U	0.006 U	NA	0.001 J	0.005 U	NA	0.005 U	0.005 U	0.01 U
Endosulfan I	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 UJ	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
Endosulfan II	0.006 U	0.005 U	NA	0.005 U	0.005 U	NA	0.006 U	0.006 U	NA	0.01	0.005 U	NA	0.008	0.005 U	0.01 U
Endosulfan Sulfate	0.006 U	0.007 U	NA	0.005 U	0.007 U	NA	0.006 U	0.006 U	NA	0.004 J	0.005 U	NA	0.002 J	0.005 U	0.01 U
Endrin	0.006 U	0.005 U	NA	0.005 U	0.005 U	NA	0.006 U	0.006 U	NA	0.005 U	0.005 U	NA	0.005 U	0.005 U	-- R
Endrin Aldehyde	0.009 U	0.008 U	NA	0.008 U	0.008 U	NA	0.009 U	0.01 U	NA	0.008 U	0.008 U	NA	0.008 U	0.008 U	0.01 U
Endrin Ketone	0.007 U	0.006 U	NA	0.006 U	0.006 U	NA	0.007 U	0.007 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	0.01 U
gamma-BHC(Lindane)	0.004 UJ	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003	0.003 U	NA	0.003 U	0.003 U	0.005 U
gamma-Chlordane	0.004 UJ	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
Heptachlor	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
Heptachlor Epoxide	0.004 UJ	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U
Methoxychlor	0.04 U	0.03 U	NA	0.03 U	0.03 U	NA	0.01 J	0.04 U	NA	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 U
Toxaphene	0.35 U	0.32 U	NA	0.3 U	0.32 U	NA	0.33 U	0.37 U	NA	0.32 U	0.31 U	NA	0.32 U	0.32 U	0.5 U
Aroclor-1016	0.06 U	0.05 U	NA	0.05 U	0.05 U	NA	0.06 U	0.06 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1221	0.12 U	0.1 U	NA	0.1 U	0.1 U	NA	0.11 U	0.12 U	NA	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.2 U
Aroclor-1232	0.06 U	0.05 U	NA	0.05 U	0.05 U	NA	0.06 U	0.06 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1242	0.06 U	0.05 U	NA	0.05 U	0.05 U	NA	0.06 U	0.06 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1248	0.06 U	0.05 U	NA	0.05 U	0.05 U	NA	0.06 U	0.06 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1254	0.06 U	0.05 U	NA	0.05 U	0.05 U	NA	0.06 U	0.06 U	NA	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.1 U
Aroclor-1260	0.06 U	0.05 U	NA	0.05 U	0.05 U	NA	0.01 J	0.06 U	NA	0.006 J	0.05 U	NA	0.006 J	0.05 U	0.1 U
Metals (ug/L)															
Aluminum	25.3 U	90.3 U	89.8	25 U	64.1 U	50.0 U	25 U	130 U	50.0 U	25 U	133 U	50.0 U	25 U	146 U	50.0 U
Antimony	3 U	2.6 U	2.0 U	3 U	3 U	2.0 U	3 U	2 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U
Arsenic	58.1	49.6	101	8 U	2.7 U	4.4	23.2	33.1	66.1	345	277.5	281	141	186	99.5
Barium	36.7	34.7 J	38.9	43.4	39.1 J	36.4	60.65	34.8	40.4	83.2	109	44.1	83	149	32.1
Beryllium	1 U	0.1 U	1.0 U	1 U	0.1 U	1.0 U	1 U	0.1 U	1.0 U	1 U	0.41 U	1.0 U	1 U	0.41 U	1.0 U
Cadmium	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U
Calcium	7600	7330	9980	59300	55700	62600	46900	30500 J	44900	96400	96550	80800	56600	83700	30700
Chromium	5 U	1.8 U	0.77 J	5 U	1.4 U	2.0 U	5 U	0.99 U	0.24 J	5 U	0.86 U	2.0 U	5 U	1.2 U	0.38 J
Cobalt	3.5	3.9	3.5	2 U	0.5 U	2.6	6.6	3	3.5	12.2	10.7	10.6	4.8	6.1	1.6
Copper	3 U	1.7 U	2.9 UJ	3 U	1.6 U	0.52 J	3 U	1.9 U	2.0 UJ	3 U	2.7 U	2.0 U	3 U	2.6 U	2.0 UJ
Iron	17600	16700	21400	390 J	475	2250	30750 J	18900	21100	58500	63600	53800	63500	82000	37000
Lead	3 UJ	3	1.9 J	3 UJ	1.7	1.0 U	2.35 J	2.2 U	1.0 UJ	6.7 J	2.7 UJ	1.0 U	8.8 J	3.2 UJ	1.0 UJ
Magnesium	1410	1410	1740 J	23500	21000	22600	5800	3460 J	4480 J	16500	16000	12000	9230	12900	3600 J
Manganese	1010	1020	1050	1140	1100	1290	2440	1260	2770	6400	4765	5140	2320	2300	1180
Mercury	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	10 U	2.4 U	3.3 J	10 U	2.4 U	0.35 J	10 U	2.4 U	2.0 J	10 U	7.8 U	4.4	10 U	5.7 U	1.3 J
Potassium	2270	1940 J	2680 J	6890	5650 J	6020	9325	6230	6540 J	20000	22250	12600	12100	21100	5220 J
Selenium	5 U	3.4 U	5.0 UJ	5 U	3.4 U	5.0 U	5 U	3.4 U	5.0 UJ	5 UJ	3.4 U	0.18 J	5.6 J	3.4 U	5.0 UJ
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U
Sodium	12600	13100	13700	24500	23600	25500	14400	11500 J	11000	33100	34400	22800	14000	23800	4900 J
Thallium	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 UJ	8 U	3.6 U	0.50 U	8.9 J	3.6 U	0.50 UJ	8 UJ	3.6 U	0.50 U
Vanadium	2 U	1.2	2.0 J	2 U	0.6 U	1.0 UJ	2 U	0.6 U	1.0 UJ	2 U	2.65	1.0 UJ	2 U	3.6	0.36 J
Zinc	4 U	1.5 U	8.3 J	4 U	1.2 U	1.2 J	3.95 J	4.4 U	2.0 U	4 U	29.7 U	1.9 J	4 U	73.4 U	2.0 U
1,4-Dioxanes (ug/L)															
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-212B NX 3/29/1995	MW-212B NX 7/18/1995	MW-212B NX 12/20/2005	MW-212D NX 3/28/1995	MW-212D NX 7/18/1995	MW-212D NX 12/20/2005	MW-212D FD 12/20/2005	MW-213B NX 4/6/1995	MW-213B NX 7/27/1995	MW-213B NX 12/19/2005	MW-213D AV 4/6/1995	MW-213D NX 7/27/1995	MW-213D NX 12/19/2005
VOCs (ug/L)													
1,1,1-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	5 J	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 UJ	5 U	5 U	0.5 UJ
1,1-Dichloroethane	10 U	10 U	1.4	10 U	10 U	0.5 U	0.5 U	5 J	5 J	1.8	5.5 J	5 J	1.4
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	9 J	4 J	2.5	7.5 J	4 J	0.57 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.62 U	5 U	5 U	0.5 U
1,2-Dichloroethane	3 J	3 J	1.6	10 U	10 U	0.5 U	0.5 U	9 J	6 J	4.6	3 J	3 J	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	NA	3 J	3 J	NA	3 J	3 J	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U	5 U
Acetone	10 U	10 U	5 U	10 UJ	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromoform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 UJ	0.5 U	5 U	5 UJ	0.5 U
Bromomethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 UJ	0.5 U	5 U	5 UJ	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.81 U	5 U	5 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	1.2	4 J	4 J	0.68
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	2 J	5 U	0.5 U	5 U	5 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	2.4	5 U	5 U	0.5 U	5 U	5 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	1.9	NA	NA	0.98
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 UJ	5 U	5 U	0.5 UJ
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methyl acetate	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 UJ	5 U	5 U	0.5 UJ
Trichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	50	39	16	52.5	39	4.8
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
SVOCs (ug/L)													
1,1'-Biphenyl	NA	NA	5 UJ	NA	NA	5 UJ	5 UJ	NA	NA	5.2 UJ	NA	NA	5 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
2,4,6-Trichlorophenol	10 U	10 UJ	5 U	10 U	10 UJ	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2,4-Dichlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2,4-Dimethylphenol	10 U	10 UJ	5 U	10 U	10 UJ	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2,4-Dinitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
2,4-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2,6-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-212B NX 3/29/1995	MW-212B NX 7/18/1995	MW-212B NX 12/20/2005	MW-212D NX 3/28/1995	MW-212D NX 7/18/1995	MW-212D NX 12/20/2005	MW-212D FD 12/20/2005	MW-213B NX 4/6/1995	MW-213B NX 7/27/1995	MW-213B NX 12/19/2005	MW-213D AV 4/6/1995	MW-213D NX 7/27/1995	MW-213D NX 12/19/2005
2-Chloronaphthalene	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2-Chlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2-Methylnaphthalene	10 UJ	10 U	0.2 UJ	10 UJ	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
2-Methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
2-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
2-Nitrophenol	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	10 U	10 U	5 U	10 UJ	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
3-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
4,6-Dinitro-2-methylphenol	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
4-Bromophenyl-phenylether	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
4-Chloroaniline	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
4-Chlorophenyl-phenylether	10 U	10 U	5 UJ	10 U	10 U	5 UJ	5 UJ	5 U	5 U	5.2 UJ	5 U	5 U	5 UJ
4-Methylphenol	10 UJ	10 U	5 U	10 UJ	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
4-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
4-Nitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	20 U
Acenaphthene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
Acenaphthylene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
Acetophenone	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5 U
Anthracene	10 U	10 UJ	5 UJ	10 U	10 UJ	5 UJ	5 UJ	5 U	5 U	5.2 U	5 U	5 U	5 UJ
Atrazine	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	1 U	NA	NA	5 U
Benzaldehyde	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5 U
Benzo(a)anthracene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	0.1 UJ	5 U	5 U	0.1 U	5 U	5 U	0.1 UJ
Benzo(a)pyrene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	0.1 UJ	5 U	5 U	0.1 U	5 U	5 U	0.1 UJ
Benzo(b)fluoranthene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	0.1 UJ	5 U	5 U	0.1 U	5 U	5 U	0.1 UJ
Benzo(g,h,i)perylene	10 UJ	10 U	0.2 UJ	10 UJ	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.024 J	5 U	5 U	0.2 UJ
Benzo(k)fluoranthene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
Bis(2-chloroethoxy)methane	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Bis(2-chloroethyl)ether	10 U	10 U	0.1 J	10 U	10 U	0.5 UJ	0.51 UJ	5 U	5 U	0.31 J	5 U	5 U	0.5 UJ
Bis(2-ethylhexyl)phthalate	10 U	10 U	2 UJ	10 U	10 U	2 UJ	1.9 J	5 U	5 U	2.1 UJ	5 U	5 U	2 UJ
Butylbenzylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Caprolactam	NA	NA	5 U	NA	NA	5 U	5 U	NA	NA	5.2 U	NA	NA	5 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	NA	5 U	5 U	NA	5 U	5 U	NA
Chrysene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
Dibenz(a,h)anthracene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	0.1 UJ	5 U	5 U	0.019 J	5 U	5 U	0.1 UJ
Dibenzofuran	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Diethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	6.5 U	5 U
Dimethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Di-n-butylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Di-n-octylphthalate	10 U	10 U	5 UJ	10 U	10 U	5 UJ	5 UJ	5 U	5 U	5.2 U	5 U	5 U	5 UJ
Fluoranthene	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Fluorene	10 U	10 U	5 UJ	10 U	10 U	5 UJ	5 UJ	5 U	5 U	5.2 U	5 U	5 U	5 UJ
Hexachlorobenzene	10 U	10 U	1 UJ	10 U	10 U	1 UJ	1 UJ	5 U	5 U	1 U	5 U	5 U	1 UJ
Hexachlorobutadiene	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	10 UJ	10 UJ	5 U	10 UJ	10 UJ	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Hexachloroethane	10 U	10 UJ	5 U	10 U	10 UJ	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	0.1 UJ	5 U	5 U	0.021 J	5 U	5 U	0.1 UJ
Isophorone	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Naphthalene	10 U	10 UJ	0.2 UJ	10 U	10 UJ	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
Nitrobenzene	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Pentachlorophenol	25 U	25 U	1 UJ	25 U	25 U	1 UJ	1 UJ	12.5 U	12.5 U	1 U	12.5 U	12.5 U	1 UJ
Phenanthrene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	0.2 UJ	5 U	5 U	0.017 J	5 U	5 U	0.2 UJ
Phenol	10 U	10 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5 U	5 U
Pyrene	10 U	10 UJ	0.2 UJ	10 U	10 UJ	0.2 UJ	0.2 UJ	5 U	5 U	0.21 U	5 U	5 U	0.2 UJ
Pesticides/PCBs (ug/L)													
4,4'-DDD	0.006 U	0.005 U	NA	0.005 U	0.006 U	NA	NA	0.0025 U	0.003 U	NA	0.0025 U	0.004 U	NA
4,4'-DDE	0.006 U	0.001 J	NA	0.005 U	0.0006 J	NA	NA	0.0025 U	0.002 J	NA	0.0025 U	0.003 U	NA
4,4'-DDT	0.006 U	0.005 U	NA	0.005 U	0.006 U	NA	NA	0.0025 U	0.003 U	NA	0.0025 U	0.003 U	NA
Aldrin	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 U	NA	0.0015 U	0.002 U	NA
alpha-BHC	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 UJ	0.002 UJ	NA	0.0015 UJ	0.002 UJ	NA

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-212B NX 3/29/1995	MW-212B NX 7/18/1995	MW-212B NX 12/20/2005	MW-212D NX 3/28/1995	MW-212D NX 7/18/1995	MW-212D NX 12/20/2005	MW-212D FD 12/20/2005	MW-213B NX 4/6/1995	MW-213B NX 7/27/1995	MW-213B NX 12/19/2005	MW-213D AV 4/6/1995	MW-213D NX 7/27/1995	MW-213D NX 12/19/2005
alpha-Chlordane	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 U	NA	0.0015 U	0.002 U	NA
beta-BHC	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 U	NA	0.0015 U	0.002 U	NA
delta-BHC	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 J	NA	0.0015 U	0.002 U	NA
Dieldrin	0.006 U	0.005 U	NA	0.0005 J	0.006 U	NA	NA	0.0025 U	0.003 U	NA	0.0025 U	0.003 U	NA
Endosulfan I	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	R	0.002 UJ	NA	R	0.002 UJ	NA
Endosulfan II	0.006 U	0.005 U	NA	0.005 U	0.006 U	NA	NA	0.0025 U	0.003 U	NA	0.0025 U	0.003 U	NA
Endosulfan Sulfate	0.006 U	0.005 U	NA	0.005 U	0.006 U	NA	NA	0.0025 U	0.003 U	NA	0.0002 J	0.003 U	NA
Endrin	0.006 U	0.005 U	NA	0.005 U	0.006 U	NA	NA	0.0025 U	0.003 U	NA	0.0025 U	0.003 U	NA
Endrin Aldehyde	0.0006 J	0.008 U	NA	0.009 U	0.009 U	NA	NA	0.004 U	0.005 U	NA	0.004 U	0.005 U	NA
Endrin Ketone	0.007 U	0.006 U	NA	0.006 U	0.007 U	NA	NA	0.003 U	0.0035 U	NA	0.003 U	0.004 U	NA
gamma-BHC(Lindane)	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 U	NA	0.0015 U	0.002 U	NA
gamma-Chlordane	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 U	NA	0.0015 U	0.002 U	NA
Heptachlor	0.004 U	0.003 U	NA	0.003 U	0.003 U	NA	NA	0.0015 U	0.002 U	NA	0.0015 U	0.002 U	NA
Heptachlor Epoxide	0.004 U	0.003 U	NA	0.0003 J	0.003 U	NA	NA	0.0015 UJ	0.002 UJ	NA	0.0015 UJ	0.002 UJ	NA
Methoxychlor	0.04 U	0.03 U	NA	0.03 U	0.03 U	NA	NA	0.015 U	0.02 U	NA	0.008 J	0.02 U	NA
Toxaphene	0.35 U	0.31 U	NA	0.33 U	0.34 U	NA	NA	0.16 U	0.18 U	NA	0.155 U	0.19 U	NA
Aroclor-1016	0.06 U	0.05 U	NA	0.05 U	0.06 U	NA	NA	0.025 U	0.03 U	NA	0.025 U	0.03 U	NA
Aroclor-1221	0.12 U	0.1 U	NA	0.11 U	0.11 U	NA	NA	0.05 U	0.06 U	NA	0.05 U	0.06 U	NA
Aroclor-1232	0.06 U	0.05 U	NA	0.05 U	0.06 U	NA	NA	0.025 U	0.03 U	NA	0.025 U	0.03 U	NA
Aroclor-1242	0.06 U	0.05 U	NA	0.05 U	0.06 U	NA	NA	0.025 U	0.03 U	NA	0.025 U	0.03 U	NA
Aroclor-1248	0.06 U	0.05 U	NA	0.05 U	0.06 U	NA	NA	0.025 U	0.03 U	NA	0.025 U	0.03 U	NA
Aroclor-1254	0.06 U	0.05 U	NA	0.05 U	0.06 U	NA	NA	0.025 U	0.03 U	NA	0.025 U	0.03 U	NA
Aroclor-1260	0.06 U	0.05 U	NA	0.08	0.06 U	NA	NA	0.025 U	0.03 U	NA	0.025 U	0.03 U	NA
Metals (ug/L)													
Aluminum	25 U	131 U	25.5 J	47 U	136 U	50.0 U	50.0 U	12.5 U	56.5 U	610	12.5 U	62.5 U	56.8
Antimony	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	2.0 U	1.5 U	0.95 U	2.0 U	1.5 U	2.75 U	2.0 U
Arsenic	13.2 U	10.5	32.9	8 U	7.2	22.0	18.5	4 U	1.35 U	5.1	4 U	1.35 U	0.42 J
Barium	28.7	21.2	13.8	41.3	38.5	67.1	57.6	11	13.4	16.3	73.15	70.3	57.3
Beryllium	1 U	0.33 U	1.0 U	1 U	0.38 U	1.0 U	1.0 U	0.5 U	0.175 U	1.0 U	0.5 U	0.185 U	1.0 U
Cadmium	2 U	0.5 U	1.0 U	2 U	0.5 U	0.084 J	0.074 J	1 U	0.25 U	1.2	1 U	0.25 U	1.0 U
Calcium	58000	48500	55800	18400	20500	23400	24100	55300	65700	44100	63850	57800	39600
Chromium	5 U	0.7 U	2.0 U	5 U	0.7 U	0.20 J	0.22 J	2.5 U	0.35 U	5.1	2.5 U	0.35 U	0.17 J
Cobalt	2 U	1.4 U	8.0	2 U	0.5 U	2.8	2.4	1 U	1.7	7.7	7.5	5.7	2.7
Copper	3 U	0.89 U	3.0	3 U	1 U	2.0 UJ	2.0 UJ	1.5 U	0.41 U	11.2 J	1.5 U	0.31 U	2.2 UJ
Iron	979	1100	2560	987	1050	4920	5290	41.6	178	2150	15 U	104	400
Lead	3 UJ	1.6 UJ	0.37 J	3 UJ	1.6 UJ	0.41 J	0.34 J	1.5 U	0.8 U	17.3 J	1.5 U	0.8 U	0.32 J
Magnesium	5830	4520	5420	2620	2690	3700 J	3840 J	8170	9770	6140	12200	10400	7280
Manganese	2690	2100	2770	1100	1110	1130	951	114	180	270	922	661	224
Mercury	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.20 UJ	0.1 U	0.1 U	0.20 UJ	0.1 U	0.1 U	0.20 UJ
Nickel	10 U	3.1 U	3.4	10 U	2.4 U	1.5 J	1.2 J	5 U	2.8	5.5 J	5 U	4	3.1 J
Potassium	8450	5810	3290 J	3610	3040	3150 J	3350 J	6140	5950 J	3460 J	9545	7420 J	4500 J
Selenium	5 UJ	3.4 U	5.0 U	5 UJ	3.4 U	5.0 UJ	5.0 UJ	2.5 U	1.7 U	5.0 UJ	2.5 U	1.7 U	5.0 UJ
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	1.0 U	1.5 U	0.3 U	1.0 U	1.5 U	0.3 U	1.0 U
Sodium	71700	65800	63500	62600	54100	71600	75300	45000	66500	54700	65350	79400	79200
Thallium	8 UJ	3.6 U	0.50 UJ	8 UJ	3.6 U	0.50 U	0.50 U	4 U	1.8 U	0.50 U	4 U	1.8 U	0.50 U
Vanadium	2 U	0.6 U	1.0 J	2 U	0.6 U	0.65 J	0.50 J	1 U	0.3 U	1.6 J	1 U	0.3 U	1.0 UJ
Zinc	4 U	7.7 U	5.2	4 U	7.9 U	3.9 U	2.6 U	2 U	0.6 U	32.9 J	3.8 J	1.05 U	2.2 U
1,4-Dioxanes (ug/L)													
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5 J	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-213S NX 4/6/1995	MW-213S NX 7/27/1995	MW-213S NX 12/19/2005	MW-213S FD 12/19/2005	MW-214S NX 4/5/1995	MW-214S NX 7/26/1995	MW-214S NX 12/19/2005	MW-215B NX 4/6/1995	MW-215B NX 7/25/1995	MW-215B NX 12/19/2005
VOCs (ug/L)										
1,1,1-Trichloroethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 UJ	5 U	5 U	0.5 U
1,1-Dichloroethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloroethene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	5 U	5 U	0.5 UJ	0.5 UJ	5 UJ	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichloroethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichloroethene(total)	5 U	5 U	NA	NA	5 U	5 U	NA	5 U	5 U	NA
1,2-Dichloropropane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,3-Dichlorobenzene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,4-Dichlorobenzene	5 U	5 U	0.5 UJ	0.5 UJ	5 UJ	5 U	0.5 U	5 U	5 U	0.5 U
2-Butanone	5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 UJ	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U	5 UJ	5 U	5 U
4-Methyl-2-pentanone	5 UJ	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U	5 UJ	5 U	5 U
Acetone	15	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromoform	5 U	5 UJ	3 UJ	2.6 UJ	5 U	5 UJ	0.5 U	5 U	5 U	0.5 U
Bromomethane	5 U	5 UJ	0.5 UJ	0.5 UJ	5 U	5 UJ	0.5 U	5 U	5 U	0.5 U
Carbon Disulfide	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Carbon Tetrachloride	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chlorobenzene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroform	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	6 J	4 J	0.5 U
Chloromethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
cis-1,3-Dichloropropene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 UJ	5 U	5 U	0.5 U
Cyclohexane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Ethylbenzene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methyl acetate	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Styrene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Tetrachloroethene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Toluene	3 J	4 J	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 UJ	5 U	5 U	0.5 U
Trichloroethene	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Trichlorofluoromethane	NA	NA	0.5 UJ	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Xylene (total)	5 U	5 U	0.5 UJ	0.5 UJ	5 U	5 U	0.5 U	5 U	5 U	0.5 U
SVOCs (ug/L)										
1,1'-Biphenyl	NA	NA	5.8 UJ	5 UJ	NA	NA	5.3 UJ	NA	NA	5.7 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5.8 U	5 U	NA	NA	5.3 U	NA	NA	5.7 U
2,2'-Oxybis(1-chloropropane)	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2,4,5-Trichlorophenol	12.5 U	12.5 U	23 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	23 U
2,4,6-Trichlorophenol	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2,4-Dichlorophenol	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2,4-Dimethylphenol	14	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2,4-Dinitrophenol	12.5 U	12.5 U	23 U	20 U	12.5 UJ	12.5 U	21 U	12.5 U	12.5 U	23 U
2,4-Dinitrotoluene	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2,6-Dinitrotoluene	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-213S NX 4/6/1995	MW-213S NX 7/27/1995	MW-213S NX 12/19/2005	MW-213S FD 12/19/2005	MW-214S NX 4/5/1995	MW-214S NX 7/26/1995	MW-214S NX 12/19/2005	MW-215B NX 4/6/1995	MW-215B NX 7/25/1995	MW-215B NX 12/19/2005
2-Chloronaphthalene	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2-Chlorophenol	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2-Methylnaphthalene	3 J	3 J	5.8 U	-- R	10	8 J	0.077 J	5 U	5 U	0.23 U
2-Methylphenol	5 U	6 J	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
2-Nitroaniline	12.5 U	12.5 U	23 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	23 U
2-Nitrophenol	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
3,3'-Dichlorobenzidine	5 U	5 UJ	-- R	-- R	5 UJ	5 U	5.3 U	5 U	5 U	5.7 U
3-Nitroaniline	12.5 U	12.5 U	23 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	23 U
4,6-Dinitro-2-methylphenol	12.5 U	12.5 UJ	23 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	23 U
4-Bromophenyl-phenylether	5 U	5 UJ	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
4-Chloro-3-methylphenol	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
4-Chloroaniline	5 U	5 U	-- R	-- R	5 U	5 U	5.3 U	5 U	5 U	5.7 U
4-Chlorophenyl-phenylether	5 U	5 U	5.8 UJ	5 UJ	5 U	5 U	5.3 UJ	5 U	5 U	5.7 UJ
4-Methylphenol	5 U	37	5.8 U	5 U	4 J	5 U	5.3 U	5 U	5 U	5.7 U
4-Nitroaniline	12.5 U	12.5 U	23 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	23 U
4-Nitrophenol	12.5 U	12.5 U	23 U	20 U	12.5 U	12.5 U	21 U	12.5 U	12.5 U	23 U
Acenaphthene	5 U	5 U	0.94 J	-- R	7 J	7 J	1	5 U	5 U	0.23 U
Acenaphthylene	5 U	5 U	5.8 UJ	5 UJ	5 U	5 U	0.015 J	5 U	5 U	0.23 U
Acetophenone	NA	NA	5.8 U	5 U	NA	NA	5.3 U	NA	NA	5.7 U
Anthracene	5 U	5 UJ	0.76 J	0.72 J	5 U	5 U	0.49 J	5 U	5 U	5.7 U
Atrazine	NA	NA	5.8 U	5 U	NA	NA	0.36 J	NA	NA	1.1 U
Benzaldehyde	NA	NA	1.8 J	5 U	NA	NA	5.3 U	NA	NA	5.7 U
Benzo(a)anthracene	5 U	5 UJ	5.8 U	5 U	5 U	5 U	0.11 U	5 U	5 U	0.11 U
Benzo(a)pyrene	5 U	5 UJ	5.8 UJ	5 U	5 U	5 U	0.11 U	5 U	5 U	0.11 U
Benzo(b)fluoranthene	5 U	5 UJ	5.8 UJ	5 U	5 U	5 U	0.11 U	5 U	5 U	0.11 U
Benzo(g,h,i)perylene	5 U	5 UJ	5.8 UJ	5 U	5 U	5 U	0.033 J	5 U	5 U	0.036 J
Benzo(k)fluoranthene	5 U	5 UJ	5.8 UJ	5 U	5 U	5 U	0.21 U	5 U	5 U	0.23 U
Bis(2-chloroethoxy)methane	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Bis(2-chloroethyl)ether	5 U	5 U	5.8 U	-- R	5 U	5 U	0.53 U	5 U	5 U	0.57 U
Bis(2-ethylhexyl)phthalate	5 U	5 U	5.8 U	5 U	5 U	5 U	2.1 UJ	9 J	5.5 U	2.3 UJ
Butylbenzylphthalate	5 U	5 UJ	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Caprolactam	NA	NA	5.8 U	5 U	NA	NA	5.3 U	NA	NA	5.7 U
Carbazole	5 U	5 UJ	NA	NA	6 J	3 J	NA	5 U	5 U	NA
Chrysene	5 U	5 UJ	5.8 U	5 U	5 U	5 U	0.21 U	5 U	5 U	0.23 U
Dibenz(a,h)anthracene	5 U	5 UJ	5.8 UJ	5 U	5 U	5 U	0.024 J	5 U	5 U	0.027 J
Dibenzofuran	5 U	5 U	0.93 J	0.87 J	6 J	6 J	5.3 U	5 U	5 U	5.7 U
Diethylphthalate	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Dimethylphthalate	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Di-n-butylphthalate	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Di-n-octylphthalate	5 U	5 UJ	5.8 UJ	5 UJ	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Fluoranthene	5 U	5 UJ	5.8 U	5 U	5 U	5 U	0.98 J	5 U	5 U	5.7 U
Fluorene	5 U	1 J	1.2 J	5 UJ	6 J	6 J	1.8 J	5 U	5 U	5.7 U
Hexachlorobenzene	5 U	5 UJ	5.8 U	5 U	5 U	5 U	1.1 U	5 U	5 U	1.1 U
Hexachlorobutadiene	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Hexachlorocyclopentadiene	5 U	5 U	-- R	-- R	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Hexachloroethane	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Indeno(1,2,3-cd)pyrene	5 U	5 UJ	5.8 UJ	5 U	5 U	5 U	0.025 J	5 U	5 U	0.027 J
Isophorone	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Naphthalene	41	40	5.8 U	-- R	54	34	0.2 U	5 U	5 U	0.23 U
Nitrobenzene	5 UJ	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 UJ	5 U	5.7 U
N-Nitroso-di-n-propylamine	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
N-Nitrosodiphenylamine	5 U	5 UJ	5.8 U	0.4 J	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Pentachlorophenol	12.5 U	12.5 UJ	5.8 U	5 U	12.5 U	12.5 U	1.1 U	12.5 U	12.5 U	1.1 U
Phenanthrene	5 U	5 UJ	0.33 J	0.31 J	8 J	8 J	2.1	5 U	5 U	0.016 J
Phenol	5 U	5 U	5.8 U	5 U	5 U	5 U	5.3 U	5 U	5 U	5.7 U
Pyrene	5 U	5 UJ	5.8 U	0.12 J	5 U	5 U	0.46	5 U	5 U	0.23 U
Pesticides/PCBs (ug/L)										
4,4'-DDD	0.005 U	0.03	-- R	-- R	0.0025 U	0.003 U	-- R	0.0025 U	0.003 U	NA
4,4'-DDE	0.005 U	0.003 U	-- R	-- R	0.0025 U	0.003 U	0.01 UJ	0.0025 U	0.003 U	NA
4,4'-DDT	0.0025 U	0.003 U	-- R	0.013 J	0.0025 U	0.003 U	0.01 UJ	0.0025 U	0.003 U	NA
Aldrin	0.003 U	0.002 U	-- R	-- R	0.0015 U	0.01	0.005 UJ	0.0015 U	0.0015 U	NA
alpha-BHC	0.003 UJ	0.002 UJ	-- R	-- R	0.0015 U	0.0015 UJ	0.005 UJ	0.0015 UJ	0.0015 U	NA

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	MW-213S NX 4/6/1995	MW-213S NX 7/27/1995	MW-213S NX 12/19/2005	MW-213S FD 12/19/2005	MW-214S NX 4/5/1995	MW-214S NX 7/26/1995	MW-214S NX 12/19/2005	MW-215B NX 4/6/1995	MW-215B NX 7/25/1995	MW-215B NX 12/19/2005
alpha-Chlordane	0.001 J	0.002 U	-- R	-- R	0.0015 U	0.0015 U	0.005 UJ	0.0015 U	0.0015 UJ	NA
beta-BHC	0.003 U	0.002 U	-- R	-- R	0.0015 U	0.0015 U	0.005 UJ	0.0015 U	0.0015 U	NA
delta-BHC	0.003 U	0.002 U	-- R	-- R	0.0015 U	0.0015 U	0.005 UJ	0.0015 U	0.0015 U	NA
Dieldrin	0.003 J	0.003 U	-- R	-- R	0.004 J	0.003 U	0.01 UJ	0.0025 U	0.003 U	NA
Endosulfan I	R	0.002 UJ	-- R	-- R	0.0015 U	0.0015 UJ	0.005 UJ	R	0.0015 U	NA
Endosulfan II	0.005 U	0.003 U	0.016 J	-- R	0.0025 U	0.003 U	0.01 UJ	0.0025 U	0.003 U	NA
Endosulfan Sulfate	0.005 J	0.003 U	-- R	-- R	0.0025 U	0.002 J	0.01 UJ	0.0025 U	0.004 U	NA
Endrin	0.005 U	0.003 U	-- R	-- R	0.0025 U	0.003 U	0.01 UJ	0.0025 U	0.003 U	NA
Endrin Aldehyde	0.01 U	0.0045 U	-- R	-- R	0.004 U	0.0045 U	0.01 UJ	0.004 U	0.0045 U	NA
Endrin Ketone	0.005 U	0.0035 U	0.027 J	0.012 J	0.003 U	0.0035 U	0.01 UJ	0.003 U	0.0035 U	NA
gamma-BHC(Lindane)	0.003 U	0.002 U	-- R	-- R	0.0015 UJ	0.0015 U	0.005 UJ	0.0015 U	0.0015 U	NA
gamma-Chlordane	0.003 U	0.002 U	-- R	-- R	0.002 J	0.0015 U	0.005 UJ	0.0015 U	0.0015 U	NA
Heptachlor	0.003 U	0.002 U	-- R	-- R	0.0015 U	0.0015 U	0.005 UJ	0.0015 U	0.0015 U	NA
Heptachlor Epoxide	0.003 UJ	0.002 UJ	-- R	-- R	0.0015 UJ	0.0015 UJ	0.005 UJ	0.0015 UJ	0.0015 U	NA
Methoxychlor	0.02 J	0.02 U	-- R	-- R	0.015 U	0.015 U	0.05 UJ	0.015 U	0.015 U	NA
Toxaphene	0.305 U	0.175 U	-- R	-- R	0.16 U	0.165 U	0.5 UJ	0.16 U	0.165 U	NA
Aroclor-1016	0.025 U	0.03 U	-- R	-- R	0.025 U	0.03 U	0.1 U	0.025 U	0.03 U	NA
Aroclor-1221	0.05 U	0.06 U	-- R	-- R	0.05 U	0.055 U	0.2 U	0.05 U	0.055 U	NA
Aroclor-1232	0.025 U	0.03 U	-- R	-- R	0.025 U	0.03 U	0.1 U	0.025 U	0.03 U	NA
Aroclor-1242	0.04 J	0.03 U	-- R	-- R	0.025 U	0.03 U	0.1 U	0.025 U	0.03 U	NA
Aroclor-1248	0.025 U	0.03 U	-- R	-- R	0.15	0.03 U	0.1 U	0.025 U	0.03 U	NA
Aroclor-1254	0.02 J	0.03 U	-- R	-- R	0.025 U	0.03 U	0.1 U	0.025 U	0.03 U	NA
Aroclor-1260	0.03 J	0.03 U	-- R	-- R	0.025 U	0.03 U	0.1 U	0.025 U	0.03 U	NA
Metals (ug/L)										
Aluminum	51.5 U	77 U	50.0 U	50.0 U	12.5 U	48.85 U	50.0 U	12.5 U	47.35 U	117
Antimony	1.5 U	0.95 U	2.0 U	2.0 U	1.5 U	0.95 U	2.0 U	1.5 U	0.95 U	2.0 U
Arsenic	4 U	3.1	1.7	1.7	55.6 J	39.7	88.8	4 U	7.5	4.2
Barium	1340	2000	801	873	134	137	41.2	6	2.1 U	3.9 J
Beryllium	0.5 U	0.21 U	1.0 U	1.0 U	0.5 U	0.185 U	1.0 U	0.5 U	0.05 U	1.0 U
Cadmium	1 U	0.25 U	1.0 U	0.075 J	1 U	0.25 U	1.0 U	1 U	0.25 U	0.088 J
Calcium	88500	55000	127000	124000	12100	10200	8000	15600	14200	16800
Chromium	2.5 U	5.4	4.1	4.0	2.5 U	0.35 U	0.083 J	2.5 U	0.75 U	0.27 J
Cobalt	1 U	2.3	0.75 J	0.73 J	6.3	3.6	2.3	1 U	0.25 U	1.0 U
Copper	57.8 J	1.45 U	3.5 UJ	3.4 UJ	1.5 U	0.25 U	2.0 UJ	1.5 U	0.85 U	2.0 UJ
Iron	14100	27900	12200	11800	45800	42500	57400	15 U	22.6 U	100 U
Lead	32.7	21.7	3.3 J	3.4 J	3.5	1.9	0.36 J	1.5 U	1.9	0.37 J
Magnesium	18600	14000	24100	23400	1530	1160	1360 J	3740	3470	4040 J
Manganese	316	2060	803	744	5420	4040	4550	47.3	80.7	30.7
Mercury	0.1 U	0.1 U	0.20 UJ	0.20 UJ	0.1 U	0.1 U	0.20 UJ	0.1 U	0.1 U	0.20 UJ
Nickel	12	21.8	9.9 J	9.5 J	5 U	1.2 U	1.0 J	5 U	1.2 U	0.44 J
Potassium	25400	27200 J	22200 J	21400 J	1120	946 J	878 J	4780	2860 J	2460 J
Selenium	2.5 U	1.7 U	2.6 J	2.7 J	2.5 U	1.7 U	5.0 UJ	2.5 U	1.7 U	5.0 UJ
Silver	1.5 U	0.3 U	1.0 U	1.0 U	1.5 U	0.3 U	1.0 U	1.5 U	0.3 U	1.0 U
Sodium	168000	219000	208000	199000	9410	8300	8000	16200	14000	15900
Thallium	4 U	1.8 U	0.50 U	0.50 U	4 U	1.8 U	0.50 U	4 U	1.8 U	0.50 U
Vanadium	1 U	2.5	1.0 J	1.0 J	1 U	0.86	1.0 UJ	1 U	0.3 U	1.3 J
Zinc	137 J	347	32.4 J	30.0 J	140 J	106	86.3 J	2 U	0.6 U	9.6 J
1,4-Dioxanes (ug/L)										
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-01 NX 3/28/1995	OW-01 NX 7/18/1995	OW-01 NX 12/20/2005	OW-02 NX 3/28/1995	OW-02 NX 7/18/1995	OW-02 NX 12/20/2005	OW-07 NX 4/4/1995	OW-07 NX 7/24/1995	OW-07 NX 2/22/2006	OW-08 AV 4/6/1995	OW-08 NX 7/24/1995	OW-08 NX 2/22/2006	OW-09 AV 4/4/1995	OW-09 AV 7/21/1995	OW-09 NX 12/15/2005
VOCs (ug/L)															
1,1,1-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	22	10 U	10 U	0.66
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethane	10 U	10 U	1.4	10 U	10 U	0.5 U	10 U	10 U	0.34 J	10 U	10 U	38	9 J	9.5 J	4.8
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	2 J	1.4
1,2-Dichloroethane	2 J	10 U	0.74	10 U	10 U	0.5 U	10 U	10 U	0.54 U	10 U	10 U	2.7 U	4 J	4.5 J	2.6
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	8 J	4 J	NA	10 U	10 U	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.21 J	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	3 J	1.6	10 U	10 U	0.32 J
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Acetone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	345	350	59	10 U	10 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U
Bromoform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U
Bromomethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.36 J	10 U	10 U	0.5 U
Chlorobenzene	3 J	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	46	10 U	10 U	0.86
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	1.6	10 U	10 U	0.58	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.87
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	8.6	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.39 J	NA	NA	0.5 U
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.52	10 U	10 U	0.5 U
Methyl acetate	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 UJ
Methyl tert-butyl ether	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.089 J
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	3.2
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.52	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.58	NA	NA	0.5 U	NA	NA	0.093 J
trans-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U
Trichloroethene	5 J	5 J	1.5	10 U	10 U	0.5 U	23	21	4.6	10 U	10 U	0.13 J	10 U	10 U	2.2
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	9.5 J	13	4.8	10 U	10 U	0.5 U
SVOCs (ug/L)															
1,1'-Biphenyl	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	5 U	NA	NA	5 U	NA	NA	5.7 UJ
1,2,4,5-Tetrachlorobenzene	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5.7 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5.7 U
2,4,5-Trichlorophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	23 U
2,4,6-Trichlorophenol	10 U	10 UJ	5 U	10 U	10 UJ	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
2,4-Dichlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
2,4-Dimethylphenol	10 U	10 UJ	5 U	10 U	10 UJ	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 UJ	5.7 U
2,4-Dinitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	23 U
2,4-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
2,6-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-01 NX 3/28/1995	OW-01 NX 7/18/1995	OW-01 NX 12/20/2005	OW-02 NX 3/28/1995	OW-02 NX 7/18/1995	OW-02 NX 12/20/2005	OW-07 NX 4/4/1995	OW-07 NX 7/24/1995	OW-07 NX 2/22/2006	OW-08 AV 4/6/1995	OW-08 NX 7/24/1995	OW-08 NX 2/22/2006	OW-09 AV 4/4/1995	OW-09 AV 7/21/1995	OW-09 NX 12/15/2005
2-Chloronaphthalene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
2-Chlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
2-Methylnaphthalene	10 UJ	10 U	0.24 UJ	10 UJ	10 U	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.23 U
2-Methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
2-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 UJ	25 U	20 U	25 UJ	25 U	20 U	25 UJ	25 U	23 U
2-Nitrophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
3,3'-Dichlorobenzidine	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 UJ	5 U	10 U	10 UJ	5 U	10 U	10 U	5.7 U
3-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	23 U
4,6-Dinitro-2-methylphenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	23 U
4-Bromophenyl-phenylether	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
4-Chloro-3-methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
4-Chloroaniline	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
4-Chlorophenyl-phenylether	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 UJ
4-Methylphenol	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
4-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	23 U
4-Nitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	23 U
Acenaphthene	10 U	10 U	0.24 UJ	10 U	10 U	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.044 J
Acenaphthylene	10 U	10 U	0.24 UJ	10 U	10 U	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.23 U
Acetophenone	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5.7 U
Anthracene	10 U	10 UJ	5 UJ	10 U	10 UJ	5 UJ	10 UJ	10 U	5 U	10 U	10 UJ	5 U	10 UJ	10 UJ	5.7 U
Atrazine	NA	NA	5 U	NA	NA	5 UJ	NA	NA	R	NA	NA	R	NA	NA	1.1 U
Benzaldehyde	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5.7 U
Benzo(a)anthracene	10 U	10 U	0.12 UJ	10 U	10 U	0.12 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Benzo(a)pyrene	10 U	10 U	0.12 UJ	10 U	10 U	0.12 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Benzo(b)fluoranthene	10 U	10 U	0.12 UJ	10 U	10 U	0.12 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Benzo(g,h,i)perylene	10 UJ	10 U	0.24 UJ	10 UJ	10 U	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.23 U
Benzo(k)fluoranthene	10 U	10 U	0.24 UJ	10 U	10 U	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.23 U
Bis(2-chloroethoxy)methane	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Bis(2-chloroethyl)ether	10 U	10 U	0.065 J	10 U	10 U	0.58 UJ	10 U	10 U	0.093 J	10 U	10 U	0.5 U	10 U	10 U	0.44 J
Bis(2-ethylhexyl)phthalate	10 U	10 U	2.4 UJ	10 U	10 U	2.3 UJ	10 U	10 U	2 UJ	10 UJ	10 U	2 UJ	10 U	10 U	2.3 UJ
Butylbenzylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5.7 U
Caprolactam	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5.7 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.24 UJ	10 U	10 U	0.23 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.23 U
Dibenz(a,h)anthracene	10 U	10 U	0.12 UJ	10 U	10 U	0.12 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Dibenzofuran	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Diethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Dimethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Di-n-butylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Di-n-octylphthalate	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5.7 U
Fluoranthene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Fluorene	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5.7 U
Hexachlorobenzene	10 U	10 U	1.2 UJ	10 U	10 U	1.2 UJ	10 U	10 U	1 U	10 U	10 U	1 U	10 U	10 U	1.1 U
Hexachlorobutadiene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Hexachlorocyclopentadiene	10 UJ	10 UJ	5 U	10 UJ	10 UJ	5 U	R	10 U	5 U	10 U	10 U	5 U	R	10 UJ	5.7 U
Hexachloroethane	10 U	10 UJ	5 U	10 U	10 UJ	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.12 UJ	10 U	10 U	0.12 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U	10 U	10 U	0.11 U
Isophorone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Naphthalene	10 U	10 UJ	0.24 UJ	10 U	10 UJ	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.23 U
Nitrobenzene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5.7 U
N-Nitroso-di-n-propylamine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
N-Nitrosodiphenylamine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7 U
Pentachlorophenol	25 U	25 U	1.2 UJ	25 U	25 U	1.2 UJ	25 U	25 U	1 U	25 U	25 U	1 U	25 U	25 U	1.1 U
Phenanthrene	10 U	10 U	0.24 UJ	10 U	10 U	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.23 U
Phenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5.7	10 U	10 U	5.7 U
Pyrene	10 U	10 UJ	0.24 UJ	10 U	10 UJ	0.23 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U	10 U	10 U	0.039 J
Pesticides/PCBs (ug/L)															
4,4'-DDD	0.005 U	0.005 U	NA	0.006 U	0.005 U	NA	0.006 U	0.006 U	0.01 UJ	0.005 U	0.006 U	0.01 UJ	0.005 U	0.0004 J	-- R
4,4'-DDE	0.005 U	0.0007 J	NA	0.006 U	0.001 J	NA	0.006 U	0.003 J	0.01 UJ	0.005 U	0.006 U	0.01 UJ	0.005 U	0.005 J	0.01 U
4,4'-DDT	0.005 U	0.005 U	NA	0.006 U	0.005 U	NA	0.006 U	0.002 J	0.01 UJ	0.005 U	0.006 U	0.01 UJ	0.005 U	0.005 U	0.01 U
Aldrin	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.002 J	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 U
alpha-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 UJ	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 UJ

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-01 NX 3/28/1995	OW-01 NX 7/18/1995	OW-01 NX 12/20/2005	OW-02 NX 3/28/1995	OW-02 NX 7/18/1995	OW-02 NX 12/20/2005	OW-07 NX 4/4/1995	OW-07 NX 7/24/1995	OW-07 NX 2/22/2006	OW-08 AV 4/6/1995	OW-08 NX 7/24/1995	OW-08 NX 2/22/2006	OW-09 AV 4/4/1995	OW-09 AV 7/21/1995	OW-09 NX 12/15/2005
alpha-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 UJ	0.001 J	0.003 U	0.0051 J
beta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 U
delta-BHC	0.0004 J	0.0008 J	NA	0.003 U	0.0006 J	NA	0.003 U	0.002 J	0.005 UJ	0.003 U	0.003 U	0.005 UJ	0.003 U	0.002 J	0.005 U
Dieldrin	0.005 U	0.005 U	NA	0.0008 J	0.005 U	NA	0.006 U	0.006 U	0.01 UJ	0.005 U	0.006 U	0.01 UJ	0.005 U	0.005 U	0.01 U
Endosulfan I	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 UJ	0.005 UJ	0.003 U	0.003 UJ	0.005 UJ	0.003 U	0.003 UJ	0.005 U
Endosulfan II	0.005 U	0.005 U	NA	0.006 U	0.005 U	NA	0.006 U	0.006 U	0.01 UJ	0.005 U	0.002 J	0.01 UJ	0.003 J	0.005 U	0.01 U
Endosulfan Sulfate	0.005 U	0.005 U	NA	0.0002 J	0.005 U	NA	0.004 J	0.006 U	0.01 UJ	0.005 U	0.006 U	0.01 UJ	0.0005 J	0.005 U	0.01 U
Endrin	0.005 U	0.005 U	NA	0.006 U	0.005 U	NA	0.006 U	0.001 J	0.01 UJ	0.005 U	0.006 U	0.01 UJ	0.005 U	0.005 U	0.01 UJ
Endrin Aldehyde	0.009 U	0.008 U	NA	0.009 U	0.008 U	NA	0.009 U	0.009 U	0.01 UJ	0.009 U	0.009 U	0.01 UJ	0.008 U	0.008 U	0.01 U
Endrin Ketone	0.006 U	0.006 U	NA	0.007 U	0.006 U	NA	0.007 U	0.007 U	0.01 UJ	0.006 U	0.007 U	0.01 UJ	0.006 U	0.006 U	0.01 U
gamma-BHC(Lindane)	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 UJ	0.003 U	0.005 UJ	0.003 UJ	0.003 U	0.005 UJ
gamma-Chlordane	0.0005 J	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 UJ	0.003 U	0.005 UJ	0.0004 J	0.003 U	0.005 U
Heptachlor	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 UJ	0.003 U	0.003 U	0.005 U
Heptachlor Epoxide	0.002 J	0.003 U	NA	0.0002 J	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 UJ	0.003 U	0.005 UJ	0.005 J	0.003 U	0.005 U
Methoxychlor	0.03 U	0.03 U	NA	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 UJ	0.007 J	0.03 U	0.05 UJ	0.03 U	0.03 U	0.05 U
Toxaphene	0.32 U	0.31 U	NA	0.33 U	0.32 U	NA	0.34 U	0.33 U	0.5 UJ	0.33 U	0.34 U	0.5 UJ	0.32 U	0.32 U	0.5 U
Aroclor-1016	0.05 U	0.05 U	NA	0.06 U	0.05 U	NA	0.06 U	0.06 U	0.1 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.1 U
Aroclor-1221	0.11 U	0.1 U	NA	0.11 U	0.1 U	NA	0.11 U	0.11 U	0.2 U	0.11 U	0.11 U	0.2 U	0.1 J	0.1 U	0.2 U
Aroclor-1232	0.05 U	0.05 U	NA	0.06 U	0.05 U	NA	0.05 J	0.06 U	0.1 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.1 U
Aroclor-1242	0.05 U	0.05 U	NA	0.06 U	0.05 U	NA	0.06 U	0.06 U	0.1 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.1 U
Aroclor-1248	0.05 U	0.05 U	NA	0.06 U	0.05 U	NA	0.06 U	0.06 U	0.1 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.1 U
Aroclor-1254	0.05 U	0.05 U	NA	0.06 U	0.05 U	NA	0.06 U	0.06 U	0.1 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.1 U
Aroclor-1260	0.08	0.05 U	NA	0.006 J	0.05 U	NA	0.06 U	0.06 U	0.1 U	0.05 U	0.06 U	0.1 U	0.05 U	0.05 U	0.1 U
Metals (ug/L)															
Aluminum	44 U	165 U	50.0 U	25 U	139 U	50.0 U	210	56.7 U	60.6	25 U	136 U	28.0 J	1600	1965	3200
Antimony	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 UJ	3 U	1.9 U	2.0 UJ	3 U	1.9 U	2.0 U
Arsenic	8 U	2.7 U	2.4	21.2 U	17.6	11.9	8.1	7.6	7.2	13.3 J	5.5	14.4	8 U	2.7 U	1.5
Barium	3.6 U	5.2 U	2.6 J	24.5	21.7	26.1	39.6	47.7	32.4	36	33.4	23.7	39.05	35.7	105
Beryllium	1 U	0.41 U	1.0 U	1 U	0.4 U	1.0 U	1 U	0.1 U	1.0 U	1 U	0.1 U	1.0 U	2.1	2 U	3.1 J
Cadmium	2 U	0.5 U	0.18 J	2 U	0.5 U	0.38 J	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U	2 U	2.05	18.3
Calcium	78900	75800	71300	37900	33000	36700	35100	57500 J	44200	47600	46300 J	37700	104500	122000 J	304000
Chromium	5 U	0.88 U	0.095 J	5 U	0.7 U	0.15 J	20.6 J	0.7 U	2.0 U	5 U	0.91 U	0.48 J	5 U	0.7 U	1.4 J
Cobalt	2 U	0.72 U	0.40 J	2 U	1.6 U	2.2	2.3	2.1 U	1.2 U	2 U	0.91 U	1.0 U	103.5	134.5	341
Copper	3 U	1.9 U	2.0 UJ	3 U	1.5 U	2.0 UJ	34.7 J	1.6 U	2.2 U	3 U	1.7 U	2.0 U	14.55 J	7.9	135 J
Iron	117	78.7 U	100 U	3380	2270	1280	1130 J	849	1270	3615	3330	3160	531.5	805	770
Lead	3 UJ	1.6 UJ	1.0 UJ	3 UJ	1.6 UJ	0.24 J	25.2	1.6 U	0.25 J	3 U	1.6 U	0.11 J	20.95 J	1.6 U	6.1 J
Magnesium	8610	7980	6700	4720	3780	5110	9340	9090 J	7870	15200	14400 J	6580	20850	24350 J	60800
Manganese	273	229	158	2280	1790	2320	1830	1340	2110	967	927	567	7275	8745	22600
Mercury	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	10 U	3.2 U	1.2 J	10 U	3 U	2.5 J	14.2	2.4 U	1.0 U	10 U	2.4 U	1.0 U	99.1	121.5	286 J
Potassium	3090	2950	2090 J	4630	3940	3050 J	13400	7510	4600 J	9825	8260	5850 J	10600	10800	17900 J
Selenium	5 UJ	3.4 U	5.0 UJ	5 UJ	3.4 U	5.0 UJ	5 U	3.4 U	5.0 U	4.15 J	3.4 U	5.0 U	5 U	3.4 U	5.0 UJ
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	0.63 J
Sodium	46700	51000	36000	72600	79200	77700	485000	131000 J	48400	47400	51500 J	39500	136500	148000 J	311000
Thallium	8 UJ	3.6 U	0.50 U	8 UJ	3.6 U	0.50 U	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U
Vanadium	2 U	0.6 U	0.31 J	2 U	0.6 U	0.51 J	2 U	0.6 U	0.31 J	2 U	1	0.43 J	2 U	0.6 U	1.4 J
Zinc	4 U	7.7 U	2.0 U	4 U	8 U	2.0 U	35.4	11.6 U	2.0 U	4 U	2.3 U	2.0 U	146.5	166	357 J
1,4-Dioxanes (ug/L)															
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-10 NX 4/5/1995	OW-10 AV 7/24/1995	OW-10 NX 12/15/2005	OW-12 NX 4/5/1995	OW-12 NX 7/24/1995	OW-12 NX 12/15/2005	OW-20 AV 4/4/1995	OW-20 NX 7/25/1995	OW-20 NX 12/21/2005	OW-25 NX 4/7/1995	OW-25 NX 7/24/1995	OW-25 NX 12/13/2005	OW-26 NX 4/7/1995	OW-26 NX 7/24/1995	OW-26 NX 12/13/2005
VOCs (ug/L)															
1,1,1-Trichloroethane	10 U	10 U	0.64	10 U	10 U	0.5 U	10 U	10 U	9.1	10 U	10 U	0.94	10 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	3 J	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethane	4 J	4 J	4.7	10 U	10 U	0.5 U	10	7 J	11	10 U	10 U	1.6	10 U	10 U	0.28 J
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	4.8 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	1.5	10 U	10 U	0.5 U	10 U	10 U	0.46 J	10 U	10 U	0.29 J	10 U	10 U	0.41 J
1,2-Dichloroethane	10 U	10 U	2.6	10 U	10 U	0.5 U	3 J	3 J	0.66	10 U	10 U	1.3	10 U	10 U	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.56	10 U	10 U	0.81	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.31 J	10 U	10 U	0.5 U	10 U	10 U	0.6	10 U	10 U	0.5 U	10 U	10 U	0.27 J
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	11	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Acetone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.37 J	10 U	10 U	0.26 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.34 J	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromoform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 U	0.73 U	10 U	10 U	0.5 U
Bromomethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	7.8 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chlorobenzene	10 U	10 U	0.87	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.17 J	10 U	10 U	0.41 J
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	3.2	10 U	10 U	0.5 U	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.85	NA	NA	0.24 J	NA	NA	0.5 UJ	NA	NA	0.6	NA	NA	0.31 J
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.43 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Methyl acetate	NA	NA	0.5 UJ	NA	NA	0.5 UJ	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.5 U	NA	NA	0.093 J	NA	NA	0.98	NA	NA	0.25 J	NA	NA	0.5 U
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.16 J	NA	NA	0.76	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ
Tetrachloroethene	10 U	10 U	3.2	10 U	10 U	0.5 U	10 U	10 U	39	10 U	10 U	4.4	10 U	10 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.32 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.076 J	NA	NA	0.5 U	NA	NA	0.21 J	NA	NA	0.5 U	NA	NA	0.096 J
trans-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichloroethene	10 U	10 U	2.2	10 U	10 U	0.5 U	10 U	10 U	7 J	10 U	10 U	3.2	10 U	10 U	0.08 J
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.11 J	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	1.7	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
SVOCs (ug/L)															
1,1'-Biphenyl	NA	NA	5.7 UJ	NA	NA	5.7 UJ	NA	NA	5 UJ	NA	NA	5 U	NA	NA	5 U
1,2,4,5-Tetrachlorobenzene	NA	NA	5.7 U	NA	NA	5.7 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4,5-Trichlorophenol	25 U	25 U	23 U	25 U	25 U	23 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2,4,6-Trichlorophenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dichlorophenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dimethylphenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dinitrophenol	25 UJ	25 U	23 U	25 UJ	25 U	23 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2,4-Dinitrotoluene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,6-Dinitrotoluene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-10 NX 4/5/1995	OW-10 AV 7/24/1995	OW-10 NX 12/15/2005	OW-12 NX 4/5/1995	OW-12 NX 7/24/1995	OW-12 NX 12/15/2005	OW-20 AV 4/4/1995	OW-20 NX 7/25/1995	OW-20 NX 12/21/2005	OW-25 NX 4/7/1995	OW-25 NX 7/24/1995	OW-25 NX 12/13/2005	OW-26 NX 4/7/1995	OW-26 NX 7/24/1995	OW-26 NX 12/13/2005
2-Chloronaphthalene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Chlorophenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Methylnaphthalene	10 U	10 U	0.23 U	3 J	4 J	1.2	10 U	10 U	0.1 J	10 U	10 U	0.2 U	10 U	10 U	0.2 U
2-Methylphenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Nitroaniline	25 U	25 U	23 U	25 U	25 U	23 U	25 UJ	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2-Nitrophenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
3,3'-Dichlorobenzidine	10 UJ	10 UJ	5.7 U	10 UJ	10 UJ	5.7 U	10 UJ	10 U	5 U	10 U	10 UJ	5 UJ	10 U	10 UJ	5 UJ
3-Nitroaniline	25 U	25 U	23 U	25 U	25 U	23 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4,6-Dinitro-2-methylphenol	25 U	25 U	23 U	25 U	25 U	23 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4-Bromophenyl-phenylether	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chloro-3-methylphenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chloroaniline	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chlorophenyl-phenylether	10 U	10 U	5.7 UJ	10 U	10 U	5.7 UJ	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U
4-Methylphenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Nitroaniline	25 U	25 U	23 U	25 U	25 U	23 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4-Nitrophenol	25 U	25 U	23 U	25 U	25 U	23 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
Acenaphthene	10 U	10 U	0.035 J	10 U	10 U	0.23 U	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Acenaphthylene	10 U	10 U	0.23 U	10 U	10 U	0.23 U	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Acetophenone	NA	NA	5.7 U	NA	NA	5.7 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Anthracene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Atrazine	NA	NA	0.13 J	NA	NA	1.1 U	NA	NA	R	NA	NA	0.28 J	NA	NA	1 U
Benzaldehyde	NA	NA	5.7 U	NA	NA	5.7 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Benzo(a)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Benzo(a)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Benzo(b)fluoranthene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Benzo(g,h,i)perylene	10 U	10 U	0.23 U	10 U	10 U	0.23 U	10 U	10 U	0.2 UJ	10 U	10 U	0.097 J	10 U	10 U	0.2 U
Benzo(k)fluoranthene	10 U	10 U	0.23 U	10 U	10 U	0.23 U	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Bis(2-chloroethoxy)methane	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Bis(2-chloroethyl)ether	10 U	10 U	0.058 J	10 U	10 U	0.57 U	10 U	10 U	0.5 UJ	10 U	10 U	0.02 J	10 U	10 U	0.11 J
Bis(2-ethylhexyl)phthalate	3 J	10 U	2.3 UJ	10 U	10 U	2.3 UJ	10 U	10 U	0.5 UJ	4 J	10 U	0.2 U	10 U	10 U	0.38 U
Butylbenzylphthalate	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Caprolactam	NA	NA	5.7 U	NA	NA	5.7 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.23 U	10 U	10 U	0.23 U	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Dibenz(a,h)anthracene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Dibenzofuran	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Diethylphthalate	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Dimethylphthalate	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Di-n-butylphthalate	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Di-n-octylphthalate	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U
Fluoranthene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Fluorene	10 U	10 U	5.7 U	10 U	10 U	0.46 J	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Hexachlorobenzene	10 U	10 U	1.1 U	10 U	10 U	1.1 U	10 U	10 U	1 UJ	10 U	10 U	1 U	10 U	10 U	1 U
Hexachlorobutadiene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Hexachlorocyclopentadiene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	R	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Hexachloroethane	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.11 U	10 U	10 U	0.11 U	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Isophorone	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Naphthalene	10 U	10 U	0.23 U	10 U	3 J	1.1	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Nitrobenzene	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
N-Nitroso-di-n-propylamine	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
N-Nitrosodiphenylamine	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Pentachlorophenol	25 U	25 U	1.1 U	25 U	25 U	1.1 U	25 U	25 U	1 UJ	25 U	25 U	1 U	25 U	25 U	1 U
Phenanthrene	10 U	10 U	0.23 U	10 U	10 U	0.23 U	10 U	10 U	0.04 J	10 U	10 U	0.083 J	10 U	10 U	0.031 J
Phenol	10 U	10 U	5.7 U	10 U	10 U	5.7 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Pyrene	10 U	10 U	0.23 U	10 U	10 U	0.23 U	10 U	10 U	0.2 UJ	10 U	10 U	0.095 J	10 U	10 U	0.2 U
Pesticides/PCBs (ug/L)															
4,4'-DDD	0.005 U	0.005 U	NA	0.005 U	0.005 U	NA	0.005 U	0.006 U	R	0.005 U	0.006 U	NA	0.005 U	0.01 U	0.01 U
4,4'-DDE	0.005 U	0.005 U	NA	0.005 U	0.005 U	NA	0.005 U	0.006 U	0.01 U	0.005 U	0.003 J	NA	0.005 U	0.02	0.01 U
4,4'-DDT	0.005 U	0.005 U	NA	0.005 U	0.005 U	NA	0.005 U	0.006 U	0.01 U	0.005 U	0.006 U	NA	0.005 U	0.01 U	0.01 U
Aldrin	0.0004 J	0.003 U	NA	0.003 U	0.003 U	NA	0.002 J	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.006 U	0.005 U
alpha-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 UJ	0.002 J	NA	0.003 UJ	0.006 U	0.005 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-10 NX 4/5/1995	OW-10 AV 7/24/1995	OW-10 NX 12/15/2005	OW-12 NX 4/5/1995	OW-12 NX 7/24/1995	OW-12 NX 12/15/2005	OW-20 AV 4/4/1995	OW-20 NX 7/25/1995	OW-20 NX 12/21/2005	OW-25 NX 4/7/1995	OW-25 NX 7/24/1995	OW-25 NX 12/13/2005	OW-26 NX 4/7/1995	OW-26 NX 7/24/1995	OW-26 NX 12/13/2005
alpha-Chlordane	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 UJ	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.006 U	0.005 U
beta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.04 J	0.005 U
delta-BHC	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.002 J	0.004 J	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.006 U	0.005 U
Dieldrin	0.005 U	0.005 U	NA	0.005 U	0.005 U	NA	0.005 U	0.006 U	0.01 U	0.005 U	0.006 U	NA	0.005 U	0.01 U	0.01 U
Endosulfan I	0.0008 J	0.003 UJ	NA	0.003 U	0.003 UJ	NA	0.003 U	0.003 U	0.005 U	R	0.004 UJ	NA	R	0.006 UJ	0.005 U
Endosulfan II	0.005 U	0.005 U	NA	0.005 U	0.005 U	NA	0.005 U	0.006 U	0.01 U	0.005 U	0.006 U	NA	0.005 U	0.01 U	0.01 U
Endosulfan Sulfate	0.0004 J	0.005 U	NA	0.005 U	0.005 U	NA	0.003 J	0.006 U	0.01 U	0.001 J	0.006 U	NA	0.004 J	0.01 U	0.01 U
Endrin	0.005 U	0.005 U	NA	0.005 U	0.005 U	NA	0.005 U	0.002 J	0.01 UJ	0.005 U	0.006 U	NA	0.0002 J	0.01 U	0.01 UJ
Endrin Aldehyde	0.008 U	0.008 U	NA	0.008 U	0.008 U	NA	0.008 U	0.009 U	0.01 U	0.009 U	0.01 U	NA	0.008 U	0.02 U	0.01 U
Endrin Ketone	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.0006 J	0.007 U	0.01 U	0.006 U	0.008 U	NA	0.006 U	0.01 U	0.01 U
gamma-BHC(Lindane)	0.003 UJ	0.003 U	NA	0.003 UJ	0.003 U	NA	0.003 U	0.003 U	0.005 UJ	0.003 U	0.004 U	NA	0.003 U	0.006 U	0.005 U
gamma-Chlordane	0.003 UJ	0.003 U	NA	0.003 UJ	0.003 U	NA	0.0007 J	0.0005 J	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.006 U	0.005 U
Heptachlor	0.003 U	0.003 U	NA	0.003 U	0.003 U	NA	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.006 U	0.005 U
Heptachlor Epoxide	0.004 J	0.003 U	NA	0.003 UJ	0.003 U	NA	0.005	0.003 U	0.005 U	0.003 UJ	0.004 U	NA	0.003 UJ	0.006 U	0.005 U
Methoxychlor	0.03 U	0.03 U	NA	0.03 U	0.03 U	NA	0.03 U	0.03 U	0.05 U	0.03 U	0.04 U	NA	0.008 J	0.06 U	0.05 U
Toxaphene	0.32 U	0.32 U	NA	0.32 U	0.32 U	NA	0.3 U	0.34 U	0.5 U	0.32 U	0.38 U	NA	0.32 U	0.64 U	0.5 U
Aroclor-1016	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.06 U	0.2 U	0.05 U	0.06 U	NA	0.05 U	0.11 U	0.2 U
Aroclor-1221	0.11 U	0.1 U	NA	0.11 U	0.11 U	NA	0.1 U	0.11 U	0.4 U	0.11 U	0.12 U	NA	0.1 U	0.22 U	0.4 U
Aroclor-1232	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.06 U	0.2 U	0.05 U	0.06 U	NA	0.05 U	0.11 U	0.2 U
Aroclor-1242	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.06 U	0.2 U	0.05 U	0.06 U	NA	0.05 U	0.11 U	0.2 U
Aroclor-1248	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.06 U	0.2 U	0.05 U	0.06 U	NA	0.05 U	0.11 U	0.2 U
Aroclor-1254	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.06 U	0.2 U	0.05 U	0.06 U	NA	0.05 U	0.11 U	0.2 U
Aroclor-1260	0.05 U	0.05 U	NA	0.05 U	0.05 U	NA	0.05 U	0.06 U	0.2 U	0.05 U	0.06 U	NA	0.05 U	0.11 U	0.2 U
Metals (ug/L)															
Aluminum	2460	2625	1870	1500	1010	419	39 U	108 U	50.0 U	25 U	179 U	61.7 J	51.5 U	113 U	81.7 J
Antimony	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	20.0 U	3 U	2.3 U	2.0 U
Arsenic	8 U	2.7 U	0.25 J	16.1 J	23.4	13.6	12	17.3	10.7	8 U	3.1	2.0 J	36.1	33.7	24.7
Barium	54	53.75	62.4	27.9	6.3 U	11.8	158	159 J	69.8	324	419	313	8.8	15.3 J	5.1 J
Beryllium	2.4	1.7 U	1.6 J	1 U	0.1 U	1.0 U	1 U	0.1 U	1.0 U	1 U	0.1 U	10.0 U	1 U	0.1 U	1.0 U
Cadmium	2 U	1.25	0.96 J	2 U	0.5 U	0.051 J	2 U	0.5 U	0.056 J	2 U	2	1.3 J	2 U	0.5 U	1.0 U
Calcium	50300	55400 J	51900	43200	39500 J	25700	54200	57400	34700	359000	410000 J	563000	25400	46000	19800
Chromium	5 U	0.7 U	0.32 J	8.2 J	1.1 U	0.16 J	5 U	1.1 U	2.0 U	5 U	1.3 U	20.0 U	5 U	1.1 U	1.1 J
Cobalt	45.4	54.65	41.5	2 U	0.5 U	0.28 J	35.05	37.4	24.7	5.8	9.8	12.2	2 U	0.5 U	1.0 U
Copper	7 J	8.7	8.6 J	22.4 J	1.3 U	2.0 UJ	3 U	2.6 U	1.0 J	3 U	3.5 U	20.0 U	5.9 J	1.8 U	2.0 U
Iron	1590	1675	443	2210	3080	293	5930 J	6780	9160	33	83.1	489 J	30.4	92.5	100 UJ
Lead	3 UJ	1.6 U	0.60 J	63.6	1.6 U	1.0 UJ	3 UJ	1.6 U	1.0 U	3 UJ	1.6 U	10.0 U	3 UJ	1.6 U	0.78 J
Magnesium	9430	9985 J	9500	1430	1330 J	5000 U	11400	11300	5350	41600	49000 J	74700	2030	3620	1190 J
Manganese	2850	3205	2820	530	585	82.2	3930	4160	3480	3330	3740	5970 J	11.7	22.4	7.6 J
Mercury	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	43.8	49.9	36.2 J	10 U	2.4 U	2.2 J	14.15	16.2	11.4	10 U	3.8	10.0 U	10 U	3.6	1.6
Potassium	5240	5005	3150 J	8380	7820	18800 J	18450	16700 J	6660	67900	82300	47300	8910	11200 J	3620 J
Selenium	5 U	3.4 U	0.15 J	5 U	3.4 U	5.0 UJ	5 U	3.4 U	5.0 U	5 U	3.4 U	50.0 U	5 U	3.4 U	5.0 U
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	R	0.6 U	10.0 U	R	0.6 U	1.0 U
Sodium	65300	86550 J	68800	31100	42000 J	39800	292500	288000	111000	3030000	4500000 J	4070000	233000	279000	141000
Thallium	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 UJ	9 J	3.6 U	5.0 U	8 U	3.6 U	0.50 U
Vanadium	2 U	0.6 U	1.0 UJ	2 U	1	1.1 J	2 U	0.6 U	1.0 UJ	2 U	1.1	1.4 J	2 U	1.7	0.64 J
Zinc	106	113	80.9 J	39.5 J	2.5 U	2.0 U	6	3.8 U	4.6	4 U	4.7 U	45.9 UJ	4 U	22.3 U	10.2 UJ
1,4-Dioxanes (ug/L)															
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-35 NX 3/31/1995	OW-35 NX 7/21/1995	OW-35 NX 12/21/2005	OW-37 NX 4/4/1995	OW-37 NX 7/28/1995	OW-37 NX 12/21/2005	OW-38 NX 4/4/1995	OW-38 NX 7/28/1995	OW-38 NX 12/21/2005	OW-49 NX 4/7/1995	OW-49 NX 7/26/1995	OW-49 NX 12/14/2005	OW-50 NX 4/7/1995	OW-50 NX 7/26/1995	OW-50 NX 12/14/2005
VOCs (ug/L)															
1,1,1-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,1,2-Trichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,1-Dichloroethane	10 U	10 U	0.5 U	4 J	3 J	1.7	10 U	10 U	15	5 J	5 J	1.3	10 U	10 U	0.23 J
1,1-Dichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.26 J	10 U	10 U	1.7	5 J	3 J	0.5 U	10 U	10 U	0.5 U
1,2,3-Trichlorobenzene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 UJ	10 U	0.5 U	10 U	10 U	0.5 U
1,2-Dibromo-3-chloropropane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromoethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
1,2-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.35 J	10 U	10 U	0.5 U
1,2-Dichloroethane	10 U	10 U	0.5 U	10 U	10 U	0.47 J	10 U	10 U	0.5 U	6 J	8 J	5	10 U	10 U	0.5 U
1,2-Dichloroethene(total)	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	5 J	8 J	NA	10 U	10 U	NA
1,2-Dichloropropane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,3-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
1,4-Dichlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	1.7	10 UJ	10 U	0.14 J	10 U	10 U	0.5 U
2-Butanone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Hexanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
4-Methyl-2-pentanone	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
Acetone	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Benzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.63	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Benzene, (1-methylethyl)-	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Bromodichloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Bromoform	10 U	10 UJ	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U
Bromomethane	10 U	10 UJ	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 UJ	0.5 U	10 U	10 UJ	0.5 U
Carbon Disulfide	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Carbon Tetrachloride	10 U	10 U	0.5 U	10 U	10 U	0.56	10 U	10 U	37	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chlorobenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloroform	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Chloromethane	10 U	10 U	0.5 U	10 U	10 U	0.11 J	10 U	10 U	0.48 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
cis-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	2.4	NA	NA	0.5 U
cis-1,3-Dichloropropene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Cyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Ethylbenzene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.1 J	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Methyl acetate	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methyl tert-butyl ether	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.11 J	NA	NA	0.26 J	NA	NA	1.4
Methylcyclohexane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Methylene Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Styrene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Tetrachloroethene	10 U	10 U	0.5 U	10 U	10 U	1.3	10 U	10 U	14	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Toluene	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
trans-1,2-Dichloroethene	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
trans-1,3-Dichloropropene	10 U	10 UJ	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Trichloroethene	10 U	10 U	0.5 U	10 U	10 U	0.28 J	10 U	10 U	2	22	25	7.8	10 U	10 U	0.18 J
Trichlorofluoromethane	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U	NA	NA	0.5 U
Vinyl Chloride	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
Xylene (total)	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U	10 U	10 U	0.5 U
SVOCs (ug/L)															
1,1'-Biphenyl	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	5 UJ	NA	NA	5 U	NA	NA	5 U
1,2,4,5-Tetrachlorobenzene	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
2,2'-Oxybis(1-chloropropane)	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4,5-Trichlorophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2,4,6-Trichlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dichlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dimethylphenol	10 U	10 UJ	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,4-Dinitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2,4-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	6.7	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2,6-Dinitrotoluene	10 U	10 U	5 U	10 U	10 U	1.3 J	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-35 NX 3/31/1995	OW-35 NX 7/21/1995	OW-35 NX 12/21/2005	OW-37 NX 4/4/1995	OW-37 NX 7/28/1995	OW-37 NX 12/21/2005	OW-38 NX 4/4/1995	OW-38 NX 7/28/1995	OW-38 NX 12/21/2005	OW-49 NX 4/7/1995	OW-49 NX 7/26/1995	OW-49 NX 12/14/2005	OW-50 NX 4/7/1995	OW-50 NX 7/26/1995	OW-50 NX 12/14/2005
2-Chloronaphthalene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Chlorophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Methylnaphthalene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
2-Methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Nitroaniline	25 U	25 U	20 U	25 UJ	25 U	20 U	25 UJ	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
2-Nitrophenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
3,3'-Dichlorobenzidine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 UJ	10 U	10 U	5 UJ
3-Nitroaniline	25 U	25 U	20 U	25 U	25 U	6.2 J	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4,6-Dinitro-2-methylphenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4-Bromophenyl-phenylether	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chloro-3-methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chloroaniline	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Chlorophenyl-phenylether	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U
4-Methylphenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
4-Nitroaniline	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
4-Nitrophenol	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U	25 U	25 U	20 U
Acenaphthene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Acenaphthylene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Acetophenone	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Anthracene	10 UJ	10 UJ	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Atrazine	NA	NA	R	NA	NA	R	NA	NA	R	NA	NA	1 U	NA	NA	1 U
Benzaldehyde	NA	NA	5 U	NA	NA	2 J	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Benzo(a)anthracene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Benzo(a)pyrene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Benzo(b)fluoranthene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Benzo(g,h,i)perylene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Benzo(k)fluoranthene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Bis(2-chloroethoxy)methane	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Bis(2-chloroethyl)ether	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.21 J	10 U	10 U	0.034 J
Bis(2-ethylhexyl)phthalate	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	10 U	0.5 UJ	10 U	24 U	0.2 U	10 U	10 U	0.2 U
Butylbenzylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Caprolactam	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U	NA	NA	5 U
Carbazole	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA	10 U	10 U	NA
Chrysene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Dibenz(a,h)anthracene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Dibenzofuran	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Diethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Dimethylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Di-n-butylphthalate	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Di-n-octylphthalate	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 UJ	10 U	10 U	5 U	10 U	10 U	5 U
Fluoranthene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Fluorene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Hexachlorobenzene	10 U	10 U	1 UJ	10 U	10 U	1 UJ	10 U	10 U	1 UJ	10 U	10 U	1 U	10 U	10 U	1 U
Hexachlorobutadiene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Hexachlorocyclopentadiene	R	10 UJ	5 U	R	10 U	5 U	R	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Hexachloroethane	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 UJ	10 U	10 U	0.1 U	10 U	10 U	0.1 U
Isophorone	10 U	10 U	5 U	10 U	10 U	0.77 J	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Naphthalene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Nitrobenzene	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 UJ	10 U	5 U	10 UJ	10 U	5 U
N-Nitroso-di-n-propylamine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
N-Nitrosodiphenylamine	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Pentachlorophenol	25 U	25 U	1 UJ	25 U	25 U	1 UJ	25 U	25 U	1 UJ	25 U	25 U	1 U	25 U	25 U	1 U
Phenanthrene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Phenol	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Pyrene	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 UJ	10 U	10 U	0.2 U	10 U	10 U	0.2 U
Pesticides/PCBs (ug/L)															
4,4'-DDD	0.005 U	0.005 U	R	0.0004 J	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
4,4'-DDE	0.005 U	0.005 U	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
4,4'-DDT	0.0009 J	0.005 U	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
Aldrin	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA
alpha-BHC	0.003 U	0.003 U	0.005 UJ	0.003 U	0.004 UJ	NA	0.003 U	0.004 UJ	NA	0.003 U	0.004 U	NA	0.003 UJ	0.003 U	NA

TABLE 4-2. COMPARISON OF GROUNDWATER MONITORING RESULTS - HISTORICAL VERSUS WINTER 2005-2006

ANALYTE	OW-35 NX 3/31/1995	OW-35 NX 7/21/1995	OW-35 NX 12/21/2005	OW-37 NX 4/4/1995	OW-37 NX 7/28/1995	OW-37 NX 12/21/2005	OW-38 NX 4/4/1995	OW-38 NX 7/28/1995	OW-38 NX 12/21/2005	OW-49 NX 4/7/1995	OW-49 NX 7/26/1995	OW-49 NX 12/14/2005	OW-50 NX 4/7/1995	OW-50 NX 7/26/1995	OW-50 NX 12/14/2005
alpha-Chlordane	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.004 UJ	NA	0.003 U	0.003 UJ	NA
beta-BHC	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA
delta-BHC	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.002 J	NA	0.003 U	0.001 J	NA	0.003 U	0.003 U	NA
Dieldrin	0.005 U	0.005 U	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
Endosulfan I	0.003 U	0.003 UJ	0.005 U	0.003 U	0.004 UJ	NA	0.003 U	0.004 UJ	NA	0.003 U	0.004 U	NA	R	0.003 U	NA
Endosulfan II	0.005 U	0.005 U	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
Endosulfan Sulfate	0.005 U	0.005 U	0.01 U	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
Endrin	0.005 U	0.005 U	0.01 UJ	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA	0.006 U	0.006 U	NA
Endrin Aldehyde	0.008 U	0.008 U	0.01 U	0.009 U	0.009 U	NA	0.009 U	0.009 U	NA	0.009 U	0.009 U	NA	0.009 U	0.009 U	NA
Endrin Ketone	0.006 U	0.006 U	0.01 U	0.007 U	0.007 U	NA	0.007 U	0.007 U	NA	0.007 U	0.007 U	NA	0.007 U	0.007 U	NA
gamma-BHC(Lindane)	0.003 U	0.003 U	0.005 UJ	0.003 UJ	0.004 U	NA	0.003 UJ	0.004 U	NA	0.003 UJ	0.004 U	NA	0.003 U	0.003 U	NA
gamma-Chlordane	0.003 U	0.003 U	0.005 U	0.003 UJ	0.004 U	NA	0.003 UJ	0.004 U	NA	0.0007 J	0.004 U	NA	0.003 U	0.003 U	NA
Heptachlor	0.003 U	0.003 U	0.005 U	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.004 U	NA	0.003 U	0.003 U	NA
Heptachlor Epoxide	0.003 U	0.003 U	0.005 U	0.003 UJ	0.004 UJ	NA	0.003 UJ	0.004 UJ	NA	0.003 UJ	0.004 U	NA	0.003 UJ	0.003 U	NA
Methoxychlor	0.03 U	0.03 U	0.05 U	0.03 U	0.04 U	NA	0.03 U	0.04 U	NA	0.03 U	0.04 U	NA	0.03 U	0.03 U	NA
Toxaphene	0.31 U	0.31 U	0.5 U	0.33 U	0.35 U	NA	0.33 U	0.35 U	NA	0.33 U	0.35 U	NA	0.33 U	0.33 U	NA
Aroclor-1016	0.05 U	0.05 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA
Aroclor-1221	0.1 U	0.1 U	0.4 U	0.11 U	0.12 U	NA	0.11 U	0.12 U	NA	0.11 U	0.12 U	NA	0.11 U	0.11 U	NA
Aroclor-1232	0.05 U	0.05 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA
Aroclor-1242	0.05 U	0.05 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA
Aroclor-1248	0.05 U	0.05 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA
Aroclor-1254	0.05 U	0.05 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA
Aroclor-1260	0.02 J	0.05 U	0.2 U	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA	0.06 U	0.06 U	NA
Metals (ug/L)															
Aluminum	25 U	81.4 U	50.0 U	47.1 U	126 U	50.0 U	25 U	68 U	50.0 U	25 U	74 U	50.0 UJ	35.1 U	66.3 U	643 J
Antimony	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	1.9 U	2.0 U	3 U	3.2 U	2.0 U	3 U	1.9 U	2.0 U
Arsenic	8 U	2.7 U	8.3	8 U	3	7.4	8 U	9.6 U	8.1	8 U	2.7 U	0.48 J	8 U	2.7 U	6.9
Barium	12	10.5	21.8	117	122	107	19.8	17.4 U	19.8	73.4	67.5 J	36.3	18.1	16 U	25.8
Beryllium	1 U	0.1 U	1.0 U	1 U	0.46 U	1.0 U	1 U	0.15 U	1.0 U	1 U	0.1 U	1.0 U	1 U	0.1 U	0.10 J
Cadmium	2 U	0.5 U	1.0 U	2 U	0.5 U	1.0 U	2 U	0.5 U	0.41 J	2 U	0.5 U	0.43 J	2 U	0.5 U	0.18 J
Calcium	34100	31400 J	43300	119000	120000	105000	28400	22200	25200	75900	66900	52100	28400	27300	22600
Chromium	5 U	0.96 U	2.0 U	5 U	0.7 U	2.0 U	5 U	0.7 U	2.0 U	5 U	0.99 U	2.0 U	16.2	0.79 U	1.4 J
Cobalt	2 U	0.66 U	0.53 J	4.6	5.6	5.3	2 U	1.5 U	1.5	3.3	3.7	2.1	2 U	0.5 U	4.4
Copper	8.3 J	1.6 U	0.77 J	42.2 J	0.5 U	0.66 J	3 U	0.5 U	0.66 J	3 U	1.3 U	2.0 U	3 U	1.5 U	3.2 U
Iron	140	123	536	1190	4770	8000	30 U	259	619	2010	1580	606 J	83.8	28.7 U	1230 J
Lead	3 UJ	1.6 U	0.73 J	7.3 J	1.6 U	1.0 U	3 UJ	1.6 U	1.0 U	3 U	1.6 U	1.0 U	3 UJ	1.6 U	1.1
Magnesium	10600	9160 J	12500	23000	23100	19700	5270	4080	5440	18300	15500	10600	6400	5720	4550 J
Manganese	156	306	327	1340	1370	1390	1370	1110	1700	1260	1210	516 J	888	888	1350 J
Mercury	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ	0.2 U	0.2 U	0.20 UJ
Nickel	10 U	2.4 U	1.0	10 U	2.5	1.4	10 U	2.4 U	0.48 J	10 U	3.3	1.7	10 U	2.4 U	1.7
Potassium	3410	2910	3280 J	15000	16700 J	11400	2930	2370	3270 J	8720	7300 J	4600 J	4990	4440 J	4150 J
Selenium	5 UJ	3.4 U	5.0 U	5 U	3.4 U	5.0 U	5 U	3.4 U	5.0 U	5 U	3.4 U	5.0 U	5 U	3.4 U	5.0 U
Silver	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	3 U	0.6 U	1.0 U	R	0.6 U	1.0 U
Sodium	15900	15100 J	15400	115000	134000	122000	25300	23300 J	23200	39800	39200	34400	34100	35900	36000
Thallium	8 UJ	3.6 U	0.50 UJ	8 U	3.6 U	0.50 UJ	8 U	3.6 U	0.50 UJ	8 U	3.6 U	0.50 U	8 U	3.6 U	0.50 U
Vanadium	2 U	0.6 U	1.0 UJ	2 U	0.6 U	1.0 UJ	2 U	0.6 U	0.35 J	2 U	0.6 U	0.25 J	2 U	0.6 U	2.6 J
Zinc	6	6.8 U	2.3	30.4	1.2 U	2.4	4 U	8.3 U	2.9	4 U	1.2 U	6.4 UJ	4 U	1.2 U	14.8 J
1,4-Dioxanes (ug/L)															
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	NA	NA	NA	NA	NA	0.59 J

Notes
NX - Normal Field Sample
FD - Field Duplicate
AV - Average of Field Duplicates
NA - Not Analyzed

TABLE 4-3. NOTABLE DETECTIONS AND OBSERVATIONS OF WINTER 2005-2006 GROUNDWATER MONITORING ROUND

Well ID	Original Selection Rationale (based on historical monitoring data)	Notable Detections and Observations of Winter 2005-2006 Monitoring Round
Existing Monitoring Wells – "OW" Series		
OW-01	TCE detected at the MCL/PRG (5 ug/L)	TCE now below PRG (1.5 ug/L); detections of 1,1-DCA (1.4 ug/L) and 1,2-DCA (0.74 ug/L); previously detected at 2 ug/L)
OW-02	Mn detected above the PRG	Mn detected at the same magnitude; As above PRG
OW-07	The second highest PCB concentration detected, as well as TCE above the PRG	PCBs now non-detect (ND); TCE reduced from 21 ug/L to 4.6 ug/L; 1,1-DCA (0.34 ug/L); chloromethane (1.6 ug/L); t-1,2-DCE (0.58 ug/L); Mn detected above PRG at similar magnitude to historical results
OW-08	Benzene detected, as well as pesticides	Benzene still detected above PRG, but at 59 ug/L rather than above 300 ug/L; 1,1,1-TCA, 1,1-DCA, and chlorobenzene were previously not detected and are now present at 22, 38, and 46 ug/L, respectively; other miscellaneous VOCs, including BTEX compounds, detected at low concentrations; phenol was the only SVOC detected (5.7 ug/L); pesticides were ND; metals detected at similar magnitude to historical results (Mn and As above PRG)
OW-09	The highest concentration of PCBs detected here	VOCs previously detected (1,1-DCA, 1,2-dichlorobenzene, and 1,2-DCA) decreased in concentration; a few new VOCs detected all at less than 5 ug/L, with most below 1 ug/L; one pesticide (alpha-chlordane) detected (0.0051 ug/L); PCBs were ND; high Mn (22600 ug/L)
OW-10	Mn detected above the PRG	Miscellaneous VOCs and SVOCs detected – none above PRGs; metals at similar magnitude to historical results
OW-12	1,1,2,2-Tetrachloroethane detected above the PRG	1,1,2,2-Tetrachloroethane now ND; miscellaneous VOCs, including BTEX compounds, detected at low concentrations (< 2 ug/L); As above PRG; Mn now below PRG
OW-20	Pesticides detected and Mn detected above the PRG	Miscelleanous VOCs detected; TCE and PCE above PRGs (7 and 39 ug/L, respectively); pesticides now ND; As and Mn above PRGs
OW-25	Tl and Mn detected above the PRGs	Miscelleanous VOCs detected; TCE and PCE just below PRGs (3.2 and 4.4 ug/L, respectively); Mn above PRG; Tl was ND, but the DL was elevated (5 ug/L) above the PRG of 2 ug/L
OW-26	Pesticides detected	Pesticides now ND; As above PRG
OW-35	Pesticides near the Contaminated Soils Area detected here	No organics detected; Mn at 327 ug/L – previously 306 ug/L (similar to historical)
OW-37	Mn detected above the PRG	Miscellaneous organics detected; Mn similar to historical results
OW-38	A downgradient location from the Oil/Sludge Recycling Area (which had detections of 1,1,1-TCA); Mn detected above the PRG	1,4-Dioxane was ND; VOC detections were higher than most other locations – PCE above PRG (14 ug/L), carbon tetrachloride at 37 ug/L; Mn similar to historical results
OW-49	Close to off-site; downgradient of B&M Railroad Landfill	1,2-DCA at PRG (5 ug/L; was previously above PRG); TCE still above PRG (7.8 ug/L), but a lot lower than historical values (22-25 ug/L); Mn still above PRG (516 ug/L), but now half of historical results

TABLE 4-3. NOTABLE DETECTIONS AND OBSERVATIONS OF WINTER 2005-2006 GROUNDWATER MONITORING ROUND

Well ID	Original Selection Rationale (based on historical monitoring data)	Notable Detections and Observations of Winter 2005-2006 Monitoring Round
OW-50	Close to off-site; downgradient of B&M Railroad Landfill; check for 1,4-dioxane in a downgradient location	1,4-Dioxane detected (0.59 ug/L) below state MCL; Mn still moderate (1350 ug/L)
OW-51	Close to off-site; downgradient of B&M Railroad Landfill	(no historical results) – As and Mn above PRGs
Existing Monitoring Wells – "MW" Series		
MW-202B	Check to see if contaminants migrated out of Oil/Sludge Recycling Area	No notable detections
MW-202D	Check to see if contaminants migrated out of Oil/Sludge Recycling Area	No notable detections
MW-202S	Check to see if contaminants migrated out of Oil/Sludge Recycling Area; check surficial aquifer for pesticide detections	High detection of carbon tetrachloride (120 ug/L); miscellaneous VOCs and SVOCs detected; pesticides were ND; As above PRG
MW-203B	Check to see if contaminants migrated out of Oil/Sludge Recycling Area	No notable detections
MW-203D	1,1,1-TCA detected	1,1,1-TCA still detected, but lower (0.16 ug/L); no PRG exceedances; 1,4-dioxane at 2.9 ug/L
MW-203S	1,1,1-TCA detected in MW-203D; check surficial aquifer in the area downgradient of the Oil/Sludge Recycling Area	Mn above PRG; 1,4-dioxane was ND
MW-204S	1,1,2,2-Tetrachloroethane and Mn detected above the PRGs	Acenaphthene only organic detected; Mn detected well above the PRG (22400 ug/L)
MW-205S	Check the surficial aquifer in the Locomotive Shop Disposal Areas	Acenaphthene and phenanthrene only organics detected; Mn above PRG
MW-206D	Check the deep aquifer in the Locomotive Shop Disposal Areas	1,2-Dichloropropane and MTBE only organics detected; no PRG exceedances
MW-206S	Check the surficial aquifer in the Locomotive Shop Disposal Areas	MTBE only organic detected; Mn above PRG
MW-207B	Location upgradient of Asbestos Landfill; historical detections of 1,1,1-TCA and 1,2-DCA	Miscellaneous VOCs detected, including TCE and PCE above PRGs; 1,1,1-TCA detected at 2.3 ug/L, which is just below the historical detection of 3 ug/L; 1,2-DCA detected at 2.6 ug/L which is less than half of historical results; Mn above PRG; 1,4-dioxane at 1.3 ug/L
MW-208B	BEHP detected above the PRG	BEHP now below PRG; Mn now below PRG
MW-208D	BEHP detected above the PRG	BEHP now below PRG; Mn above PRG
MW-208S	As and Mn detected above the PRGs	As and Mn detected at magnitudes similar to historical results
MW-209B	1,2-DCA and Mn detected above PRGs	Both 1,2-DCA and Mn still above PRGs, with 1,2-DCA approximately half of historical results
MW-210S	Metal concentrations higher than most other site locations	Similar to historical results; As and Mn above PRGs
MW-211D	Metal concentrations higher than most other site locations	Similar to historical results; As and Mn above PRGs
MW-211S	Pesticides, Mn, and As concentrations higher than most other site locations	No organics detected; As and Mn reduced in magnitude compared to historical results
MW-212B	Mn detected above the PRG	As and Mn above PRGs
MW-212D	1,1,2,2-Tetrachloroethane and manganese detected above the PRGs	1,1,2,2-Tetrachloroethane now ND; As and Mn above PRGs

TABLE 4-3. NOTABLE DETECTIONS AND OBSERVATIONS OF WINTER 2005-2006 GROUNDWATER MONITORING ROUND

Well ID	Original Selection Rationale (based on historical monitoring data)	Notable Detections and Observations of Winter 2005-2006 Monitoring Round
MW-213B	Multiple chlorinated VOCs detected above PRGs	1,1-DCE and 1,2-DCA now below PRGs; TCE still above PRG (16 ug/L), but trending downwards; metals below PRGs
MW-213D	Chlorinated VOCs and Mn detected above PRGs	1,1-DCE now ND; TCE now below PRG (4.8 ug/L) – down significantly; Mn now below PRG
MW-213S	PCBs and pesticides detected here	A few pesticides detected; PCBs now ND; Mn above PRG
MW-214S	The highest site PCB concentrations were detected here, along with exceedances of PRGs by pesticides, Mn, and As	Pesticides/PCBs now ND; As and Mn still above PRGs
MW-215B	BEHP detected above the PRG	BEHP now ND
Existing Barcad Well – "MW" Series		
MW-01	Check the most downgradient wells	(no historical results) – Two PAHs detected at 0.012 ug/L, no PRG exceedances
MW-01A	Check the most downgradient wells; sample one deep overburden well for 1,4-dioxane	No PRG exceedances; 1,4-dioxane was ND
MW-01B	Check the most downgradient wells	(no historical results); similar to MW-01; two PAHs detected; no PRG exceedances;
MW-01C	Check the most downgradient wells; sample the shallow overburden well for 1,4-dioxane	No organics detected (including 1,4-dioxane); no PRG exceedances
Wells Installed Winter 2005-2006		
MW-301S	Check the surficial aquifer in the Oil/Sludge Recycling Area for PCBs/pesticides; 1,1,1-TCA detected in the historical MW-201S location	MTBE detected (3.4 ug/L); As and Mn above PRGs; 1,4-dioxane was ND
MW-301D	1,1,1-TCA detected in the historical MW-201S location	MTBE detected (0.21 ug/L); toluene detected (0.13 ug/L)
MW-301B	Replace destroyed wells upgradient of the Oil/Sludge Recycling Area	Toluene detected at 0.2 ug/L
MW-302S	Check the surficial aquifer in the area downgradient of the Oil/Sludge Recycling Area; screen at the water table to look for LNAPL	No organics detected; no notable metal detections
MW-303S	LNAPL was historically found in destroyed piezometer P-12. Check the surficial aquifer in this area and screen at the water table to look for LNAPL; likely location for LNAPL sample	Carbon tetrachloride detected (0.39 ug/L); As and Mn above PRGs; LNAPL not detected
MW-304S	Fill a data gap at the Contaminated Soils Area	PCE detected (0.085 ug/L); delta-BHC detected (0.0054 ug/L)
MW-304D	Fill a data gap at the Contaminated Soils Area; sample for 1,4-dioxane in the deep overburden flow zone	Bromochloromethane, PCE, and toluene detected (0.057, 0.34, and 0.46 ug/L, respectively); 1,4-dioxane was ND
MW-304B	Fill a data gap at the Contaminated Soils Area	1,1-DCA (0.47 ug/L) and bromochloromethane (0.27 ug/L) detected; bis(2-chloroethyl)ether, butylbenzylphthalate, and naphthalene detected at less than 0.2 ug/L

TABLE 4-3. NOTABLE DETECTIONS AND OBSERVATIONS OF WINTER 2005-2006 GROUNDWATER MONITORING ROUND

Well ID	Original Selection Rationale (based on historical monitoring data)	Notable Detections and Observations of Winter 2005-2006 Monitoring Round
MW-305S	Fill a data gap upgradient of the Asbestos Landfill; 1,1,1-TCA was previously detected in MW-207B	Miscellaneous VOCs and SVOCs detected – all less than 2 ug/L; 4,4'-DDT and dieldrin detected; Mn above PRG; 1,4-dioxane was ND
MW-305D	Fill a data gap upgradient of the Asbestos Landfill; 1,1,1-TCA was previously detected in MW-207B	Miscellaneous VOCs and SVOCs detected – all less than 5 ug/L; 1,4-dioxane at 1.7 ug/L; 1,2-DCA close to PRG (4.8 ug/L)
MW-306S	Fill a data gap upgradient of the Asbestos Landfill	Miscellaneous VOCs and SVOCs detected, including phenols, phthalates, and PAHs – none above 1 ug/L
MW-307S	Fill a data gap at the Asbestos Landfill	Benzene detected above PRG (6.6 ug/L); many VOCs detected, including vinyl chloride (0.66 ug/L); miscellaneous SVOCs detected – all below 1.5 ug/L; Mn above PRG
MW-307D	Fill a data gap at the Asbestos Landfill	Many VOCs detected; 1,2-DCA above PRG (11 ug/L)
MW-307B	Fill a data gap at the Asbestos Landfill	Many VOCs detected; 1,2-DCA above PRG (23 ug/L); As above PRG
MW-308B	Check the bedrock aquifer below the Asbestos Landfill	Many VOCs detected; 1,2-DCA above PRG (8.5 ug/L); TCE well above PRG (75 ug/L); vinyl chloride detected (0.74 ug/L); 1,4-dioxane detected (2 ug/L)
Existing Piezometers – "PZ" Series		
PZ-115	Sample LNAPL	LNAPL determined to be No. 6 Fuel Oil

Notes
1,1,1-TCA – 1,1,1-Trichloroethane
1,1-DCE – 1,1-Dichloroethene
1,2-DCA – 1,2-Dichloroethane
As – Arsenic
BEHP – Bis(2-ethylhexyl)phthalate
LNAPL – Light non-aqueous phase liquid
MCL – Maximum Contaminant Limit
Mn – Manganese
ND – Non-detect
PAHs – Polynuclear Aromatic Hydrocarbons
PCBs – Polychlorinated Biphenyls
PCE – Tetrachloroethene
PRG – Preliminary Remediation Goal
TCE – Trichloroethene
Tl – Thallium
SVOCs – Semivolatile Organic Compounds
VOCs – Volatile Organic Compounds

FIGURES

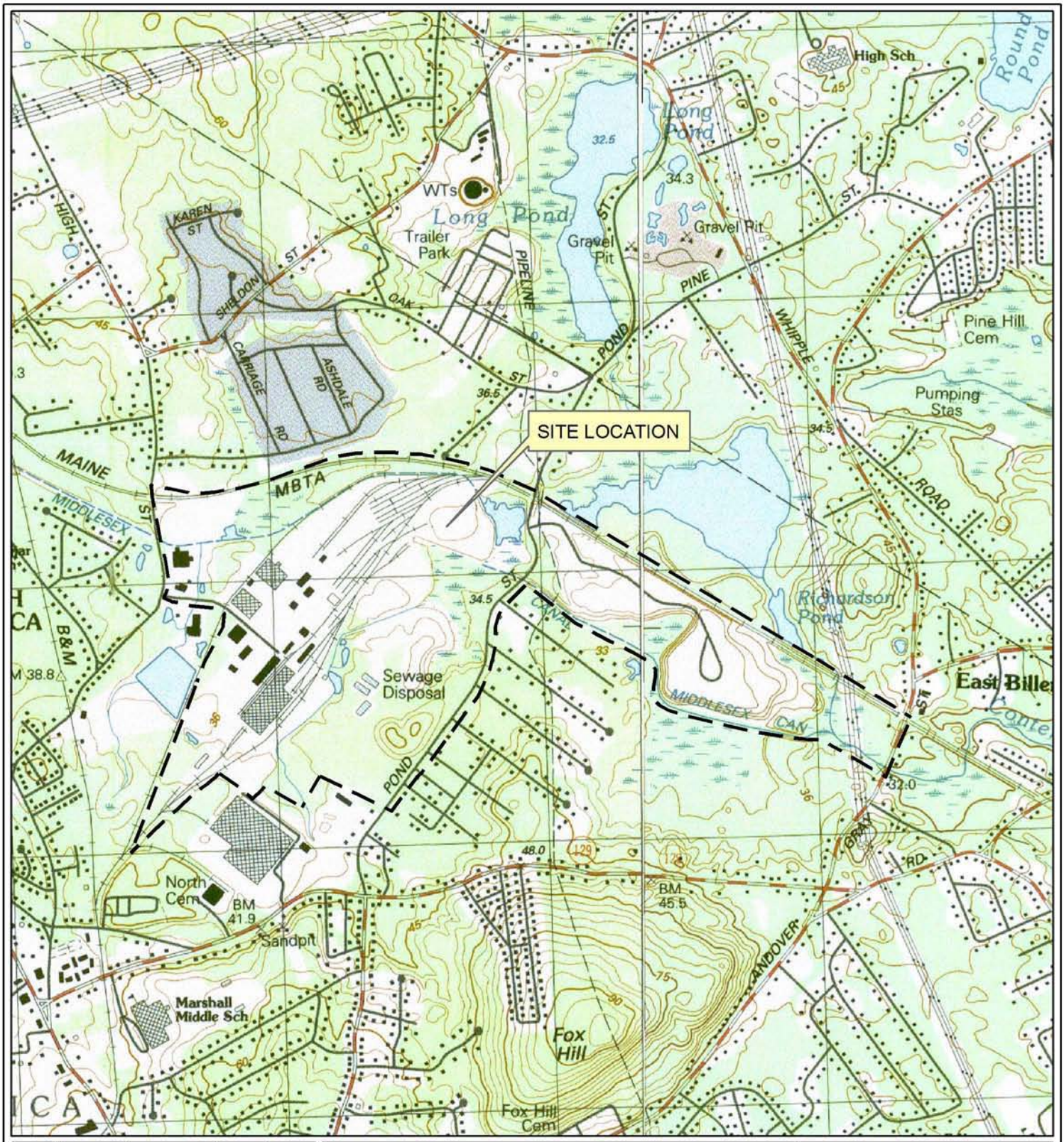


FIGURE 1-1
SITE LOCUS

GEOGRAPHICAL LOCATION
OF THE IRON HORSE PARK
SUPERFUND SITE
North Billerica, Massachusetts

Source: MassGIS

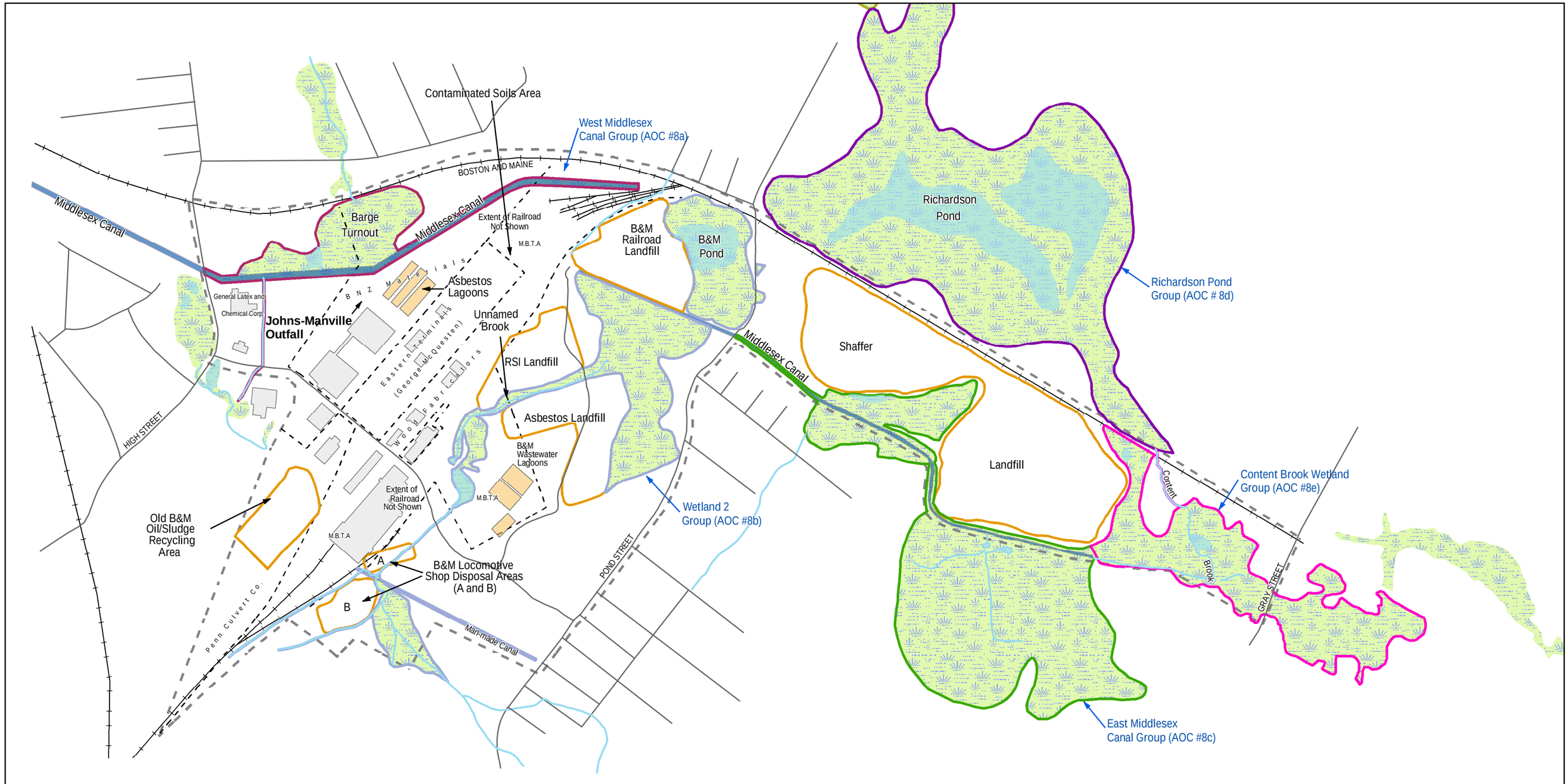
N
W E
S

1:20,000

0 500 1,000 2,000
Feet

METCALF & EDDY | AECOM

G:\Projects\HAZWASTE\36800321IHP\Maps\Fig1-1.mxd



LEGEND

- Property Boundary
- Site Boundary
- Roads
- Railroad
- Disposal Area Boundary
- Surface Water
- Wetlands
- Lagoon
- Building
- Content Brook Wetland Group
- East Middlesex Canal Group
- Richardson Pond Group
- West Middlesex Canal Group
- Wetland 2 Group

N W E S

800 400 0 800
Feet

Locations for all features area approximate.
Extent of wetland and surface waters are limited to areas confirmed during wetlands reconnaissance on July 15, 1993 and November 8, 1994

Source: MassGIS, Commonwealth of Massachusetts
Executive Office of Environmental Affairs

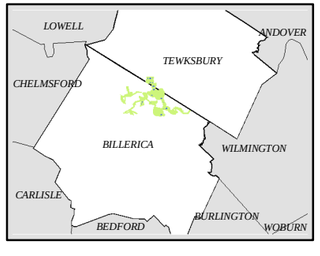


FIGURE 1-2

SITE MAP

Iron Horse Park Superfund Site
4th Operable Unit
North Billerica, MA

G:\Projects\HAZWASTE\36800321IHP\Maps\Fig1-2.mxd

BURNHAM ROAD
BOSTON AND MAINE
Middlesex Canal
Middlesex Canal
Middlesex Canal
Extent of Railroad Not Shown
Extent of Railroad Not Shown
HIGH STREET
POND STREET
ACCESS ROAD
Man-made Canal
OW 44 45 46
SG303
P-4
PZ-109
P-5
SG302
OW 09 10 11 12
MW 209B
OW 20 21
OW 15 16
OW 13 14
PZ-108
OW 34 35 36
MW 304S 304D 304B
PZ-107
P-2
P-1
MW 208S 208D 208B
P-9
PZ-110
MW 211S 211D 211B
PZ-112
OW 01 02 03
PZ-111
MW 212S 212D 212B
SG308
MW 210S 210B
OW 07 08
MW 308B
P-3
SG301
OW 32 33
P-17
OW 37 38
MW 207B
OW 25 26 27
MW 305S 305D
SG309
MW 307S 307D 307B
PZ-101
OW 17 18 19
MW 302S
MW 203S 203D 203B
OW 47 48
OW 28 29 30/31
MW 306S
P-18
P-11
PZ-103
MW 202S 202D 202B
OW 41 42 43
OW 22 23
SG310
OW-24
OW-04
P-12
MW 303S
P-10
PZ-102
MW 301S 301D 301B
MW 201S 201D 201B
PZ-106A
PZ-104A
PZ-105A
MW 206S 206D 206B
OW 39 40
PZ-105B
OW 05 06
PZ-104B
PZ-106B
MW 205S 205D 205B
MW 204S 204D 204B
MW 200S 200D 200B
OW 52 53
SG304
MW 215S 215D 215B
PZ-115
MW 214S 214D 214B
PZ-113
PZ-114
SG307
OW 49 50 51
MW 213S 213D 213B
SG306
MW 1 1A 1B 1C
SG305

G:\Projects\HAZWASTE\36800321IHP\Maps\Fig2-1WellLocations.mxd

Legend

- Road
- Railroad
- Stream
- Fence
- Disposal Area Boundary
- MW - Series Monitoring Well
- OW - Series Monitoring Well
- P - Series Piezometer
- PZ - Series Piezometer - M&E
- 2006 Staff Gauge
- 2006 Monitoring Wells
- Surface Water
- Wetland
- Lagoon
- Building
- Canal
- Destroyed Wells

Well Depths

- Shallow Overburden
- Deep Overburden
- Bedrock

Parameter Sampling

- Metals/SVOCs/VOCs
- Metals/SVOCs/VOCs/PCB/Pest
- Metals/SVOCs/VOCs/1,4-Dioxane
- Metals/SVOCs/VOCs/PCB/Pest/1,4-Dioxane

N

0 125 250 500 750 1,000

Scale in Feet

Iron Horse Park Superfund Site
3rd Operable Unit
North Billerica, MA

FIGURE 2-1.
MONITORING WELL, PIEZOMETER, AND STAFF GAUGE LOCATIONS

Locations for All Features Shown are Approximate.
Extent of Wetland and Surface Waters are limited to Areas Confirmed During Wetlands Reconnaissance on July 15, 1993 and November 8, 1994.

METCALF & EDDY | AECOM

BURNHAM ROAD
BOSTON AND MAINE
Middlesex Canal
Middlesex Canal
Extent of Railroad Not Show
Extent of Railroad Not Shown
HIGH STREET
POND STREET
ACCESS ROAD
Man-made Canal
Canal

111.49 OW-46
111.32 SG302
110.74 SG303
110.73 PZ-109
OW-12 111.42
110.75 OW-21
111.31 OW-16
112.15 OW-14
111.89 PZ-108
111.84 PZ-107
111 MW-304S
111.44 P-2
111.93 P-1
111.6 MW-208S
111.8 P-9
112.69 SG301
112.58 OW-33
112.44 P-17
MW-305S 112.17
112.54 OW-27
112.8 MW-203S
112.55 MW-302S
112.74 MW-202S
112.84 OW-48
112.75 OW-31
111.72 MW-306S
112.56 SG310
113.25 MW-303S
113.61 MW-301S
113.93 P-10
112.95 PZ-106A
MW-206S 113.1
113.62 OW-40
PZ-104A 113.36
112.58 PZ-105B
114.19 MW-205S
114.55 PZ-104B
PZ-106B 114.56
118.71 MW-204S

109.51 SG304
109.23 MW-215S
107.24 MW-01C
106.02 SG305
PZ-115 108.99
108.96 MW-214S
109.23 PZ-113
108.95 PZ-114
SG307 108.81
OW-51 108.14
109.75 OW-36
108.91 MW-213S
SG306 108.58
109.96 PZ-112
109.35 PZ-110
109.33 MW-211S
109.06 OW-03
109.42 PZ-111
109.38 MW-212S
SG308 109.32
109.88 MW-210S
OW-08 109.31
109.5 MW-307S
109.12 SG309

107
108
109
110
111
112
113
114
115
116
117
118
119
120

Legend

- Road
- Railroad
- Stream
- Fence
- Disposal Area Boundary
- Surface Water
- Wetland
- Lagoon
- Building
- Canal

GPS March 31, 2006

Category

- Wells
- Piezometer
- Staff Gauge

Groundwater Contours

- Elevation
- Inferred Elevation

NOTES:

Measuring point P-17 elevation corrected based on adjacent wells OW-37 and OW-38.

MW-204S elevation suspect, possibly high.

N

0 125 250 500 750 1,000
Scale in Feet

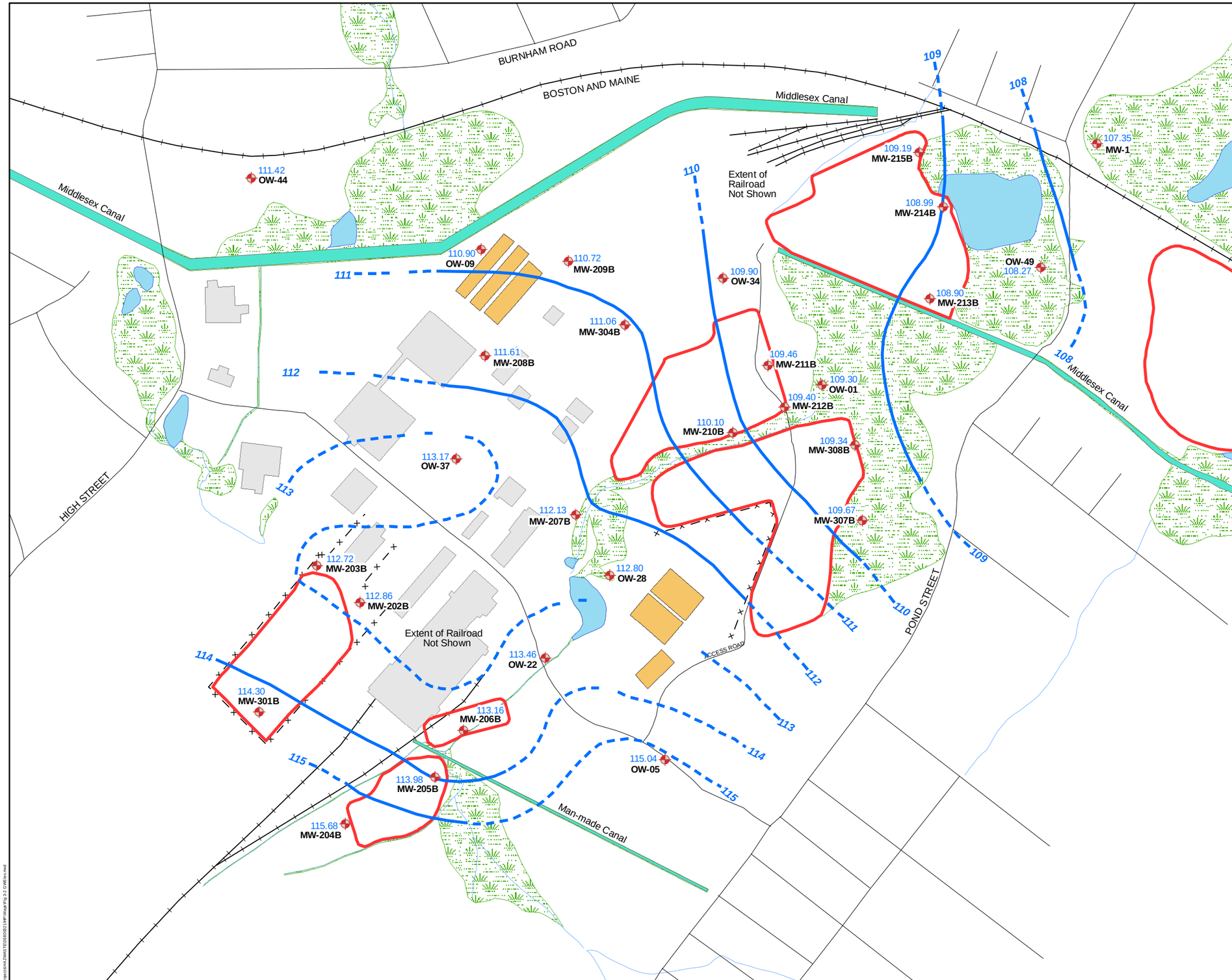
Iron Horse Park Superfund Site
3rd Operable Unit
North Billerica, MA

FIGURE 3-1
GROUNDWATER ELEVATION CONTOURS, SHALLOW OVERBURDEN, MARCH 31, 2006

Locations for All Features Shown are Approximate.
Extent of Wetland and Surface Waters are limited to Areas Confirmed During Wetlands Reconnaissance on July 15, 1993 and November 8, 1994.

METCALF & EDDY | AECOM

G:\Projects\AZ0651\TS\050921\MP\Map\Fig 3-1 GWE.fv.mxd



Legend

- Road
- Railroad
- Stream
- Fence
- Disposal Area Boundary
- Surface Water
- Wetland
- Lagoon
- Building
- Canal
- Well - Bedrock

Groundwater Contours

- Elevation
- Inferred Elevation

0 125 250 500 750 1,000

Scale in Feet

Iron Horse Park Superfund Site
3rd Operable Unit
North Billerica, MA

FIGURE 3-2
GROUNDWATER ELEVATION CONTOURS, BEDROCK, MARCH 31, 2006

Locations for All Features Shown are Approximate.
Extent of Wetland and Surface Waters are limited to Areas Confirmed During Wetlands Reconnaissance on July 15, 1993 and November 8, 1994.

METCALF & EDDY | AECOM

APPENDIX A

Field Sampling Documentation

APPENDIX A.1

Tables

TABLE A-1. MONITORING WELL AND PIEZOMETER INVENTORY - MARCH 31, 2006 [1]

ID Number Well (2)	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Ground Surface Elevation (ft)	Top of PVC Elevation (9) (ft)	Formation Screened	Well ID Mark Present	Well Secured On Arrival	Well Plumb Level	Cap Present PVC/J-plug	Condition of			Survey Mark Present (3)	Depth Well		Depth to Water (ft TOPVC)	PVC Diam. (in)	Diff. TOC/PVC (ft)	Height TOC (ft ags)	PID TVOC (ppm)	Additional Comments
										PVC	Outer Casing	Concrete Pad		*Instal. (4) (ft bgs)*	Meas. (5) (ft bgs)						
Monitoring Wells - "OW" Series - Installed by CDM 1987																					
OW-01	577523.37	664790.39	111.26	113.52	BR	yes	yes	yes	no	accep	accep	accep	Yes-p/c	*55.5*	54.78	4.22	1.5	0.19	2.22	0.1	
OW-02	577528.09	664801.57	111.14	112.42	DOB	yes	yes	yes	no	accep	accep	pfh	Yes-p/c	*25.58*	25.50	3.32	2	0.43	1.67	0	Concrete pad broken, raised ~0.2 ft. PVC well pipe looks broken, but appears to have a survey notch present.
OW-03	577525.08	664795.65	111.26	113.19	SOB	yes	yes	yes	no	accep	accep	pfh	yes-p/c	*13*	12.98	4.13	2	0.11	2.21	0	Concrete raised ~0.1 ft
OW-04	576169.68	664348.16	126.03	128.09	DOB	illeg	yes	yes	no	accep	accep	pfh	yes-p	*25.25*	24.01	17.20	2	0.39	3.27	0	Concrete raised ~0.3 ft
OW-05	575623.51	663991.96	124.16	126.06	BR	no	yes	yes	no	accep	accep	broken	Yes-p/c	*33*	30.79	11.02	1.5	0.19	2.22	0	
OW-06	575626.07	663985.39	124.17	126.54	DOB	yes	yes	yes	no	frosted	accep	nv	Yes-p/c	*9.5*	10.13	10.81	< 2 frost	0.18	2.40	0	PVC frost heaved, no large bladder pump.
OW-07	577226.34	664957.61	114.07	115.71	DOB	yes	yes	yes	j-plug	accep	accep	accep	Yes-p/c	*40.25*	40.27	6.41	2	0.13	1.77	0	Repaired December 2005
OW-08	577231.48	664958.06	113.04	115.76	SOB	yes	yes	yes	j-plug	accep	accep	accep	Yes-p/c	*20.4*	19.26	6.45	2	0.235	2.96	0	Repaired December 2005
OW-09	578209.81	663059.75	114.39	116.33	BR	yes	yes	yes	no	accep	accep	nv	yes-p	*84.5*	84.23	5.43	1.5	0.24	2.23	364	
OW-10	578205	663055.08	114.29	116.06	DOB	yes	yes	yes	no	accep	accep	nv	yes-p	*65*	60.38	5.09	2	0.12	1.78	0	Water in protective pipe.
OW-11	578214.82	663063.56	114.43	116.2	SOB	yes	yes	yes	no	accep	accep	nv	yes-p	*40*	40.33	5.25	2	0.35	2.04	0	iron floc
OW-12	578218.09	663066.08	114.61	116.01	SOB	yes	yes	yes	no	accep	accep	accep	yes-p	*20*	19.98	4.59	2	0.43	1.84	0	
OW-13	578075.91	662612.05	118.17	119.88	DOB	yes	yes	yes	no	accep	accep	nv	Yes-p/c	*48*	48.58	8.74	2	0.49	2.30	0	
OW-14	578081.41	662608.62	118.49	120.44	SOB	yes	yes	yes	no	accep	accep	nv	Yes-p/c	*22.8*	22.93	8.29	2	0.21	2.20	0	
OW-15	578046.93	661911.28	116.44	117.06	DOB	yes	yes	no	no	broken	accep	nv	Yes-c	*39.33*	39.66	5.81	2	0.94	1.47	0	well slightly off plumb
OW-16	578048.6	661915.07	116.28	118.35	SOB	yes	no	yes	no	accep	accep	nv	Yes-p/c	*18.5*	18.58	7.04	2	0.32	2.02	0	Lock unhitched
OW-17	576684.93	662032.44	117.57	117.57	BR	-	-	-	-	-	-	-	-	*70*	-		-	-	-	-	Could not locate, possible in beaver swamp
OW-18	576690.49	662036.98	115.25	116.15	DOB	-	-	-	-	-	-	-	-	*39.33*	-		-	-	-	-	Could not locate, possible in beaver swamp
OW-19	576689.45	662032.65	115.09	116.61	SOB	-	-	-	-	-	-	-	-	*21.33*	-		-	-	-	-	Could not locate, possible in beaver swamp
OW-20	578131.63	663494.31	114.37	116.87	DOB	yes	yes	yes	no	accep	accep	nv	yes-p	*43.5*	37.98	5.94	2	0.07	2.36	0	topvc cracked
OW-21	578135.25	663499.71	114.13	116.31	SOB	yes	yes	yes	no	accep	accep	nv	yes-p	*18*	17.93	5.56	2	0.125	2.18	0	
OW-22	576136.05	663385.62	116.01	119.01	BR	yes	yes	yes	no	accep	accep	broken	yes-p	*41.9*	40.10	5.55	1.5	0.34	2.78	0	
OW-23	576144.9	663399.67	116.53	118.72	DOB	yes	yes	yes	no	accep	accep	broken	yes-p	*16*	14.73	5.19	2	0.38	2.32	0	
OW-24	576143.6	663772.26	121.68	122.53	DOB	yes	yes	yes	no	accep	accep	nv	yes-p	*24.5*	24.63	9.10	2	1.35	2.1	0	
OW-25	576854.6	663529.06	115.47	117.24	DOB	no	yes	yes	no	accep	accep	accep	yes-p	*60*	57.57	4.71	2	0.46	2.18	0	
OW-26	576850.17	663532.26	115.85	117.46	SOB	no	yes	yes	no	accep	accep	pfh	yes-p	*40*	37.99	4.91	2	0.06	1.73	0	Concrete appears to have heaved ~0.1'
OW-27	576854.78	663535.14	115.2	117.09	SOB	no	yes	yes	no	accep	accep	accep	yes-p	*20*	19.53	4.55	2	0.17	1.68	0	
OW-28	576558.53	663711.33	115.96	117.76	BR	yes	yes	yes	no	accep	accep	nv	yes-c	*93.25*	91.88	4.96	1.5	0.91	2.80	0	Depth to water is from casing survey point
OW-29	576548.76	663709.19	115.84	117.92	DOB	yes	yes	yes	no	accep	accep	nv	yes-p/c	*56.25*	55.23	5.17	2	0.14	2.00	0	
OW-30	576555.12	663710.77	116.74	116.74	SOB	yes	yes	yes	no	accep	sl. off plumb	nv	yes-c	*29.5*	29.63	4.02	< 2 frost	1.18	1.90	0	Upper well riser indented due to water freezing in casing, ID < 2", DTW from Casing
OW-31	576552.48	663710.11	116.02	117.84	SOB	yes	yes	yes	no	accep	accep	pfh	yes-p/c	*15.33*	15.33	5.09	< 2 frost	0.08	1.78	0	well riser frost heaved-ID < 2", Concrete appears to have heaved ~0.2'
OW-32	577248.26	661823.61	115.36	115.00	DOB	no	yes	yes	j-plug	accep	accep	in road	no	*40*	34.63	2.43	2	0.36	0	0	
OW-33	577251.26	661825.82	115.35	114.88	SOB	no	yes	yes	j-plug	accep	accep	in road	no	*20*	16.23	2.30	2	0.47	0	0	Iron floc.

ID Number Well (2)	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Ground Surface Elevation (ft)	Top of PVC Elevation (9) (ft)	Formation Screened	Well ID Mark Present	Well Secured On Arrival	Well Plumb Level	Cap Present PVC/J-plug	Condition of			Survey Mark Present (3)	Depth Well		Depth to Water (ft TOPVC)	PVC Diam. (in)	Diff. TOC/PVC (ft)	Height TOC (ft ags)	PID TVOC (ppm)	Additional Comments
										PVC	Outer Casing	Concrete Pad		*Instal. (4) (ft bgs)*	Meas. (5) (ft bgs)						
OW-34	578063.96	664287.89	112.37	114.08	BR	no	yes	sl askew	j-plug	accep	accep	nv	yes-p/c	*67*	66.85	4.18	1.5	0.62	2.14	0	
OW-35	578068.16	664290.77	112.53	114.19	DOB	no	yes	yes	j-plug	accep	accep	accep	yes-p	*37.25*	37.15	4.34	2	0.1	1.64	0	
OW-36	578072.53	664294.2	112.78	113.85	SOB	no	yes	yes	j-plug	accep	dmgd	accep	yes-p	*15*	14.78	4.10	2	0.18	1.28	0	Casing damaged, large v-shape notch in TOC
OW-37	577148.44	662932.5	115.26	117.32	BR	yes	yes	yes	no	accep	accep	nv	yes-p	*59.33*	59.33	4.15	1.5	0.37	2.09	0	Iron floc.
OW-38	577146.52	662935.13	115.8	117.12	DOB	yes	yes	yes	no	accep	accep	nv	yes-p	*29.7*	29.76	3.96	2	0.25	1.59	0	Casing slightly bent off plumb.
OW-39	575739.83	662720.6	116.18	118	DOB	yes	yes	yes	no	accep	accep	busted	yes-p	*24*	24.33	4.25	2	0.01	1.80	0	PVC same elevation as protective pipe.
OW-40	575739	662719.35	116.24	117.44	SOB	yes	yes	no	no	curved	off plumb	busted	yes-p	*8.9*	8.60	3.82	< 2 bent	0.41	1.74	0	Well 20-30 degrees off plumb, survey coupling
OW-41	576309.06	662008.83	116.76	118.12	DOB	-	-	-	-	-	-	-	-	*53*	-	-	-	-	-	-	Found destroyed, casing pipe dozed over.
OW-42	576311.89	662000.47	116.52	117.59	SOB	-	-	-	-	-	-	-	-	*31*	-	-	-	-	-	-	No remains found, presumed same as OW-41
OW-43	576304.33	661997.59	116.5	118.45	SOB	-	-	-	-	-	-	-	-	*15*	-	-	-	-	-	-	No remains found, presumed same as OW-41
OW-44	578572.5	661892.8	113.77	115.01	BR	yes	yes	yes	no	accep	accep	nv	yes-p/c	*66.5*	55.20	3.59	1.5	0.82	1.88	0	Water in prot. pipe. PVC much lower casing.
OW-45	578577.11	661892.96	113.91	114.95	DOB	yes	yes	yes	no	accep	accep	nv	yes-p/c	*38*	27.58	3.52	2	0.56	1.51	0	Water in prot. pipe. PVC much lower casing.
OW-46	578581.11	661892.36	113.9	114.56	SOB	yes	yes	yes	no	accep	accep	nv	yes-p/c	*14.5*	14.33	3.07	2	0.77	1.23	0	Water in prot. pipe. PVC much lower casing.
OW-47	576572.74	663186.32	115.78	117.69	DOB	yes	yes	yes	no	accep	accep	nv	yes-p/c	*28*	25.88	4.99	2	0.04	1.15	0	
OW-48	576571.77	663185.07	115.79	117.58	SOB	yes	yes	yes	no	accep	accep	nv	yes-p/c	*10*	11.04	4.74	2	0.24	1	0	
OW-49	578119.76	665898.92	111.28	112.48	BR	yes	yes	yes	no	accep	accep	nv	yes-p/c	*70*	69.48	4.21	1.5	0.21	1.93	0	Iron floc.
OW-50	578122.38	665903.06	111.08	112.3	DOB	yes	yes	yes	no	accep	accep	nv	yes-p	*43*	42.48	4.03	2	0.18	1.46	0	
OW-51	578126.32	665908.75	111.19	112.02	SOB	yes	yes	yes	no	sl askew	sl askew	nv	yes-p	*19*	19.20	3.88	2	0.18	1.08	0	
OW-52	574712.95	661133.9	145.38	149.92	BR	-	-	-	-	-	-	-	-	*52*	-	-	-	-	-	-	Located on COPART Auto Auction property
OW-53	574717.29	661129.15	145.44	150.03	DOB	-	-	-	-	-	-	-	-	*21*	-	-	-	-	-	-	Access denied.
Monitoring Wells - "MW" Series - Installed by M&E - 200-series 1995 / 300-series 2006																					
MW-200B	574817.578	661295.59	-	133.95	BR	-	-	-	-	-	-	-	-	*60.9*	-	-	-	0.22	-	-	Located on COPART Auto Auction property
MW-200D	574817.089	661290.089	-	133.88	DOB	-	-	-	-	-	-	-	-	*27.1*	-	-	-	0.39	-	-	Access denied. Location along tracks out-
MW-200S	574822.21	661292.7	-	134.07	SOB	-	-	-	-	-	-	-	-	*16.1*	-	-	-	0.33	-	-	side fence checked, wells located within fence
MW-201B	575790.953	661959.161	-	123.24	BR	-	-	-	-	-	-	-	-	*77.1*	-	-	-	0.09	-	-	Not found, wells most likely destroyed.
MW-201D	575781.662	661957.416	-	123.41	DOB	-	-	-	-	-	-	-	-	*43.4*	-	-	-	0.08	-	-	Location graded and rebuilt for construction
MW-201S	575784.62	661965.424	-	122.64	SOB	-	-	-	-	-	-	-	-	*16.9*	-	-	-	0.06	-	-	of a wharehouse facility.
MW-202B	576420.926	662444.8	115.66	115.23	BR	yes	y-no lock	yes	j-plug	accep	accep	nv	no	*100*	>101.4	2.37	2	0.43	0	0	Repaired December 2005
MW-202D	576413.399	662441.035	115.49	115.12	DOB	yes	y-locked	yes	j-plug	accep	accep	nv	no	*41.5*	38.47	2.41	2	0.37	0	0	Repaired December 2005
MW-202S	576406.568	662438.336	115.68	115.35	SOB	yes	y-no lock	yes	j-plug	accep	accep	nv	no	*16*	16.80	2.61	2	0.33	0	0	Repaired December 2005
MW-203B	576606.281	662224.809	115.48	116.79	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*78.8*	78.75	4.07	2	0.15	1.46	49.1	
MW-203D	576598.952	662217.873	115.45	116.73	DOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*42.5*	40.35	4.00	2	0.16	1.44	136	
MW-203S	576592.736	662213.052	115.37	116.63	SOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*16*	16.15	3.83	2	0.22	1.48	205	Iron floc.
MW-204B	575297.691	662371.002	129.79	132.2	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*75.4*	75.59	16.52	2	0.25	2.66	0	
MW-204D	575294.644	662366.344	129.84	132.48	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*45.5*	41.96	14.08	2	0.20	2.84	0	
MW-204S	575291.28	662361.305	130.03	132.39	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*24*	24.36	13.68	2	0.22	2.58	0	

ID Number Well (2)	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Ground Surface Elevation (ft)	Top of PVC Elevation (9) (ft)	Formation Screened	Well ID Mark Present	Well Secured On Arrival	Well Plumb Level	Cap Present PVC/J-plug	Condition of			Survey Mark Present (3)	Depth Well		Depth to Water (ft TOPVC)	PVC Diam. (in)	Diff. TOC/PVC (ft)	Height TOC (ft ags)	PID TVOC (ppm)	Additional Comments
										PVC	Outer Casing	Concrete Pad		*Instal. (4) (ft bgs)*	Meas. (5) (ft bgs)						
MW-205B	575535.768	662825.087	120.46	122.3	BR	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*54.7*	54.77	8.32	2	0.06	1.90	0	
MW-205D	575536.39	662831.117	120.14	122.16	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*31*	30.85	8.27	2	0.09	2.11	0	
MW-205S	575529.685	662827.382	120.5	122.54	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*20.4*	20	8.35	2	0.08	2.12	0	
MW-206B	575770.194	662970.113	118.66	120.76	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*55*	54.93	7.6	2	0.22	2.32	0	
MW-206D	575774.068	662973.001	118.5	121.1	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*23.2*	22.47	8.02	2	0.16	2.76	0	Well label reads MW-206CD
MW-206S	575766.676	662966.008	118.48	120.85	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*17.2*	16.6	7.75	2	0.21	2.58	0	
MW-207	576865.131	663540.868	115.03	116.63	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*124.7*	124.4	4.50	2	0.36	1.96	0	Well label reads MW-207B
MW-208B	577672.26	663080.832	115.145	117.31	BR	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*84*	83.45	5.70	2	0.205	2.37	0	
MW-208D	577635.887	663068.378	115.15	117.02	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*44*	40.9	5.43	2	0.2	2.07	56.6	
MW-208S	577630.668	663064.036	114.98	117.29	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*20*	18.9	5.69	2	0.2	2.51	134	Iron Floc.
MW-209	578150.234	663501.43	114.49	116.8	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*65*	64.83	6.08	2	0.28	2.59	6.4	Well labeled as MW-209B, PVC askew
MW-210B	577283.211	664338.595	113.81	116.24	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*44*	42.93	6.14	2	0.19	2.62	0	
MW-210S	577281.812	664333.258	113.7	115.89	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*10*	9.93	6.01	2	0.35	2.54	0	Iron floc
MW-211B	577621.075	664514.851	112.55	114.59	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*47.8*	47.63	5.13	2	0.15	2.19	0	
MW-211D	577630.212	664517.214	112.31	114.45	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*26*	25.85	5.11	2	0.06	2.2	0	
MW-211S	577625.794	664511.745	112.59	114.61	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*15.4*	15.15	5.28	2	0.1	2.12	0	
MW-212B	577412.625	664601.133	112.34	114.61	BR	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*52.1*	51.03	5.21	2	0.09	2.36	0	
MW-212D	577409.582	664596.982	112.37	114.18	DOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*25*	24.98	4.77	2	0.24	2.05	0	
MW-212S	577414.263	664595.093	112.22	114.28	SOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*15.5*	15.18	4.90	2	0.17	2.23	0	
MW-213B	577959.95	665338.588	113.2	114.97	BR	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*91*	84.53	6.07	2	0.25	2.02	0	
MW-213D	577956.259	665344.15	113.56	115.84	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*51.8*	51.77	6.96	2	0.19	2.47	0	
MW-213S	577953.263	665338.627	113.18	115.63	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*17.7*	17.95	6.72	2	0.17	2.62	0	Iron floc
MW-214B	578427.657	665404.943	111.11	113.44	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*89*	88.90	4.45	2	0.16	2.49	0	
MW-214D	578438.519	665405.057	110.86	113.23	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*53*	52.97	4.29	2	0.19	2.56	0	
MW-214S	578432.986	665405.304	111	113.33	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*25.5*	24.85	4.37	2	0.23	2.56	0	Iron floc
MW-215B	578701.267	665281.392	112.25	114.16	BR	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*86.7*	86.54	4.97	2	0.2	2.11	0	
MW-215D	578712.769	665283.061	111.95	113.86	DOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*50*	49.59	4.63	2	0.15	2.06	0	
MW-215S	578707.611	665281.358	112.11	114.28	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*20.5*	19.47	5.05	2	0.15	2.32	0	
MW-301B	575869.261	661924.842	121	123.75	BR	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*77*	78.41	9.45	2	0.14	2.89	18.5	Started at 11.49 TOPVC 2.5 hrs earlier. Well under pressure when opened.
MW-301D	575864.751	661932.272	121.18	123.64	DOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*43*	43.71	10.04	2	0.23	2.69	17.3	
MW-301S	575873.451	661918.122	121.02	123.53	SOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*14.1*	13.97	9.92	2	0.21	2.72	31	
MW-302S	576660.337	662516.976	115.7	117.72	SOB	yes	yes	yes	j-plug	accep	accep	accep	no	*11.2*	11.19	5.17	2	0.08	2.10	6.6	
MW-303S	576043.517	662283.425	116.58	116.34	SOB	yes	yes	yes	j-plug	accep	accep	accep	no	*11.3*	11.31	3.09	2	0.24	Rim Flu	0	

ID Number Well (2)	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Ground Surface Elevation (ft)	Top of PVC Elevation (9) (ft)	Formation Screened	Well ID Mark Present	Well Secured On Arrival	Well Plumb Level	Cap Present PVC/J-plug	Condition of			Survey Mark Present (3)	Depth Well		Depth to Water (ft TOPVC)	PVC Diam. (in)	Diff. TOC/PVC (ft)	Height TOC (ft ags)	PID TVOC (ppm)	Additional Comments
										PVC	Outer Casing	Concrete Pad		*Instal. (4)* *(ft bgs)*	Meas. (5) (ft bgs)						
MW-304B	577820.264	663783.917	114.85	117.43	BR	yes	yes	yes	j-plug	accep	sl askew	accep	yes-p/c	*49.4*	49.42	6.37	2	0.1	2.68	1	
MW-304D	577828.074	663790.777	114.89	117.58	DOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*25*	25.1	6.62	2	0.07	2.76	0.3	
MW-304S	577811.835	663775.967	114.97	117.37	SOB	yes	yes	yes	j-plug	accep	sl askew	accep	yes-p/c	*12.2*	12.7	6.37	2	0.27	2.67	0.2	
MW-305D	576931.768	663873.251	117.92	120.39	DOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*25*	25.3	8.22	2	0.44	2.91	0	
MW-305S	576941.378	663872.132	118.08	120.79	SOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*13*	12.98	8.62	2	0.21	2.92	0	
MW-306S	576509.602	664118.00	117.15	119.48	SOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*11.85*	11.67	7.76	2	0.59	2.92	0	
MW-307B	576834.191	664995.421	115.12	118.06	BR	yes	yes	sl. askew	j-plug	accep	accep	accep	yes-p/c	*83.5*	83.34	8.39	2	0.19	3.13	2.1	
MW-307D	576842.351	664995.981	115.52	117.94	DOB	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*47.5*	47.49	8.47	2	0.12	2.54	28.3	
MW-307S	576849.581	664996.151	115.58	118.56	SOB	yes	yes	sl. askew	j-plug	accep	accep	accep	yes-p/c	*12.85*	12.95	9.06	2	0.1	3.08	3.7	
MW-308B	577219.273	664958.277	113.99	116.08	BR	yes	yes	yes	j-plug	accep	accep	accep	yes-p/c	*72*	72.26	6.74	2	0.2	2.29	0	
Barcad Well - "MW" Series - Installed by M&E 1995																					
MW-01	578746.49	666184.22	108.07	111.15	BR	faint	yes	-	no	accep	-	-	yes-c	ukn	-	3.80	0.25	-0.38	2.7	0	Added to RI program September 1994
MW-01A	578746.49	666184.22	108.07	110.90	DOB	faint	yes	-	no	accep	-	-	yes-c	ukn	-	3.67	0.25	-0.13	2.7	0	No information available b/c wells were not
MW-01B	578746.49	666184.22	108.07	110.90	DOB	faint	yes	-	no	accep	-	-	yes-c	ukn	-	3.66	0.25	-0.13	2.7	0	inventoried with the OW and P series wells.
MW-01C	578746.49	666184.22	108.07	109.89	SOB	yes	yes	yes	no	accep	accep	nv	yes-c	ukn	12.22	2.65	1.5	0.88	2.7	0	TOC Elev. = 110.77' (least likely to change)
Piezometers - "P" Series - Installed by CDM 1987																					
P-1	577670.08	661619.93	117.15	118.48	SOB	no	not lockable	yes	yes	accep	-	-	yes	*9.75*	9.10	-	2	n/a	-	-	Missing, presumed destroyed.
P-2	577760.99	662395.75	114.14	114.81	SOB	yes	not lockable	yes	yes	accep	-	-	yes	*7*	8.18	3.37	2	n/a	0.67	5	PVC rotates, check alignment before measure
P-3	577418.59	662238.38	115.26	117.73	SOB	no	not lockable	yes	yes	accep	-	-	yes	*9.6*	7.00	-	2	n/a	-	-	Destroyed January 2006
P-4	578501.99	663473.8	114.19	115.56	SOB	-	-	-	-	-	-	-	-	*7.2*	-	-	-	-	-	-	Could not locate except for PVC fragments and shotgun shells. Likely destroyed.
P-5	578255.11	663551.87	113.33	114.87	SOB	no	not lockable	yes	yes	accep	-	-	no	*8.8*	1.45	dry	2	n/a	2.12	22.9	Bottom 3.54 ft. from ???? Iron/silt in bottom.
P-9	577501.41	663744.32	116.15	118.26	SOB	no	not lockable	yes	yes	accep	-	-	yes	*8.50*	8.00	6.46	2	n/a	2.16	0	
P-10	575922.31	663657.2	122.37	124.85	SOB	no	no (no cap)	yes	no	accep	-	-	yes	*12.75*	12.15	10.92	2	n/a	2.35	0	
P-11	576422.39	662152.27	116.81	119.82	SOB	-	-	-	-	-	-	-	-	*10.00*	-	-	2	n/a	-	-	Paved Over
P-12	576000.11	662229.9	117.56	118.85	SOB	-	-	-	-	-	-	-	-	*8.66*	-	-	2	n/a	-	-	Destroyed, paved over.
P-17	577156.74	662919.63	115.53	117.13	SOB	no	not lockable	yes	yes	accep	-	-	yes	*8.50*	8.57	4.69	2	n/a	1.97	0	Iron floc.
P-18	576478.16	664238.824	124.37	125.57	SOB	yes	not lockable	yes	yes	accep	-	-	yes	-	14.20	dry	2	n/a	1.2	0	Newly Located
Piezometers - "PZ" Series - Installed by M&E 1994																					
PZ-101	576673.59	662273.1	114.54	116.58	SOB	-	-	-	-	-	-	-	-	*9.5*	-	-	2	-	-	-	Destroyed, location found no well.
PZ-102	575881.45	661896.81	121.21	123.56	SOB	no	yes	yes	pvc	accep	accep	nv	yes-c	*14*	14.60	9.83	2	0.15	2.01	27.3	Locking pin broke off, not lockable.
PZ-103	576407.86	662427.04	115.51	115.19	SOB	yes	yes	yes	j-plug	cut off	cut off	nv	y	*10.3*	10.16	2.43	2	0.32	0	0	Well rehabilitated December 2005
PZ-104A	575709.31	662809.24	118.49	121.02	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*14.7*	14.76	7.66	2	0.16	2.54	0	
PZ-105A	575723.84	662915.19	117.39	119.76	SOB	-	-	-	-	-	-	-	-	*14.6*	-	-	2	-	-	-	Destroyed.
PZ-106A	575834.67	662948.68	115.25	117.59	SOB	yes	yes	yes	pvc	accep	accep	busted	yes-c	*10.1*	10.20	4.64	2	0.27	2.44	0	
PZ-104B	575459.85	662502.84	123.92	126.78	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*15*	15.01	12.23	2	0.12	3.04	0	Faint well marking
PZ-105B	575618.99	662772.47	119.51	122.26	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*14.2*	14.28	8.68	2	0.19	2.91	0	Faint well marking
PZ-106B	575451	662803.44	121.45	124.6	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*15*	15.06	10.04	2	0.18	3.13	0	Faint well marking
PZ-107	577822.31	663226.41	114.94	116.42	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*9*	8.33	4.58	2	0.11	1.59	4.7	
PZ-108	578015.28	662930.47	114.86	116.75	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-p/c	*9.5*	9.53	4.86	2	0.28	2.45	45.5	Pad raised on south side
PZ-109	578272.65	663348.88	116.7	118.18	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*14*	13.88	7.45	2	0.18	1.58	451	Iron floc.
PZ-110	577585.73	664465.43	112.33	114.91	SOB	no	yes	yes	pvc	accep	accep	accep	yes-c	*10.3*	9.23	5.56	2	0.17	2.66	0	Iron floc.
PZ-111	577389.86	664487.07	119.43	121.65	SOB	no	yes	yes	pvc	accep	accep	accep	yes-c	*18.60*	18.80	12.23	2	0.05	2.28	0	
PZ-112	577610.01	664217.79	124.27	127.19	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*20.00*	19.08	17.23	2	0.02	2.91	0	
PZ-113	578205.67	664914.23	118.69	121.47	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*25.00*	22.41	12.24	2	0.1	2.93	0	Well also marked PZ103D
PZ-114	578205.14	665385.74	114.2	115.57	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*19.00*	19.23	6.62	2	0.1	1.52	0	Faint well marking
PZ-115	578392.52	665212.94	120.7	122.81	SOB	yes	yes	yes	pvc	accep	accep	accep	yes-c	*18.00*	18.40	13.82	2	0	2.52	5.5	skim coat NAPL

STAFF GAUGES - INSTALLED BY M&E - MARCH 2006 - SURVEYED APRIL/MAY 2006 [6]

ID Number Staff Gauge	Northing MA State Plane NAD27	Easting MA State Plane NAD27	Canal Bed Elevation (ft)	Top of Staff Elevation (7) (ft)	Formation Screened	Well ID Mark Present	Well Secured On Arrival	Well Plumb Level	Cap Present PVC/J-plug	Condition of PVC	Outer Casing	Concrete Pad	Survey Survey Mark Present (3)	Depth Well *Instal. (4)* *(ft bgs)*	Meas.(5) (ft bgs)	Depth to Water (ft TOStaff)	PVC Diam. (in)	Diff. TO Staff - TO Gauge (ft) (8)	Height TOC (ft ags)	PID TVOC (ppm)	Additional Comments
SG301	577225.633	661614.935	111.29	115.64	SW	yes	-	yes	-	-	-	-	no	-	-	2.95	-	1.32	-	-	
SG302	578178.201	661468.181	108.25	114.92	SW	yes	-	yes	-	-	-	-	no	-	-	3.60	-	2.53	-	-	
SG303	578391.947	663134.786	109.31	113.4	SW	yes	-	yes	-	-	-	-	no	-	-	2.66	-	0.31	-	-	
SG304	578779.407	665308.825	108.71	112.76	SW	yes	-	yes	-	-	-	-	no	-	-	3.25	-	1.32	-	-	
SG305	578652.15	666399.583	105.23	108.6	SW	yes	-	yes	-	-	-	-	no	-	-	2.58	-	0.32	-	-	
SG306	577696.024	665778.776	106.59	110.19	SW	yes	-	yes	-	-	-	-	no	-	-	1.61	-	0.31	-	-	
SG307	578187.245	664579.554	108.12	110.04	SW	yes	-	yes	-	-	-	-	no	-	-	1.23	-	-0.71	-	-	Gauge higher than Staff.
SG308	577351.639	664608.499	108.83	112.58	SW	yes	-	yes	-	-	-	-	no	-	-	3.26	-	0.82	-	-	
SG309	576865.819	665111.481	107.67	111.53	SW	yes	-	yes	-	-	-	-	no	-	-	2.41	-	0.81	-	-	
SG310	576095.51	663395.517	111.83	114.83	SW	yes	-	yes	-	-	-	-	no	-	-	2.27	-	0.32	-	-	

NOTES:

1. - Well inventory was completed March 31 as part of comprehensive Water Level Round (previous inventories: October 31 - November 3, 2005; July 1993)
2. - Well clusters are separated by spaces (note some clusters contain OW and MW wells, which are sorted by series).
3. - Survey: p = pvc c = casing
4. - Source: Table 5-1 - Phase 1A Report (CDM, 1987)
5. - Field measurements were adjusted for: thicknesses of concrete pads, which were build slightly above or at grade (0.25');
   water level meter probe configuration, reading point to end of probe (0.28'); and for heave (pfh) as noted at well.
6. - Staff Gauge rulers: Left side counts 36 at top to 0 at bottom, Right side counts 0 at top and 36 at bottom.
7. - Staff refers to staff gauge stake. Gauge refers to yardstick attached to stake. Yardsticks are exactly 36" long.
8. - SG-302 has two gauges that overlap by 0.15 ft. For simplicity, the top gauge is ignored because water levels were below the top of the lower gauge. SG-307 the gauge is higher than the staff, hence negative number difference between Top of Staff and Top of Gauge.
9. - Measuring Point (MP) elevations updated for wells OW #'s 1, 5, 13, 15, 34, 41 (currently missing), and 49 (to 1995 survey data); and wells MW-202 B/D/S and OW #'s 7, 8, 32, and 33 (to 2006 survey data). Updates necessary due to changes/damage to well configuration.

DATUMS: NAD27 MA Geodetic Disc 16-E and 16-C, NGVD29, Massachusetts State Planer Feet.
NAD27 - North American Datum of 1927
NGVD29 - National Geodetic Vertical Datum of 1929

Well History - OW and P series installed by CDM, 1987; M&E installed series PZ-1994, MW-200s-1995, MW-300s-2006

Abreviations and Misc. Notes

accep - Acceptable Condition
dmgd - Damaged Condition
ft bgs - feet below ground surface
ft TOC - feet from top of casing
ft PVC - feet from top of PVC pipe
Diff. TOC/PVC - Difference in feet between Top of Casing and Top of PVC well pipe.
ID - Identification
illeg - illegible
"-" - not applicable or nor data available.
nv - Not Visible
OB - OB - Overburden
pfh - possible frost heaving
j-plug - air/water tight expansion cap set in well pipe (pvc cap covers well pipe and is not air/water tight)
Well IDs - Wells that were not clearly marked were re-labeled, using paint pen, on protective pipe side and top.

TABLE A-2. SUMMARY OF GROUNDWATER FIELD PARAMETER MEASUREMENTS FOR THE DECEMBER 2005 AND FEBRUARY 2006 MONITORING ROUNDS

LOCATION ID	SAMPLING DATE	Water Level		pH		ORP		SPECIFIC CONDUCTIVITY		TEMPERATURE		DISSOLVED OXYGEN		TURBIDITY		FLOW RATE	
		INITIAL (ft)	FINAL (ft)	INITIAL	FINAL	INITIAL (mV)	FINAL (mV)	INITIAL (mmhos/cm)	FINAL (mmhos/cm)	INITIAL (°C)	FINAL (°C)	INITIAL (mg/L)	FINAL (mg/L)	INITIAL (NTU)	FINAL (NTU)	INITIAL (mL/min)	FINAL (mL/min)
B&M Railroad Landfill																	
MW-213S	19-Dec-05	7.70	7.65	6.86	6.96	-90.3	-132.2	1652	1594	11.48	11.89	1.40(2)	0.23(2)	3.08	2.55	230	240
MW-213D	19-Dec-05	6.90	6.90	7.36	6.50	170.6	58.0	653	645	9.89	9.60	1.56	0.24	245	7.81	280	220
MW-213B	19-Dec-05	6.45	6.50	6.61	6.80	24.8	-17.6	607	558	8.44	8.84	2.01	0.91	14.2	14.0	80	88
MW-214S	19-Dec-05	4.12	4.27	6.45	6.64	-92.0	-109.7	299	275	9.20	9.97	2.50	0.83	17.1	1.5	100	208
MW-215B	19-Dec-05	4.71	5.70	7.77	8.13	131.0	115.0	212	216	8.80	8.27	7.41	3.57	8.64	5.70	210	65
ASBESTOS LANDFILL																	
MW-305S	21-Feb-06	8.38	8.38	6.83	6.78	83.7	84.3	589	589	6.22	6.14	0.59	0.57	1.51	1.07	356	360
MW-305D	21-Feb-06	8.55	8.55	7.18	7.62	139.4	92.5	1109	1316	7.71	8.30	1.91	0.22	1.42	1.24	320	240
MW-307S	22-Feb-06	9.05	9.06	7.50	7.33	-69.0	-25.1	328	321	6.48	8.22	6.34	0.79	23.2	1.84	80	95
MW-307D	22-Feb-06	5.45	5.45	7.05	7.12	8.3	-288.1	942	924	9.02	9.52	2.85	0.81	257	2.28	320	220
MW-307B	22-Feb-06	8.30	8.95	7.37	7.77	-156.4	-315.0	259	254	8.83	9.75	1.43	0.32	21.5	2.82	130	220
MW-308B	22-Feb-06	6.69	6.73	7.35	7.03	60.6	-32.5	730	805	8.54	8.43	6.65	0.74	82.8	4.14	160	94
OW-7	22-Feb-06	6.25	6.25	6.20	6.24	82.0	78.4	445	520	9.47	9.30	1.85	0.49	37.7	3.31	240	240
OW-8	22-Feb-06	6.53	6.53	7.07	6.60	-64.0	-58.6	428	406	8.77	9.37	2.28	0.24	28.4	2.94	280	260
B&M LOCOMOTIVE SHOP DISPOSAL AREAS (A & B)																	
MW-204S	15-Dec-05	13.44	13.44	5.26	5.22	175.7	148.6	1572	1907	9.33	10.79	1.67(2)	1.12(2)	32.4	9.32	96	96
MW-205S	15-Dec-05	8.22	8.25	5.87	5.79	245.4	199.7	166	196	11.93	12.18	1.11(2)	0.47(2)	12	3.8	288	296
MW-206S	13-Dec-05	7.90	7.90	6.37	5.85	292.2	300.7	751	747	9.21	9.81	2.6(2)	0.86(2)	3.1	1.1	120	120
MW-206D	13-Dec-05	7.95	7.95	6.12(2)	5.79(2)	487.8	519.2	788	751	10.04	10.64	3.23(2)	1.98(2)	1.85	0.97	304	320
RSI LANDFILL																	
MW-210S	20-Dec-05	6.50	6.55	6.11	5.98	-2.1	5.8	488	407	7.36	7.03	3.31	0.35	36.8	4.20	240	240
MW-211S	20-Dec-05	4.92	4.94	6.27	6.28	-44.6	-102.4	325	339	8.20	8.62	0.73	0.17	114	6.75	272	296
MW-211D	20-Dec-05	4.77	4.77	6.21	6.20	-34.1	-74.4	713	773	8.71	11.09	2.33	0.69	24.8	4.92	120	244
MW-212D	20-Dec-05	4.73	4.74	6.45	6.43	76.0	30.6	363	397	6.98	9.49	2.15	0.49	40.7	2.62	92	112
MW-212B	20-Dec-05	4.95	5.03	7.08	6.63	163.1	-5.1	891	777	10.56	10.58	0.86	0.18	366	14.1	400	360
B&M OIL/SLUDGE RECYCLING AREA																	
MW-301S	23-Feb-06	9.17	9.17	6.51	6.58	-6.5	-15.0	473	478	6.04	6.24	0.57	0.27	18.5	1.98	196	200
MW-301D	23-Feb-06	10.35	12.22	7.72	7.69	-93.7	-199.8	232	173	9.53	9.17	2.96	0.67	>1000	635	184	132
MW-301B	23-Feb-06	7.96	11.32	7.57	7.54	-98.4	-257.5	157	151	9.14	9.77	1.23	0.78	149	112	78	64
MW-302S	20-Feb-06	4.95	4.95	6.55	6.44	101.1	76.9	220	241	5.47	6.13	4.63	1.05	254	4.29	366	368
MW-303S	20-Feb-06	2.90	2.90	6.12	6.18	-31.5	-60.9	315	287	6.99	6.96	1.74	0.15	127	2.65	360	360
MW-202S	20-Feb-06	2.29	2.27	6.14	6.11	-42.8	-57.3	277	262	8.85	8.97	0.86	0.26	13.5	4.87	205	90
MW-202D	20-Feb-06	2.40	2.40	6.34	5.52	135.2	178.1	226	224	11.40	11.29	3.2	1.44	12.5	2.75	300	240
MW-202B	20-Feb-06	2.00	2.40	8.26	7.98	-22.5	7.7	226	164	9.69	9.24	7.28	0.32	41	16.9	70	99
MW-203S	15-Dec-05	3.70	3.70	5.99	5.97	-13(2)	-20.7(2)	353	327	10.82	11.26	0.70(1)	0.39(2)	19.5	4.97	360	360
MW-203D	15-Dec-05	4.00	4.00	6.85	6.37	1.6	-7.4	266	283	9.66	10.28	13.0	0.50	6.7	3.83	220	240
MW-203B	15-Dec-05	5.15	5.85	7.23	7.13	365	384.9	243	234	9.14	9.76	2.09	0.72	1.97	1.88	140	115
CONTAMINATED SOILS AREA																	
MW-304S	21-Feb-06	6.05	6.08	7.60	6.51	90.3	214.4	109	77	7.41	6.99	10.78	10.13	2.58	0.31	240	210
MW-304D	21-Feb-06	6.15	6.16	6.82	6.22	177.9	198.5	214	202	10.27	9.29	1.27	1.71	74.8	4.83	320	100
MW-304B	21-Feb-06	6.30	6.30	7.41	7.27	-120.9	-167.3	1143	1399	8.78	10.27	3.43	0.35	107.2	1.98	140	216
OW-35	21-Dec-05	3.85	4.47	7.14	7.28	107.2	29.9	492(1)	500(1)	10.98	12.52	1.91	0.21	90	4.8	80	120
OW-37	21-Dec-05	4.45	4.45	6.82	6.31	53.0	14.5	872	1217	9.54	9.85	2.24	1.50	45	50	120	120
OW-38	21-Dec-05	3.80	3.80	6.68	6.04	250.4	101.4	288	290	11.75	11.69	1.26	0.36	14.9	1.40	300	300

TABLE A-2. SUMMARY OF GROUNDWATER FIELD PARAMETER MEASUREMENTS FOR THE DECEMBER 2005 AND FEBRUARY 2006 MONITORING ROUNDS

LOCATION ID	SAMPLING DATE	Water Level		pH		ORP		SPECIFIC CONDUCTIVITY		TEMPERATURE		DISSOLVED OXYGEN		TURBIDITY		FLOW RATE	
		INITIAL (ft)	FINAL (ft)	INITIAL	FINAL	INITIAL (mV)	FINAL (mV)	INITIAL (mmhos/cm)	FINAL (mmhos/cm)	INITIAL (^{o}C)	FINAL (^{o}C)	INITIAL (mg/L)	FINAL (mg/L)	INITIAL (NTU)	FINAL (NTU)	INITIAL (mL/min)	FINAL (mL/min)
UN-NAMED BROOK WELLS																	
MW-207B	13-Dec-05	4.90	4.90	6.71	6.15	402.1	386	20934	23304	8.50	8.62	4.53[2]	0.44[2]	162	6.26	120	180
OW-25	13-Dec-05	4.78	4.78	6.87[2]	6.89[2]	384.2	310	15710	20373	9.53	9.24	4.60[2]	0.68[2]	65	13	178	176
OW-26	13-Dec-05	4.95	4.96	8.53[2]	8.65[2]	267.3	81.8	795	828	9.94	9.66	2.35[2]	0.32[2]	8.19	7.0	160	180
OW-1	20-Dec-05	4.35	4.35	7.52	6.96	133	215.4	621	630	7.31	8.50	3.86	0.30	13.3	2.04	140	140
OW-2	20-Dec-05	3.11	3.11	7.22	6.39	166.0	96.4	654	610	8.59	9.20	6.09	0.54	16.2	3.38	136	164
BNZ ASBESTOS PIT AREA WELLS																	
OW-9	15-Dec-05	5.45	5.40	5.23	4.93	199.6	245.5	3822	3855	10.42	10.50	2.97	0.68	19	18.4	140	140
OW-10	15-Dec-05	5.80	5.80	4.95	4.92	126.7[2]	197[20	724	694	11.12	11.47	1.67[2]	0.97[2]	25.5	4.48	215	240
OW-12	15-Dec-05	6.00	6.20	7.57	7.55	-91	-170.1	326	327	8.14	8.18	0.81	0.25	15.2	7.5	130	84
MW-208S	16-Dec-05	5.29	5.25	5.84	5.76	49.0	46.2	218	214	12.23	12.37	1.10	0.25	154	42.6	240	205
MW-208D	16-Dec-05	5.30	5.30	6.13	5.87	268.4	260.0	216	251	12.03	11.92	8.2	0.46	5.38	1.09	244	240
MW-208B	16-Dec-05	5.78	5.78	6.61	7.00	134.3	1.3	382	387	10.88	11.56	3.49	0.51	12.0	4.26	130	135
OW-20	21-Dec-05	5.47	5.46	6.13	5.94	17.5	22.6	879	883	10.19	10.45	1.06	0.51	38.0	2.76	336	348
MW-209B	21-Dec-05	6.28	6.17	7.06	6.88	-36.0	-49.9	645[20	646[20	9.64	10.29	5.10	3.94	55.6	2.78	264	152
POND STREET/DOWN GRADIENT WELLS																	
MW-01[1]	16-Dec-05	-	-	-	7.03	-	241.8	-	182	-	9.48	-	6.41	-	< 5.0	-	-
MW-01A[1]	16-Dec-05	-	-	-	6.72	-	258.4	-	230	-	9.82	-	8.73	-	< 5.0	-	-
MW-01B[1]	21-Dec-05	-	-	-	6.43	-	120	-	207	-	9.62	-	11.4	-	-	-	-
MW-01C	14-Dec-05	3.22	3.22	6.25	5.74	259	292	230[2]	193[2]	7.58	9.34	2.80[2]	0.42[2]	16	1.57	120	124
OW-49	14-Dec-05	4.15	4.10	6.97	6.38	197.5	54.9	675[2]	658[2]	7.61	9.10	8.0[2]	1.16[2]	7.5	2.3	140	150
OW-50	14-Dec-05	3.90	3.90	6.26	6.15	254.3[2]	182.3[2]	307[2]	328[2]	10.72	9.78	1.28	0.63	310	7.41	300	230
OW-51	14-Dec-05	3.32	3.40	6.50	6.47	66.6	-3.7	521[2]	511[2]	10.82	10.98	0.96	0.27	10.6	3.36	324	190
OU#1/UP GRADIENT ASBESTOS LANDFILL																	
MW-306S	23-Feb-06	7.91	7.91	7.34	7.37	-70.6	-72.6	370	369	7.87	7.82	1.69	1.77	17.50	0.43	200	236

NOTES:

[1] MW-01/A/B wells are barcad type wells. With this type of well, initial parameters weren't available due to available purge volume and methods of sampling. Wells were sampled from 12/14-21/05, with readings taken on date indica

[2] The instrument failed calibration checks as set forth in M&E's 2005 Groundwater Sampling SAP.

Initial - All initial readings were taken at the start of purging.

Final - All final readings were taken following well stabilization.

^{o}C - degrees Celsius

NR - Not Recorded

mmhos/cm - micro ohms-1 per centimeter

NTU - Nephelometric Turbidity Unit

mL/min - milliliters per minute

NS - Not Sampled

mg/L - milligrams per liter

ORP - Oxidation-Reduction Potential

mV - millivolts

APPENDIX A.2

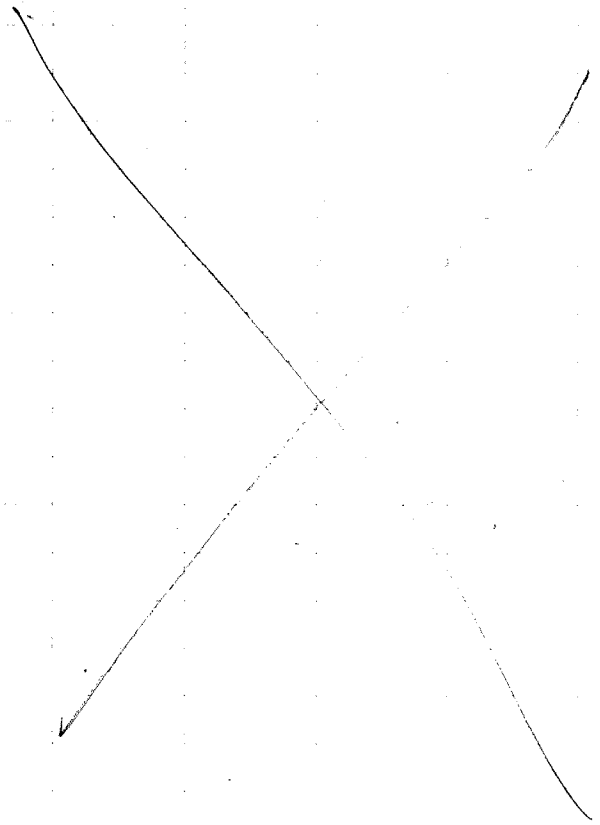
Field Sampling Logbook #1

- **Well Inventory**
- **Site Walks with Bidding Subcontractors**
- **Site Clearing**
- **Groundwater Sampling - Round 1**
- **Existing Well Repair and Redevelopment**

Location _____ Date _____

Project / Client _____

(1350) I. lock gate inner w/ cable lock
Outside gate w/ # 2126. master lock.



Location N. Billerica, MA Date 10/31/05

Project / Client IHP / USEPA

07:15 L. O'Connor + Bill Abrahams. Demaffe arrive at the staging area. unlock outside gate w/ 2126 key - staging area fence has cable lock.

Take photos of staging area.

- Ruts that need to be regraded
- Power line
- water line
- Trees / bush that needs to be cleared.

Go over to meet John Colins + Vern MacPhee of the railroad.

John comes out - Vern has been called out to another site. John asked us to do RR area tomorrow when Vern will be back.

Location N. Billerica MA Date 10/31/05
Project / Client IHP / USEPA

Did well survey in lumberyard area (contam. soils area). - checked in w/ lumberyard before - contact name - John C. ~~AA~~ Junod - Branch mgr of McQuesten Co.
also did ON-47/48
Did wells by BNZ - checked in at reception - they said OK - no contact name received.

Did wells out by Asfestos lagoons - there are ATV tracks near + leading up to edge of asbestos lagoons - signs have roots growing all over them. TOOK photos

Looked for P-4 - found remnants of it - it was in shards on ground - had

Location N. Billerica, MA Date 10/31/05
Project / Client IHP/USEPA

been shot @ with a shotgun

Did wells south of M. canal near BNZ
P-2 was cut off at grade

P-1 near old ~~@~~ General Latex - (driveway off High St.)

ON-15/16 best accessed through woods near ON-13/14 - ~~two~~ then walk along tracks.

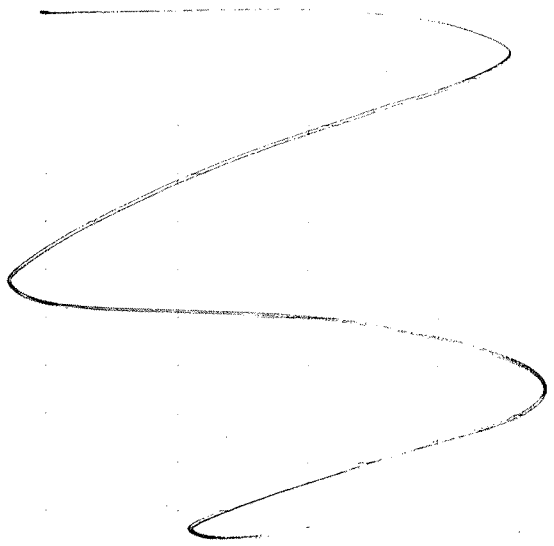
went over to Spincraft. Spoke to personnel there - the president of the Co. and Murray Pitchman (QA Mgr/ Iso mgr/ OSHA officer) - Murray would like the results.

Location N. Billerica Date 10/31/05

Project / Client IHP / USEPA

OW-32/33 found under neath a car - these are flush mount wells - not sure if they have always been flush mount.

16:45 L. O'Connor + B. Abrahams. Demaffe depart~~e~~ site - its ~~be~~ getting dark outside.



Location N. Billerica, MA Date 11/1/05

Project / Client IHP / USEPA

0715 L. O'Connor + B. Abrahams - Demaffe arrive msite Check in at Spincraft (as requested) then looked behind Spincraft for OW-17/18/19 - could ~~do~~ not find.

went out to OW-44/45/46 can be accessed by vehicle, but access road is w/in 50 ft of RR. - wells are not.

met w/ John Collins again - he said Vern was not again and asked if we could wait until tomorrow. O'Connor ~~I~~ showed him how many wells we had to do in the area - he said - OK you can do them - just be careful of RR.

Location N. Billerica, MA Date 11/1/05

Project / Client USEPA / IHP

Did wells on the RSI landfill & Asbestos landfill
Could not find OW-07/08 - will go back for that one

Did wells near OW-1 and access road.

14:45 L. O'Connor + B-AP depart site.

Location N. Billerica MA Date 11/2/05

Project / Client USEPA / IHP

0715 L. O'Connor + Bill A-D arrive on-site

go to Spincraft check in try to find OW-17/18/19 - could not locate.

Check in at lumber supply co (Cooperative Reserve Supply) and tell them what we are here to do. Receptionist comes back (after asking someone) tells us to come back when the mgr. is here (~ 9 am). This is oil/sludge recycling area
Go back to oil/sludge recycling area
Meet with Richard Hosterman. He walks around with us and shows us the wells that

Location N. Billerica, MA Date 11/2/05

Project / Client ~~IAP~~ / NSEPA

he knows of. We tell him that we need to do more work so we will be here on the property for a while.

could not locate PZ-101 found MW-203 duster

could not locate P-11 - likely under a large pile of dirt.

Found OW-41 destroyed - took pictures of it - it was right near the edge of pavement. this area was paved recently. Well standpipe was ~~tilted~~ horizontal! Kind of buried. Trash paved ~~of~~ over the area.

Found PZ-102, MW-201 duster

Location N. Billerica MA Date 11/2/05

Project / Client IAP / NSEPA

not found. likely destroyed. - new RR tracks installed for Coop. Reserve supply operations

P-12 not found - likely destroyed - found strange bolted cap - Richard Hosterman had told us that he thought it was a water line - it was a possible ceramic pipe? This is probably not P-12 but it is in the vicinity. Photos taken.

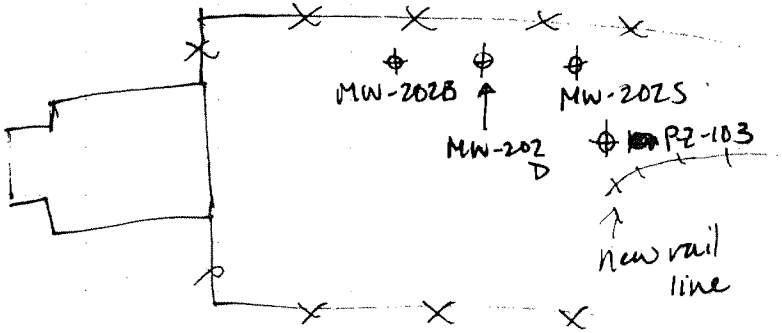
MW-202 duster (S/D/B) + PZ-103. Wells were made flush mount when paving occurred. ∴ survey is off.

Location Iron Horse Park Date 11/2/05

Project / Client Billerica, MA - EPA

B. Abraham-Demmke - Lauri O'Connor

MW-202 cluster + PZ-103 orientation - Photos taken



After leaving sludge area mfe proceeded to the Shafer Landfill to OW-49/50/51 and MW-1/1a/1B/1c The OW's went without an issue. ~~At the~~ At the ~~barcad~~ barcad MW-1 wells the owner (as reported) asked about our activities. When informed, the owner seemed more than amicable - Water levels and well depths were not possible in the barcads since a slope indicator WL was not avail. Tubing in tubing was also

Location _____ Date 11/2/05

Project / Client _____

an issue in at least one well and will require a hook to fish out - mfe proceeded to the S. central area of the site next to inspect OW-25/26/27 and MW-207 (which was labeled MW-207B on the under side of the well casing cap). Then proceeded to OW-22/23. No issues at these locations. By this time it was too dark to proceed to another location. mfe Departed site @ ~1720 hrs.

END

Location IRON HORSE PARK Date 11/3/05

Project / Client Billerica, MA - EPA

B. Abrahams-Demette, Stan Hatfield.

ARV: 0615 Hours

Weather is T~ 45°F, no wind, 80% clouds high humidity.

First event is to go inspect P10 before heading into the Northeast corner across the tracks and Canal from the Rail/Locomotive MAINT. building. Completed the series of wells in this area without much difficulty. One piezometer PZ-105A was destroyed during the creation of a high tension power line pole and one well OW-39(40?) was hit by a vehicle and now slants at ~25° angle. Upon completion of this area M&E proceeded to the Asbestos Landfills to make another effort at finding OW-7/8. Efforts included canvesing the entire embankment on the well side and also measuring from a known reference point. The effort was greatly hampered by the

Location _____ Date 11/3/05

Project / Client _____

density of shrubbery and pucker brush (thorny) which stood about 3-4 ft high. Given the location of the wells, M&E suspects that they still exist, but with out grubbing the land fill slope, the wells will probably not be found. OW-17/18/19 were not investigated but by the end of yesterday (survey of the former sludge area) the general area of these wells appears to fall in a beaver swamp/pond that was likely not in existance 10 years ago.

At around 1200 hrs M&E moved to the B&M Landfill area. Locating wells in this area was difficult due to the amount of overgrowth that has taken place. M&E met w/ good success though, and was able to locate all wells relatively quickly. A diagram depicting the locations and flagging is found on Page 72. The only notable

Location _____ Date 11/3/05

Project / Client _____

notable find was PZ-115. A layer of product was found in this piezometer. The thickness was difficult to discern due to the high viscosity of the substance (similar to that of warm motor oil) The black product gobbed up the o/w probe making it diffcult to discern the ~~thickness~~ after 3 Attempts. M§E's best guess is 0.1-0.5 Feet of product was in the well. M§E dibnot have time to retreat to the van for a bailer due to time constraints (early sunset) and # of wells left to complete.

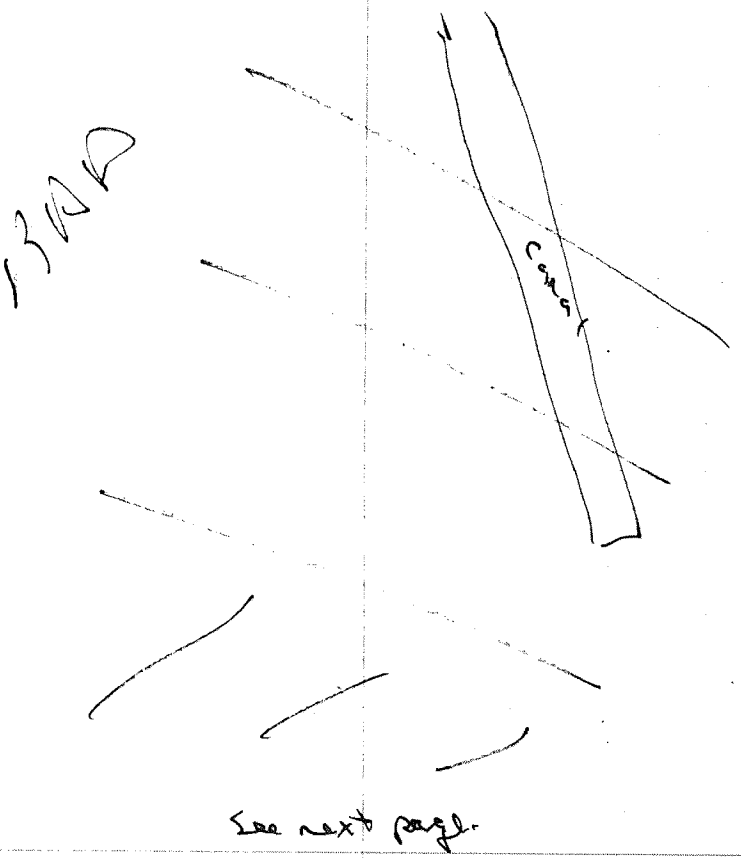
The Final set of wells were the background wells OW-52/53 and MW-200S/I/D. These wells are located in the back lot of COPART AUTOAUTIONS. When approached - AUTOAUCTIONS refused access to the wells and deferred us to speak w/ the gen. manager tomorrow (She was out today).

Location _____ Date 11/3/05

Project / Client _____

The general manager is Lisa Doherty @ Copart Auto Auctions 978-667-6787. M§E Departed at 1740 Hors.

B§M Land fill



See next page.

Location _____ Date 11/3/05

Project / Client _____

B&M LANDFILL flagging lines to wells and piezometers. Due to size of landfill and density of vegetation and time constraints M&E could not flag lines to all wells from a central location.

PZ-113: following road which runs approx parallel w/ canal. At bend in road a shell of a volkswagen rabbit is flagged orange. Well is located to right follow paint trees

MW-213: Continue on same road to end. follow flagging tape approx 100-150 feet from there - stay right at fork.

PZ-114 Going left at fork follow flagging. Well is just before the MAIN cut thru' on the site - Large block concrete.

MW 214: Heading along the same line as PZ114 and a little right. Look for flags high up in a triple cluster of river birch trees. Wells ~ 50 ft from waters edge.

PZ115: ~ 100-125 ft from MW-214 on a line perpindicular to the pond thru 214 to 115. Birch tree flagging @ 214 can be seen from 115 flagging high up in tree.

NOTE Trees around well are all dead.

MW-215. Follow Road along active rail tracks

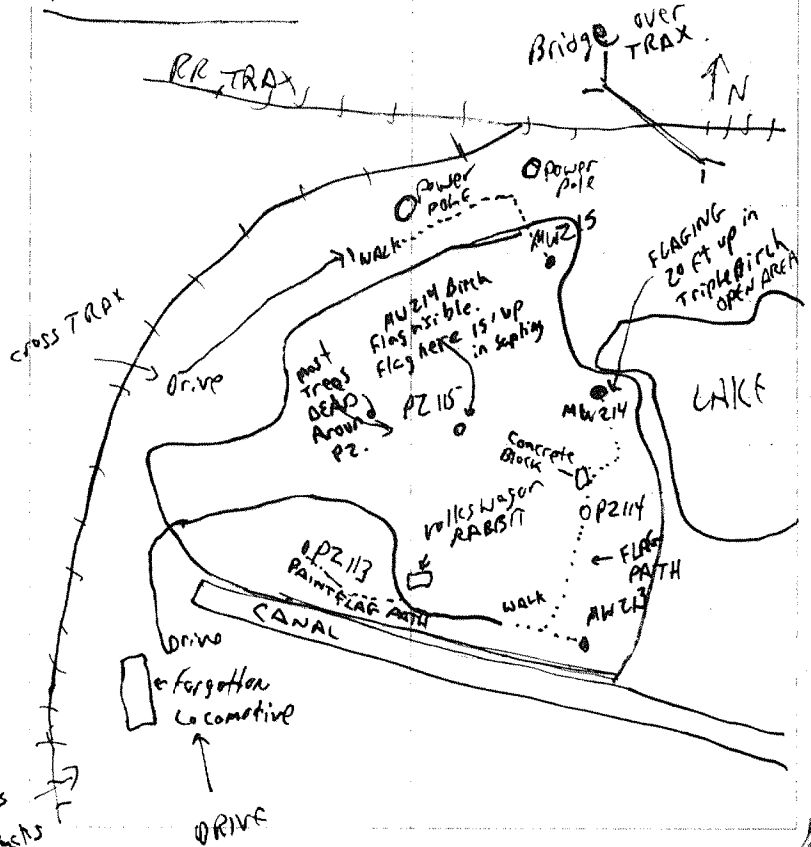
Location _____ Date 11/3/05

Project / Client _____

at end of road follow berm of waste along tracks past high tension pole 1 almost to pole 2. At end of continuous berm take right into woods. Wells approx 150 ft.

NOTE - at location MW 214 road bridge over trax and lake are visible to North

ARCH DIAGRAM.



Location IHP Date 11/9/05

Project / Client Billerica, MA

Sean C. Bill A-D

Half day site visit to locate OW-7 & OW-8 and to investigate new well locations.

Arrived at site. Proceeded to 4 stakes set and GPS by Laurie O. (M&E) over the weekend.

Located 4 stakes, from which SC & BAD proceeded to search out the missing wells OW-7/8 These wells are considered significant to the up coming investigation due to their location east of the asbestos landfill.

Using airial/sat photos overlaid by the site map and using measurements off 2 of the 4 stakes SC and BAD were able

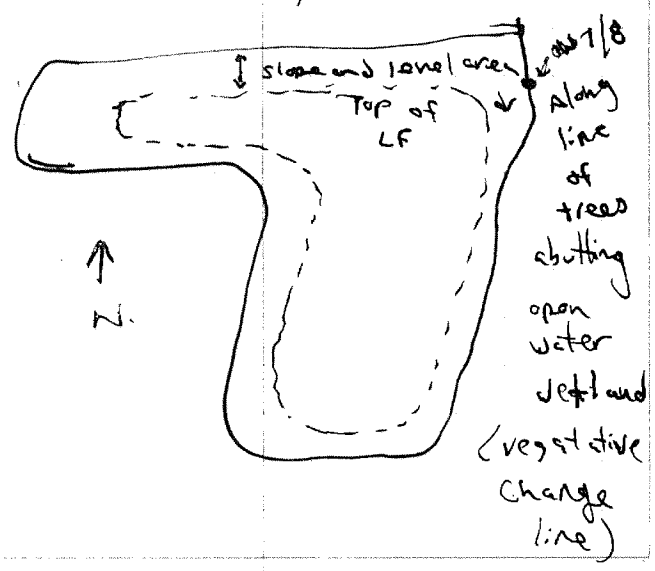
Location Date 11/9/05

Project / Client

to locate the missing wells.

~~NOTE: on Nov. 4, Stan H (M&E) and BAD completed.~~
~~BAD - mistaken, this was 11/3 - already documented.~~

OW-7 and OW-8 were located at the very edge of the toe slope and low level area, of the asbestos landfill, adjacent to the ready wetlands



Location _____ Date 11/7/05

Project / Client _____

OW-7/8 were heavily damaged, but not entirely destroyed. Both wells were missing protective pipe lids and locks and both looked as if they had been hammered with a sledge. The protective pipe was bent in and well pipe PVC busted.

OW-7 had no obstructions in well, and was inventoried

OW-8 not was also inventoried but at first appeared to have an obstruction @ ~5 ft. After fiddling w/ WL meter to see if obstruction was possible the obstruction broke away (as if a layer of ice had formed across the well) and the WL went to depth.

Location _____ Date 11/7/05

Project / Client _____

SCS&A then proceeded to investigate the tentatively identified locations for the 15 new wells to be installed.

SPD

Location IHP Date 11/15/05

Project / Client Billerica MA

Bill A-D & Laurie O'c

M&E Arived at the Site at 0730 hrs to begin restoring locks to all the wells. The well inventory required the removal of all locks by bolt cutters due to the age and dis-use of the locks.

While replacing locks, ~~obser~~ observations and were made to fill missing data from inventory and to record more specific detail about the wells.

OW-49 } —— PC
50 } Survey P
51 } P

big A top of LIDS all 3

Location Date 11/15/05

Project / Client

WELL	TOPVC/C	CAP	Survey
PZ-112	0.025 wrong PVC meets steel	PVC	C only
OW 34	X	J added	P/C
↓ 35	X	J added	P only
↓ 36	0.17	J added	P? No casing
PZ113	X	PVC	C only
MW213 S	X	PVC	X
↓ B	X	J	X
↓ D	X	PVC	X
MW214 S	X	PVC	X
↓ B	X	PVC	X
↓ D	X	PVC	X
MW215 S	X	PVC	X
↓ B	X	PVC	X
↓ D	X	PVC	X
PZ 114	X	PVC	C only ✓
PZ 115	X	PVC	" ✓

MW206 SBD Caps are = PVC / PVC / PVC
PZ 106A/104A CAPS are = PVC/PVC
PZ 104B/105B/106B CAPS are = PVC / PVC / PVC
MW 205 SBD CAPS are = P / J / P
MW 204 SBD CAPS are = PVC/PVC/PVC

MW 207 B	X	PVC	PC
OW-25	X	X	P-Y (? on very top cover)
OW-26	X	X	
OW-27	X	X	

Location _____ Date 11/15/05

Project / Client _____

Well	Toc/pvc	CAP	Survey
MW202 B	PVC 0.01 higher	J- water secure	N lower 2" pvc
MW 202 D	1.54	Not water sec. No J added	N lower 4" PVC Raise 2" pvc
MW202 S	~0.01	Water sec. J (added)	N pvc lower weep steel
Pz-103	PVC 0.08 higher	Not water sec. PVC Can't fit	N lower PVC weep steel
Bgs-Toc to grade			
2.15 OW-37	0.37	no	P
1.59 OW-38	0.25	no	P casing bent
1.9 P-17			
OW-24	1.35	No	P? C Not vis.
OW-28	0.91	No	C only
OW 29	x	No	PC
OW 30	1.18	No	C only casing off plumb.
OW 31	x	No	PC
MW-212 S	x	J	PC
↓ B	x	J	PC
↓ D	x	J	PC
OW-1	x	x	PC
OW-2	pvc looked broken not seemed to have been		PC
OW-3	x	x	PC
PZ-111	x	PVC	C
MW-210S	x	PVC	P/C
MW-210B	x	PVC	P/C
MW-211D	x	PVC	P/C
↓ 211 B	x	PVC	P/C
↓ 211 S	x	PVC	P/C
PZ-110	0.18	PVC	C only

Location _____ Date 11/15/05

Project / Client _____

Well	TOPVC-TOC	CAP Type	Survey
OW-46	0.77		Survey PC
OW-45	0.56		PC
OW-44	0.82		PC
OW-14	0.21		PC
OW-13	0.49		PC
MW208B	0.205	J PLUG	PC
MW208D	0.20	PVC	PC Tubing down well
MW208G	0.20	PVC	PC
PZ107	0.11	PVC	C
PZ108	0.28	PVC	PC
OW-9	0.24	—	P
OW 10	0.12	—	P
OW 11	0.35	—	P
OW 12	0.43	—	P
PZ109	0.18	PVC	C
OW 20	0.07	—	P
OW 21	0.125	—	P
MW 209	0.28	PVC	PC
MW 203 S	—	J PLUG	PC
MW 203 B	—	PVC	PC
MW 203 D	—	J PLUG	PC
PZ 102	—	PVC	C
Bgs-Toc to grade 1.14 = OW 47	0.04	To put cap needs work	PC
1.10 = OW 48	0.235	Capable	PC

Location Billerica, MA Date 11/21/05

Project / Client IRON HORSE PARK - EPA

S. Hatfield, B. Abrahams, De Malte

Well Development existing wells

Arv. 1200 Weather Sunny T~ 50's F

MW-203D first success.

MW-208D - Unclear, use of various techniques suggest well is clear 3/8" tubing seems grounded on hard bottom, Grundfos pump seems stuck on cap on bottom pipe. Purge H_2O clear to eye.

NOTE: Development method.

Start w/ Grundfos pump wh/ will act like surge block, pump @ 200Hz ≈ 6-12gpm depending on surging or no surge.

OW-20 Next

1700 After review w/ D. Silverman (M&E) It was determined ~~that~~ from well sampling sheets and log books that 203D, 208D and OW-20 were all fully developed. That depths on the well inventory were incorrectly referenced.

Location Date 11/21/05

Project / Client

MW-203D

As build depth 42.5 BGS Current 40.35

measured 41.00 bgs wt. 2.5 bgs 3XV ~20gal

12.40 begin 5 gal, 10 gal, 15 gal, 20 gal, 25 gal, 30, 35, 40 gal, 45 g, 50 GAL

- grey w/ black specks silt
- draw down ~0.8 ft. @ 8 min/5 gal
- Surging turbidity 370 @ ~6gpm - 12 gpm (Flow is less when surging) @1200
- Non-surging turbidity 12gpm 5.2 after 45 gals

TOC 44.13 + .28 probe - 1.4 TOC to ground = ~~42.73~~ 43.01 bgs + 0.28 probe = 42.73 43.01

- Stopped purging 1302 - 20 mins purging. Hole cleared to bottom, could feel lip of pvc/well pt. cap.

FINAL MEASURED Depth TOC = 43.25

MW208D

As built. 44 bgs Measured 40.9

Remeasure = 40.9 bgs

TOC TO GRADE = 2.1 ft

3XV = 220 gallons. WATER

GALS. Purged

5 10 15 20 25

Purge water clear, feels like bottom of well, pump hitting well cap. USED 3/8 tubing felt hard at bottom yet no silt in tubing holding up water

Comments:

DTW = 2.9 bgs

Purg. 6-10gpm drawdown ~0.2 ft.

Tubing Removed from Well.

Start 1355 hrs Pump kicked of briefly. Sed. H. tan, not much. feels like we're at bottom well

Tubing Measured 43.4 TOC to bottom → 41.3 ± bgs

Location _____ Date 11/21/05

Project / Client _____

OW-20 AS BUILD 43.5 ft bgs

Measured 37.98 ft bgs Re-meas: 38.78 bgs

TOC-grade = 2.25' DTW = 5.50' bgs

3X well VOL ≈ 15 gals

TIME START 1503 TIME END 1630*

GALS PURGED ~~5 10 15 20 25 30 35 40 45 50 65 70 75 80 85~~

COMMENTS:

INITIAL PURGE Bright orange-red silt/iron turn Tan br-gray. Drawdown 0.15 ft. @ ~5-10 gpm. Non surge gpm = 3 min 5 gal installed watera auto surger.

1545: Water fairly clear. Sed. compact. Attempting to pump water while surging no affect. Going to reverse situation and pump water back down well in effort to loosen sed. up then reinsert pump.

Re-introduced 15 gals clear purge water in effort to ject jet sed loose. Pumped grundfos down then put grundfos back in well to purge. No silt loosed. While pumping water down well used watera foot pump, which also

Location _____ Date 11/21/05

Project / Client _____

Showed no sed up. Sed is seriously dense or depth is wrong. Pumped 20 gals more ~~[illegible]~~ after 15 gals put in.

* Purge time ~1.5 hrs including reversing flow.

Depth TOC-bottom om = 40.3 + .20 = 40.50

= 2.25

= 38.33 bgs.

~~(should be 45.75~~

INFO FROM LOG BOOKS & Sampling Sheets

Discussion w/ Diane Silverman (m&e) She is sending info from log books and well sampling sheets via email for tomorrow.

BAD

Location N. Billerica, MA Date 11/22/05

Project / Client IHP / EPA

SH BAD

OW-10

Reported Depth = 65 ft. bgs

Measured " = 60.38 ft bgs

Remeasure = 62.0 +0.28 − 1.81 = 60.~~19~~47

TOC - GRADE = 1.81

DTW = 4.47 (4.7 pump = 0.23 dd)

3x Well vol ≅ 30 gal

FINAL TOC - Bottom = 62.29

TIME START 0810 TIME END 0855

GALS (each tic = 5 gal) ~~||||~~ ~~||||~~ ~~||||~~ |||

TURB @ 45 min and 90 GAL = 86 @ 2 gpm purge

Depth 62.29 TOC-Bottom

Believe we are @ bottom, but will try Nitrogen pressure to loosen bottom

NITROGEN worked well to purge entire well column [illegible] ~3-5 min. shedding 2-4 well vols. Totally clear after SM. SI

Reinstall pump for 10 MON. More add 10 gal purge

TURB = 7.85 @ 1.5 gpm.

1000 Leave OW-10.

Location Date 11/22/05

Project / Client

OW-25

Reported depth 60' bgs Measured 57.57' bgs

Re-measured Depth. = 60.3 ft TOC

TOC - Grade = 2.22 ft

dd 0.16 @ ~2 gpm

DTW = 4.34 3x Well vol ≅ 28 gal

FINAL TOC - BOTTOM = 60.52 ft

Begin Purge 11.19 11.52 out gas 11.54 Nope. Yep. Restart 12.25

End Purge 1250

GALS Purge (5 gal/tic) ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

DISCHARGE Lt. br silty water. FS lt MS found in bucket. Well cleared pretty well w/in first 10 gals. Moved pump 2 ft up screen after every 10 gals. FAIR AMT grey tan FS coming up from mid of screen zone.

1245 TURB 61 NTU @ 3 gpm ±

1250 TURB 13 NTU @ 1.5 gpm ±

BAD

Location _____ Date 11/22/05

Project / Client _____

OW-26

Reported Depth 40' bgs

Measured Depth 37.99 bgr

re-measured Depth 40.81' ~~bgs~~ TOC

TOC-Grade = 1.82 ft

Depth H_2O ~~~~ ft 4.12 ft

3 X Vol Wen = ~18 gal

Begin Purge 1312 End purge 1355

Final TOC-bottom = 40.55

GALS (5 partic) ~~~~

Initial slot black sed then translucent (low silt).

F-MS in bucket. Also organic particles (Peat?) 5 gals to clear 5-10 ft. section screen. Move up to 6-8 next.

Wb indicator on fritz, but appears to be not much drawdown ~0.2-0.3 ft.

Were able to confirm No dd @ 3 gpm

Strike that pump kicked off for second

2.5 NTU @ ~1.5 gpm

Location _____ Date 11/22/05

Project / Client _____

SUMMARY

Wells re-developed MW203D, MW-208D, OW-10, OW-20, OW-25, OW-26

MW-213B was listed, but later determined that depth of well bgs was incorrect on the inventory. The inventory showed depth of boring not well. Similar issues w/depths and measuring points were also encountered with the other wells. MW-213B was not re-developed.

Development of each well consisted of purging well @ 2-4 gpm using a grundfos rediflow pump (submusible) wh/ also acted as a surge block. The well screen was purged and surged (P/S) simultaneously in 2 ft. intervals, pumping 5 to 10 gals per interval, followed by P/S of the well riser. Final step was to place pump @ bottom of well, reduce flow to ~1.5 gpm and take turbidity reading. After removing pump well depth was measured. Variations per well location as follows.

MW-203D: No variations, proceeded as expected.

MW-208D: NOT very silty. Cleared quickly NTU's not taken due to concern about

Location _____ Date 11/22/05

Project / Client _____

about well depth bgs and why expected silt not purging. Used 3/8" tube to Prod. bottom to see about sed However, bottom Felt solid and well pipe had pt. cap lip in well. Believe well is clear, and inventoried depth was from TOC and not bgs.

OW-20. Same again. Initial purge ejected a lot of silt and iron, sand but well depth did not drop. Tried using grundfos to pump ~13 gals water back down hole in attempt to lossen packed silt and bail using water a foot pump. Water purged was only slightly silty Reset grundfos and purged 15 more gals clear water. End DAY 1.

OW-10 Day 2. Again depths were not as expected. No background log book or sampling sheet data. This time tried Nitrogen in 1/4" tubing to blast out sed to no avail. Did clear entire water column. Replaced grundfos and pumped 10-15 more gallons. Clear.

Location _____ Date 11/22/05

Project / Client _____

OW-25 Despite having little silt in well pipe, ejected a lot of medium sand which looked like well pack.

OW-26 Ejected one shot black sed (manganese) and cleared up rapidly.

WELL	MW 203D	MW 208D	OW-20	OW-10	OW-25	OW-26
Gals Purge	50	25	85	100	100	50
Well Volumes	~8	3+	17	10	13	8
Time Purge	22 min	~15 min	87 min	60 min	58 min	43 min
Draw Down @3gpm	0.8'	0.2'	0.15'	0.23'	0.16'	~0.2'
Turbidity	5.2	N/S clear	N/S clear	7.9	13	15
TOC-bottom	44.41'	43.25'	40.58'	62.25	60.32	40.55
TOC-Grade	1.40	2.10	2.25	1.81	2.22	1.82
Ft. BGS	43.01	41.15	38.33	60.44	58.30	38.73
Silt Removed	~2ft	0.25'	0.35'	0.06'	0.22'	0.24'
COMMENTS	Very silty and FS grey	Silt V. little grey	IRON Silt Fine Sand little medium sand gr-tan Inject jet water	Silt Fine to medium sand tan ~~Nitrogen~~ Nitrogen purge for sed	Medium Sand Sm. Silt	Fine Sand Some Silt

Location N. Billerica, MA Date 11/28/05

Project / Client IHP / USEPA

0850 L. O'Connor arrives on-site
Meets with the following:
Dale Randolph from Charter Environmental
Tom - WL French
Dion JM Environmental

Mike Fischer - Geologic
Charlie Wilder - JM Environmental

to do site walk for clearing.
2 separate areas for clearing.
① staging area - this area also needs to be regraded - crushed stone placed in driveway to staging area.

② New well locations around Asbestos Landfill.

All depart site @ 10:15.

Location N. Billerica, MA Date 12/7/05

Project / Client IRON HORSE PARK / EPA

0900 Arrive on site
Mike Fisher - EarthEx ON-SITE
Drew Shelby - Charter just arrived.
{508-584-8201 - Tom Garside NHB
No show as of 0925
Called NHB MA ofc. [Tom apparently NH ofc]

0930 NHB forgot APT. will come later for walk through. 1030 NHB ARW

EarthEx ?'s.
- Decon btw. holes
- Core / roller bit - pref. Core HQ
- Repair options ow 7/8
- 307 Location.
- Water access
- Clarify RR INS.
- Boring loss - pull selective few.
- CROSSTRACK criteria
- Asbestos criteria

Re: 307 wells

NHB forgot the meeting and came late.
Ended up overlapping two site walks so both saw same issues.
Offsite 1200 hrs.

Location North Billerica MA Date 12/8/05

Project / Client IHP / EPA

BAD, JM

0700 Arr Two men crew on-site waiting for Drew Shelby (charter) and Bobcat Equipment to arrive.

0725 Drew Shelby arrives Still waiting equipment

WEATHER

T ~ 25-30°f, wind 0-5mph clear skies sunny.

0800 Drew Shelby leaves. Noted, one of workers is underdressed for weather.

Workers:

Tim Bullock

Edgar DeLos Santos

0830 Joel stuck in traffic running late. Bobcat still not on site no clearing yet Took Tim around site to show him areas to be cleared. No probs.

0900 Meet w/ John Collins Guilford Rail System

Questions:

Location _____ Date 12/8/05

Project / Client _____

Water Access?

Think that should not be a problem Mike Davis facilities.

RR INSURANCE?

FIND ABOUT ins and flagmen, probly no problem VERN MacPhee contact.

CROSS TRACK MEANS? (MW-304)

No Concerns

0930 Return to Pond Rd Staging area. Joel now on-site. Tim & Edgar chain sawing large stuff. Bobcat folks got lost and stuck in traffic, so they're not here yet.

1000 - No bobcat Joel & Bill off for site run to orient Joel.

1130 Bobcat on-site, re-grading in progress. Left Joel to do as. Returned to office.

Location N. Billerica, MA Date 12/12/05

Project / Client IHP 004 / USEPA

0700 L.O'Connor arrives onsite (within Industrial Park area) to see if wells are accessible ~~to the~~ after the snowfall (15" of snow on 12/9/05)
L.O'Connor drives around - most wells are accessible

Go into Cooperative Reserve Supply Corp to tell them I will be ~~be~~ on their property.
L.O'Connor slipped on the ice near their visitor's door and fell on tailbone + wrist.
L.O'Connor left site after this to go back to office.

13:00 L.O'Connor arrives at staging area to meet plow. Get staging

Location N. Billerica, MA Date 12/12/05

Project / Client IHP 004 / USEPA

area + access to staging area plowed.
S. Hatfield + Br Abrahams-Demaffe arrive onsite
All carry equipment into trailer.
~~WL~~ S. Hatfield departs site.
L.O'Connor + Bill A-D stay onsite to set up trailer - they depart site at 16:00.

LO

Location N. Billerica, MA Date 12/13/05
Project / Client IHP OU4 / USEPA

0700 L. O'Connor arrives onsite
weather - cold, 14°F

S. Hatfield, S. Poudyal
N. Henderson, + Bill A-D
arrive onsite.

Set up generator to power trailer + provide some heat. Record water level meters + pumps (Bill A-D)
Calibrate equipment. (See cal log.)
Get bottles together (L. O'Connor)
General organization of equipment / supplies (~~S. Poudyal~~ all)
Calibration - YSIs (N. Henderson, L. O'Connor, S. Hatfield) turb + PID (S. Poudyal)
Have lunch
Mob to wells
Team 1 - Bill A-D, N. Henderson, + S. Poudyal
sample OW-25, OW-26, MW-207B
Team 1 problems / issues w/ these wells: freezing. FOK

W

Location N. Billerica, MA Date 12/13/05
Project / Client IHP-OU4 / USEPA

OW-25 Bill A-D had to keep flow rate up to keep lines from freezing. This elevated the turbidity. The turbidity at sampling was approx. 20 NTU.

Team 2 - S. Hatfield + L. O'Connor
sample MW-206S + MW-206D
No problems to report. except iron flock @ MW-206S
13:30 E. Decola arrives onsite to package
Complete sampling @ approx. 17:00
All go back to trailer to do cal checks + (see cal. log) demob equip. No heat yet - electric co. must come again to install meter. All must bring equip home so it doesn't freeze.
19:00 All depart site. E. Decola to Fed Ex

W

Location N. Billerica, MA Date 12/14/05

Project / Client IHP OU4 / USEPA

0700 ~~Well arr~~ L. O'Connor, S. Hatfield, Bill A-D, S. Pandyal & N. Henderson arrive onsite.

L. O'Connor + S. Hatfield go out to get gas for the generator + coveralls for S. Pandyal (the team only had 4 coveralls yesterday)

Remaining personnel organize equipment.

L. O'Connor + S. Hatfield return

Start up generator + heaters. Must warm up trailer before pumps can be decon'ed. (see cal log)

Calibrate instrumentation

Get bottles together

weather - cold, @ 10°F

mob to wells

Team 1 - L. O'Connor, N. Henderson, + S. Pandyal sample OW-49, 50 + 51

W

Location N. Billerica, MA Date 12/14/05

Project / Client IHP OU4 / USEPA

Problems w/ OW-49, 50, + 51

OW-50 tubing out of YSI was freezing.

L. O'Connor tried to blow out ~~flow~~ ice from tubing, but this elevated turbidity.

Turbidity was brought down to approx 7 NTU prior to sampling.

OW-50 also had black specks (floaters)

OW-51 had same iron floc, but turbidity went down to <5 NTU before sampling.

OW-49 - no problems to report.

Team 2 - S. Hatfield + Bill A-D sampled MW-01, MW-01B, + MW-01C'

MW-01C was sampled via bladder - no problems to report.

W

Location N. Billerica, MA Date 12/14/05

Project / Client IHP OU4 / USEPA

MW-01
MW-01A
12:30 MW-01B } barcad wells.

E. Decola on site to package
Slow recharge on the barcad wells.

MW-01 sampling was completed.

MW-01A - had no water in initial purge

MW-01B - VOCs + 1/4 SVOC baffle ~~was~~ obtained - not enough volume for rest of analyses
Volume for other analyses will be recovered at ∞ tomorrow or the next day. it is dark outside.

All back @ trailer
do cal checks + decon pumps (see cal log)

W

Location N. Billerica, MA Date 12/14/05

Project / Client IHP OU4 / USEPA

Collect an equipment blank EB-01

Environmental grade water Lot. No. 9104090 for VOCs

Equipment blank collected by putting a large pump in ~~the~~ a capped PVC pipe and pumping Env. Grade water (for VOCs) and DI water (for SVOCs 1,4-dioxane & Pest/PCBs + metals) through it!

EB-01 sample time: 17:00

All depart site @ 18:45.

E. Decola to bring samples to Fed Ex.

W

Location N. Billerica, MA Date 12/15/05

Project / Client IHP OU4 / USEPA

0700 L. O'Connor, S. Hatfield, N. Henderson, S. Poudyal, & Bill A-D arrive onsite.
Weather: cold, ~10-20°F
Calibrate equipment (see cal log)
gather equipment + gather bottles.
S. Hatfield went back to Barcad. duplicate MW-01
Mob to wells purged water from MW-01A
Team 1 - L. O'Connor, S. Poudyal, + N. Henderson
Sample ~~MW~~ MW-2035, D+ B cluster.
Problems to report with these wells:
MW-203B had somewhat poor recharge.
MW-2035 had a lot of iron floccle which clogged pump + caused turbidity to be high. Turbidity was reduced prior to sampling (to approx. 5 NTU)

10

Location N. Billerica, MA Date 12/15/05

Project / Client IHP OU4 / USEPA

Team 2 - S. Hatfield sampled MW-205S
Bill A-D sampled MW-204S
Problems with MW-205S: none with well itself, but problems with pump + freezing
Problems with MW-204S: Could not fit 2" bladder pump down well due to bend in PVC - had to sample w/small bladder pump
11:00 E. Decola + D. Laferte onsite to package
Also L. O'Connor + N. Henderson sampled OW-09, OW-10 & OW-12
Problems to repat:
OW-09 - slightly turbid, could not get turbidity down to 5 NTU - sampled @ approx. 18 NTU. Also low pH (4.93)

10

Location N. Billerica, MA Date 12/15/05

Project / Client IHP OU4 / USEPA

OW-10 - low pH (4.92) No other problems to report.

OW-12 - A lot of black floaters elevated turbidity. Turbidity brought down to 7.5 NTU prior to sampling.

All mob back to trailer to do cal checks, decon equipment, + package samples

S. Hatfield went back to Barcad to retrieve more sample. Completed sampling of MW-01A filled all but metals bottle for MW-01B.

18:30 N. Henderson departs site

~~AH~~

19:00 S. Pandyal departs site

19:45 L. O'Connor, S. Hatfield, Bill A-D, + D. Laferte depart site

D. Laferte + S. Hatfield to FedEx. co

Location N. Billerica, MA Date 12/16/05

Project / Client IHP OU4 / USEPA

0700 L. O'Connor, S. Pandyal, + N. Henderson on site.

weather - rain/ice, cold

Calibrate equipment (see cal log) get bottles together, get equipment together.

Plan for today: sample MW-208 cluster MW-208S, B+D

Problems to report:

MW-208D: no problems to report

MW-208S: obstruction in well - turned out to be tubing from last event. fished out tubing. Turbidity was elevated never went down to 5 NTU, due to high iron content. Sampled at around 40 NTU.

MW-208B - tubing in well, fished out. No other problems.

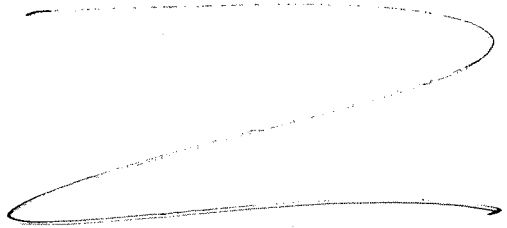
co

Location N. Billerica, MA Date 12/16/05

Project / Client IHP on 4 / USEPA

14:00 Mob back to trailer.
D. Laferte onsite to package samples.
~~Do~~ (see cal log)
N. Henderson does cal. checks on YSIs. S. Pandyal does cal. checks on PID + Turbs. L. O'Connor assists D. Laferte in packaging.

~~15:00~~
14:30 S. Pandyal + N. Henderson depart site.
15:30 L. O'Connor + D. Laferte depart site.



Location N. Billerica, MA Date 12/19/05

Project / Client IHP on 4 / USEPA

0700 - L. O'Connor, S. Hatfield, Bill A-D, + S. Pandyal onsite, Weather - cold, 14°
Calibrate equipment:
S. Pandyal - PIDs + Turb
S. Hatfield - YSIs
L. O'Connor - YSIs
Decon pumps - Bill A-D
Decon procedures:
(1) pull pump apart
(2) dispose of old teflon bladder
(3) inspect O-rings
(4) decon all pieces using liquinox + DI spray + ~~spray~~ scrub with brush.
(5) Rinse with Nitric + DI rinse
(6) Rinse with DI
(7) Pieces all dry in dedicated clean tub.
(8) Pieces reassembled w/ new bladder + (O-rings as necessary)

Location N. Billerica, MA Date 12/19/05

Project / Client IHP OU4 / USEPA

Gather equipment - S. Pandyal
Get bottles together - L. O'Connor

~~mob~~

11:00 E. Decola arrives onsite
Mob to wells on B+M RR landfill.

Wells to sample - MW-213 cluster, MW-214S, + MW-215B

14:00 N. Henderson arrives onsite
Problems / issues w/ wells

MW-213S - sampled by L. O'Connor
Purge water has chemical odor + is yellowish in color. Water is effervescing. Did not preserve VOC samples because addition of HCl made fizzing worse.

Location N. Billerica, MA Date 12/19/05

Project / Client IHP OU4 / USEPA

MW-213D - sampled by N. Henderson
slightly cloudy sample. Took a long time for turbidity to go down - stabilized around 7 NTU. Slight sulfide odor

MW-213B - sampled by S. Pandyal
low purge rate, poor recharge.

MW-214S - sampled by ~~Bill A-D~~ S. Hatfield.
No problems to report

MW-215B
very low flow rate. well sampled at slightly higher than 5 NTU (5.70 NTU) because it was getting dark + this well is in the woods - H+S issue.

All mob back to trailer
E. Decola packages samples.

Location N. Billerica, MA Date 12/19/05

Project / Client IHP OU4 / USEPA

17:00 N. Henderson departs site

& YSI Calibration checks - (see cal log)
L. O'Connor + S. Hatfield
PID + Turb cal checks - S. Pandyal
Bill A-D - decon pumps + cables

19:30
All depart site E. Decola to Fed Ex.

Location N. Billerica, MA Date 12/20/05

Project / Client IHP OU4 / USEPA

0630 L. O'Connor + S. Hatfield arrive onsite
others arrive shortly thereafter:
J. Meunier, N. Henderson, E. Decola + S. Pandyal
E. Decola to sample in the morning today, then package in the afternoon.

Calibration of YSIs -
N. Henderson + S. Hatfield
(see cal log)
Turbs + PIDs - S. Pandyal
Gather equipment + get bottles together - J. Meunier, L. O'Connor + E. Decola
Cut tubing.

wells to be done today:
MW-212D + B - L. O'Connor + J. Meunier
MW-211S + D - S. Hatfield + E. Decola.

Location N. Billerica, MA Date 12/20/05

Project / Client IHP OW4 / USEPA

OW-01 + 02 - N. Henderson + S. Pandyal

09:00 Constance Lapite onsite - to perform audit

Collect Equipment Blank (EB-02) date: 12/20/05

time: 9:00

done on small diameter bladder pump

0.85 (diam) x 18"

serial #(rental) # 1222

collected by pumping water (in a PVC pipe) through pump + tubing into bottles

for VOCs - used Environmental Grade water - lot # 9105100

for remainder of analyses (SVOCs, Pest / PCBs + metals) used DI water

VOCs preserved w/ HCl to <2

Metals preserved w/ HNO_3 to <2

mob to wells

OW-1 - sampled by N. Henderson

overseen by C. Lapite

Location N. Billerica, MA Date 12/20/05

Project / Client IHP OW4 / USEPA

OW-1 problems to report:

Due to low flow rate (on small diam. pump) could not fill VOA vials in one pump cycle ~~(flow~~

OW-2 - sampled by S. Pandyal

overseen by C. Lapite

Problems to report: bubbles in initial purge (tubing) but disappeared after some time. Black floaters in sample.

MW-212D - sampled by J. Meunier

Problems / Issues: sample was slightly turbid, but turbidity was <5 NTU when sampled.

MW-212B - sampled by L. O'Connor

Problems: Initial purge water was very sandy which elevated turbidity + caused pump to clog. Pump Pressure was increased which collapsed bladder. Pulled pump and rebuilt. Do readings

jumping around a lot - changed YSIs (since J. Meunier was finished w/ his YSI at that point). Will change DO membrane on YSI back @ trailer. Sample was slightly turbid - turbidity did not stabilize well. It jumped between 7 and 16 NTU for close to 1 hr.

MW-211D - sampled by E. Decola
Problems to report: DO jumping around as pump cycles - problem solved by taking DO reading as water enters YSI. Purged for 3 hr before turbidity went to <5 NTU.

MW-211S - sampled by S. Hatfield
Problems/issues - Initial purge had a lot of iron, which elevated turbidity. O-ring on pump failed. Pump pulled & re-built. Sample appeared

clear w/ low turbidity. Turbidity stabilized to approx. 6.7 NTU prior to sampling.

MW-210S - Sampled by N. Henderson
Problems/issues: Metallic odor noted.

All mob back to trailer to do cal/checks and package samples.

17:00 C. Lapite departs site

Cal checks:
YSI - N. Henderson
PID + Turb - S. Pandyal
Packaging - E. Decola + J. Meunier + L. O'Connor

18:30 N. Henderson + J. Meunier depart site
19:00 L. O'Connor, E. Decola, S. Pandyal + S. Hatfield depart site. E. Decola to Fed Ex.

Location N. Billerica, MA Date 12/21/05
Project / Client IHP ON4 / USEPA

0645 L. O'Connor + S. Hatfield onsite
0700 others arrive - N. Henderson, Bill A-D, + S. Pandyal
weather - cold, clear, 14°F
Plan for today: sample remaining 5 wells, finish metals sample of Barcad well MW-01B + collect equipment blank. Also demob instrumentation.

Trip Blank made - TB-07
sample date: 12/21/05
time: 09:00
Had to mix Env. Grade water
Lots: 9104090
9104050

Equipment Blank - EB-03
date: 12/21/05 time: 08:45
done on large bladder pump
S/N ~~W0~~ ~~W01891~~ 10891

LO

Location N. Billerica, MA Date 12/21/05
Project / Client IHP ON4 / USEPA

VOCs collected w/ Env. Grade water - had to mix lots 9104050 + 9105100

S. Hatfield goes back to Barcad wells to collect metals sample for MW-01B - gets sample. Also collects aliquots to do YSI readings.

11:00 E. Decola onsite to package samples
Mob to wells:
OW-38 - sampled by N. Henderson. No problems to report.
OW-37 - sampled by N. Henderson & L. O'Connor
Problems/issues to report:
DO readings jumping around - possibly due to high iron content in purge water. DO stabilized prior to sampling. High iron also elevated turbidity. Turbidity did not decrease past ~50 NTU prior to sampling.

LO

Location N. Billerica, MA Date 12/21/05

Project / Client IHP 004/ USEPA

OW-20 - sampled by Bill A-D
Problems/issues: Problems w/pump, but none w/well.

MW-209B - sampled by S. Poudyal
Problems/issues: DO readings fluctuated. Solved problem by taking reading at same point in pump cycle for consistency. Sample was slightly yellow.

OW-35 - sampled by S. Hatfield
Problems/issues: Tubing in well ~~the~~ from previous sampling that had to be fished out. Purge water was turbid at first, but cleared to ~5 NTU prior to sampling. Some drawdown ~~initially~~ initially but then waterlevel stabilized.

All back to trailer to do cal checks (N. Henderson + S. Poudyal), package, and demob gw event.

17:30 All depart site.

W

Location No. Billerica, MA Date 12/20/05

Project / Client IHP 004 / EPA

BAD M&E

ARV 0800 hrs
Heard from Chris Deveillers (Earth Ex), drillers will likely be in around 0900 hrs (at site)

0915: Tim Tucker } Earthex
Scott Adams }

Arv. on-site - woefully unprepared Had to switch trucks twice, left tools needed. Chris also did not do a good job of filling them in.

1115 Earth Ex off-site to get drums They had liquid drums but no way of transporting them. Got soil drums and use my personal truck (Bill M&E)

1230 Earth Ex returns from getting drums.

1310 Repairs @ MW-202 wells went well w/ no problems other than having to burst the 4" PVC well casing @ 2020 in order to fit roadbox cover on. Inside PVC cutter worked

Location _____ Date 12/28/09

Project / Client _____

Excellently. Also fixed PZ-3 located adjacent to MW202 wells. Locks brought by M&E are too large to fit the J-plugs in wells. Will need smaller. Wells capped though

1310 MW-202B purge ~20 gals clear water w/ trace ~~silt~~ sediment. went dry after ~15 gal Another 5 gal after 5 min recharge. Used compressed air jet down well to blow water out. Hose was ~80 ft so bottom at top of well screen.

1320 MW-202D Purged 30 gallons w/o stopping. Switch drums and pumped 50 gals more. At first grey then brown silt was very thick, by the end water was fairly clean.

1330 MW202S Purged 30 gals clear but strong odor

MW-202 cluster rehabbed except for cut in guard pipe to 202D (for drainage)

1430 Drillers off site.

Location Nc. BILLERICA, MA Date 12/29/09

Project / Client IHP OU4 / EPA

M&E: BAD

AKV. 0700

Today will repair OW-7 and OW-8 Looked at wells yesterday but Earthex had no means of fixing them and air hammer was not working.

0738 Drillers arrive on site

0800 Moved to OW-7&8. Called John Collins and let him know we would be working here today.

0930 OW-7 (near Thomas)

Had frost heaved piping (19 ft well) OW-8 (40 ft well) has a mind blip in pipe. Both full water b/c guard pipes grouted into bottom pipe ~1-2 ft. Cut weep holes in base pipes ~6-8 in. below grade. Cut guard pipes & PVC down low to get past frost and broken PVC. Using 6" x 3½ ft long guard pipes over 4" pipes which could not be pulled out. Had to cut back 6" pipe from 5' ft to avoid a 4 ft. stick up

Location _____ Date 12/29/05

Project / Client _____

1000 hrs

OW-7 (14' bgs) purged ~15 gals started silty but cleaned up almost immediately.

OW-8 (40 ft bgs) Musty smell but cleared up quickly just like OW-7. Purge ~20 gals let sit 5 min purge another 20 gals. Plenty water, just want to see if recharge brings in silt.

1015 OW-8 on second purge released another shot blackish silt but cleared quickly.

Purging method injected air

1100 All done except to get truck (earthex) unstuck. Had to take Tim (earthex) to Reading, MA to retrieve company truck to assist crew truck.

1145 Back on site w/ Earthex 2500 still not much luck.

1200 Left message for John Collins (BSM) to call me

1330 Wrecker is out of being stuck making slow progress.

1500 Others off S/H.

Location _____ Date _____

Project / Client _____

APPENDIX A.2

Field Sampling Logbook #2

- **Drilling Logbook #1**

Location No. Billerica MA Date 1/16/06

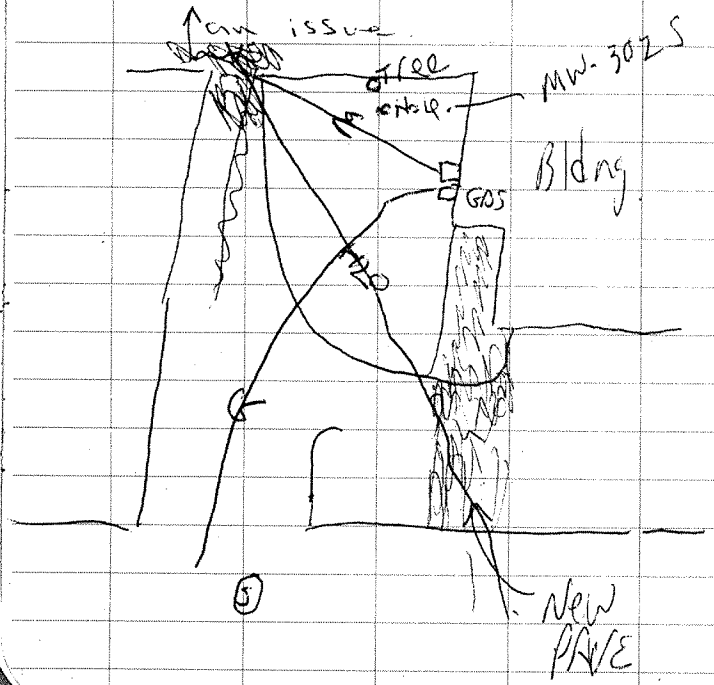
Project / Client INP/EPA/MEJBAD

1130 At MW-302S

Sunny Temp mid 20's f

Wind 10-15 MPH

NOTE; Power line, encased in concrete, located in area of well. Given locations - should not be an issue.



Location _____ Date 1/16/06

Project / Client _____

R = Recovery SpH = Spoon Head (ppm) Hdsp = Headspace

2" Spn = 140 # or 3" Spn 300 #

MW-302S

0-2 4/8/9/9 R=1.3 SpH=0 Hdsp=8.5

0.0-0.1 Topsoil, grass

0.1-1.1 Yel-br F-MS loose, dry

1.1-1.3 black f-ms tr cs/pebble, no odor

1.3-2.0 void Loose, sl. moist

2-4 6/8/11/7 R=1.1 SpH=0 Hdsp=0.3

2.0-2.5 Bl, CS+Gr, no odor/sheen loose, wet. Appearance of chipped rock pcs.

2.5-2.8 Yel-br FS, some Silt, sl. firm, wet.

2.8-3.1 yel-br/NAT MS, loose, wet.

3.1-4.0 void

4-6 1/1/2/7 R=1.7 SpH=0 Hdsp=3.1

4-5.3 Dk br Si. Sdy FS, lit. to mcs and gr tr roots sl. firm (cohesive) wet.

5.3-5.7 yel-br/NAT MS lit. cs, tr gr wet, loose.

5.7-6.0 void

Location _____ Date 1/16/06

Project / Client _____

MW-302S (CONT)

3" SP
6-8 11/10/11/11 R=1.4 SpH=0 Hdsp=3.8

~~6-6.9 or-br-br f-ms~~

6-6.3 br-gr f-ms, lit-tr cs, loose, wet

6.3-6.9 or-br-br f-ms

6.9-7.4 yel-br/nat ms, lit fs, triangular grav. loose, wet

7.4-8.0 void

2" SP
8-10 3/4/6/11 R=1 SpH=0 Hdsp=5.2

8-9 br-gr ms, tr gr loose wet

9-10 void

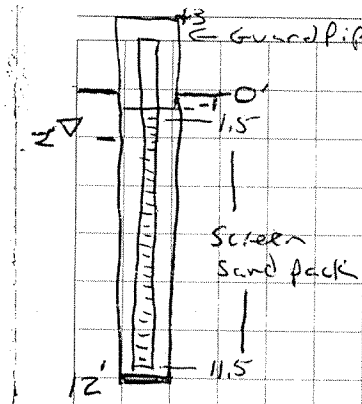
3" SP
10-12 4/6/9/7 R=1.5 SpH=0 Hdsp=7.6

10-11.5 ms, tr fs, tr gr, loose, wet. yel-br/NAT

11.5-12 void

Location _____ Date 1/16/06

Project / Client _____



Screen 1.5 = 11.5 bgs

SAND Pack 1.0 - 12.0 bgs

Guard Pipe +1.0 bgs - 2.0 bgs

12:30 Drillers off to trailer for drum lunch.

1315 Drillers back.

1350 MW-302S SAMPLE 6-8 ft

1430 well installed guard pipe will have to wait. needs to be cut back. from 5 ft to 3 ft

1436 - NOTE:
Sand Pack MS: #1 Holliston from SLATERSVILLE, RI

Location _____ Date 1/16/06

Project / Client _____

MW3035

0.5-2 9/23/18/15 R=1.0 to 0.5 Asphalt SPH=0.9 Hd Sp=0.1

0-0.5 Asphalt

0.5-1.5 gr-br fs tr ms & Gr, loose dry

1.5-2.5 VOID

2.5-4.5 1/18/18/14 R=1.0 Sp 0 Hd sp 0.7

2.5-2.8 Black, no odor, cs tr gr-vel more lime rock chips loose wet/SAT

2.8-3.1 Dk Br fs sl firm wet

3.1-3.5 green br fs, sm silt sl. firm wet

3.5-4.5 VOID WT ~2.5

1530: End of day @4.5 ft Water is ~2.5 feet. will check in am for water table.

Will need to use flush mount box.

Location No Billericay MA Date 1/17/06

Project / Client Iron Horse Park / EPA

M&E: BAD

4.5-6.5 ~~8~~ 7 WT. hmm /3/1 R=1.4 SPH=0 Hd sp=

3" spoon - Weight of hammer for 1 foot. very soft

4.5-5.9 br-bl vfs-Silt slightly firm SAT/wet, no odors trace roots

5.9-6.5 VOID

6.5-8.5 1/2/5/10 R=2 sp=0 Hd sp=0.8

3" spoon

6.5-7.1 SA 4.5-5.9 very slick/organic even more saturated

7.1-8.0 PEAT brown, ~~vegetative~~

8.0-8.5 Yel. br MS, tr root, moist

was aiming to sample this zone, but mostly marsh/peat deposit. will take from 8 ft-10 ft.

8.5-10.0 3/8/18 (Adit only) R=1.5' sp=0.1 Hd=1.8

3" sp

8.5-~~9.5~~ 9.5 Yel br MS, lit fs, tr CS, loose wet.

9.5-10 gr/Nat FS, loose wet

Sample 8-10 ft 0935 / 1000 FD

MW-3035:8-10ft / MW-3035:CS

& climbed 26 (moisture)

Location _____ Date 1/17/06

Project / Client _____

ME-3035 (CONT)

10-12 FG WI / 2 / 3 / 4 R=1.1 SP=0 TD-25.1

10-11.0 SA 8.5-9.5

11.0-11.1 SA 9.5-10

Rose faster than previous dropped faster too.

We Construction SA MW-302S

Screen 1.5-11.5

Sand 0.5-12

Final 3 head space had a lot of MOISTURE effect where meter rose slow dropped slowly.

Weather

SUNNY - T = high 20's f, faint breeze. No clouds, but slight haze at edges

10 10 hrs

Construction of MW-303S Complete. Cleaning up site. FORGOT ROAD BOX so will have to complete tomorrow.

Location _____ Date 1/17/06

Project / Client _____

1115 - Move into Decon

1215 - FINISH DECON

1240 - Finish Lunch of to collect drum & drill rig to move to MW-306S.

1326 Begin drilling @ MW-306S

weather:

Sunny, 35% clouds T~mid 30's f.

Wind 3-5 mph.

1415 Passive monitoring

PID = 0.2-0.5 ppm - drill rig exhaust.

CGI - HC/LEL% = 3

O_2% = 20.9

H_2S ppm = 0

CO ppm = 0

CGI Has remained consistent throughout drilling. ONLY %LEL has varied 1-3 ppm likely due to rig.

Location _____ Date 1/17/06

Project / Client _____

MW-3065

Likely moisture same for all

0-2 8/11/8/7 R=1.2 Sp=0 Hd=0.7
2" spoon

0-0.7 or-br/nat MS, little GS, loose dry roots top
0.7-0.9 Gravel, FS
0.9-1.2 Tan, FS
1.2-2.0 void — All sand well sorted fill

2-4 10/9/9/11 R=1.7 Sp=0 Hd=0.8
2" spoon

2-3.7 TAN, FS, loose, dry, fill
3.7-4.0 void well sorted.

4-6 6/7/10/15 R=1.5 Sp=0 Hd=0.6
2" spoon

4-5.5 TAN, FS, saturated showing iron stained layers. well sorted
5.5-6.0 void WT = 4.0 ft

6-8 4/10/11/13 R=1.7 Sp=0 Hd=0.9

6-7 TAN SA 4.0-5.5
7-7.7 colorless-grey/NAT FS, loose, wet, washed out version of above. well sorted.

Location _____ Date 1/17/06 11

Project / Client _____

8-10 / / / R Sp= Hd=

1400 hrs Attempted Spoon - but 6 Ft & running sands in augers. When Spoon pulled a fine black sand fell out Top of Spoon. Changing over to casing & drive & wash to complete hole to 14 Ft.

AUGER w/ sample	8 Ft
D/W no sample	8 Ft
D/W w/ sample	6 Ft

1430: Due to use of brown water (Cl-) and its possible impact on TOC, 6-8 Ft was sampled rather than 8-10 or 10-12. For DAS firing Grain Size was also collected. Since soils have been consistent from ~17 bgs if soils show remarkable change in next two spoons grain size sample may be changed, otherwise not.

Sample Time 1400, #: MW-3065:6-8Ft

Cont. → →

Location _____ Date 1/17/06

Project / Client _____

MW-306S (Cont.)

3" SS 8-10 8/9/12/11 R=13 Sp=0 Hd=0

8.0-8.3 black FS loose wet } TR silt

8.3-9.3 Gr FS coarse wet }

2 pieces gravel on top of sample granitic rock, yellowish in color

Septic type odor faint

10-12 4/7/9/17 R=1.5 Sp=0 Hd=0

2" Spoon

10-10.4 Colorless-grey/wet FS loose wet, slight odor septic

10.4-11.5 colorless-grey/wet MS, TR GS and pebble, loose, wet, faint Septic odor.

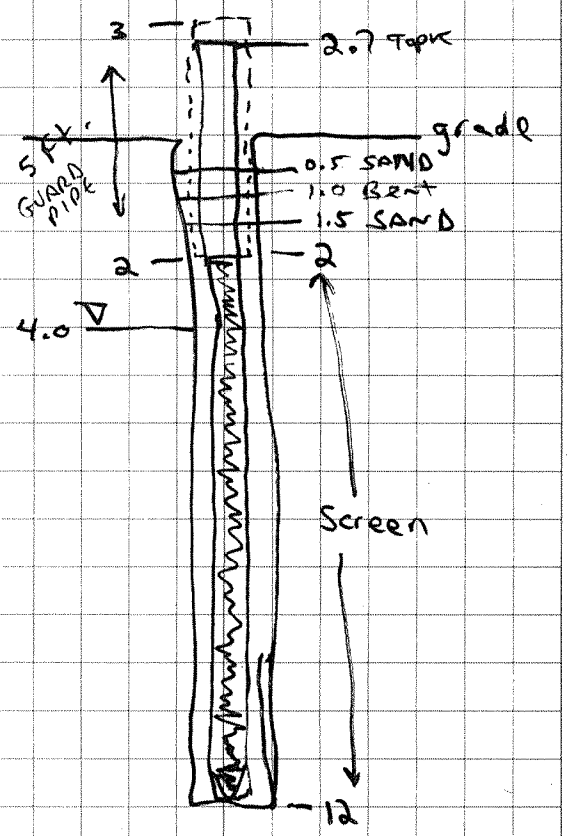
11.5-12 void.

Stopped work after last sample. Plan on building well tomorrow AM then moving to MW-305 depleft.

Location _____ Date 1/18/06

Project / Client MW-306S well Const.

MW-306S well Const.



Location No. BILLERICA, MA Date 1/18/06

Project / Client IHP / EPA

MSE: BAD

0630 ARV: weather overcast
mid 30's F. RAINY.
Cal 2211 0=0 ppm 100=102 ppm
0715 Drillers on site. filling tanks
1030 Level ~~C~~ ON
1145 LEVEL C OFF
During Level C were 10-15 min
work stopped C off during
that period.
1200 Casing down to 9 ft
Drillers take lunch break
NOTE PID WENT RIGHT DOWN
Reading 45 ± 5 ppm constant.
CGI Registered nothing.
Likely high humidity
Rain starts, brief burst now
light.
SOILS MOIST All the way ~~except~~ down
from surface. No dust at
all. Some asbestos like material
encountered in upper 6 ft. MOIST.

Location Date 1/18/06

Project / Client

NS - not sampled problem w/ meter

MW-305 D^S

0-2 2/9/17/18 R=1.7 sp. NS Hd. 28.8
2" Spoon

0-0.2 Topsoil
0.2-1.1 br FSL Loose loots dry
1.1-1.7 Var. yel-br/green br FS to
Si & pebble, Sl. dense
1.7-2.0 VOID

2-4 2/8/9/10 R=1.3
2" spoon sp=NS Hd= 9.9

2-2.3 Br FSL loose
2.3-2.5 yel-br sl dense FS/Si
2.5-2.7 ~~gr~~ white-grey friable
Asbestos?
2.7-3.3 yel br/NAT ms to pebble
loose dry
3.3-4.0 VOID

4-6 4/9/10/11 R=1.4
2" Spoon sp=NS Hd= 14.6

4-4.5 mix M-S and Si-Cl asbestons
4.5-5.3 light gr fibrous ~~like~~ (small hairs)
Si-Cl type material.

Location _____ Date 1/18/06

Project / Client _____

MW-305D (Cont) 5 a'd well

5.3-5.4 — Nat, M-C S wet
stuff at top spoon seemed moist
possibly from drilling.
WT ~ 5.7 possibly higher.
5.4-6.1 Void

9-11 18/14/11/11 R=0.9
2" spoon SP=NS Hd=7.8

9-9.4 Nat M-C S tr pebble loose
9.4-9.9 H br/nat FS, lit-tr MS
loose
9.9-11 Void

14-16 14/22/35/26 R=1
2" spoon SP=NS Hd=2.6

14-14.6 Tan FS tr Si - Loose
14.6-14.8 TAN/NAT FS+CS
14.8-15.0 H. tan FS silt.
compact
15-16 Void

Location _____ Date 1/18/06

Project / Client _____

19-21 17/14/44/26 R=0.4
3" spoon SP=NS Hd=7.2

19-19.4: Bucked up granite
Like rock salt sm.
larger pieces
19.4-21 Void

1350 Drillers calling it
for day. Say road
makes cat head dangerous
1500 PID FAILED AM
CAL Xtra PID # 8705
CAL 0=0 ppm 100=99.7 ppm
Hd spaced todays samples
Response was jumpy but quick
peaked and dropped, rapidly
after removing probe from jar
appeared to be actual, but
jars moist. Jar of granite took a
hit. Jars sampled in the trailer.

Location No. Billerica, MA Date 1/19/06

Project / Client IHP / EPA

M&E: B. Abrahams-Dematte

MW305D (BAO) - continued

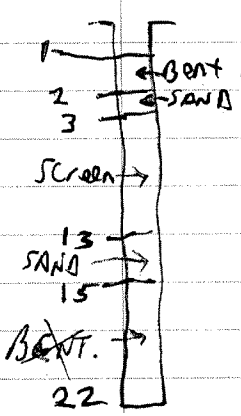
~~24-26ft / / / R=~~

~~3" spoon SP = Hd~~

24.0 - void

Drillers hit rock at 22ft. Attempted to roller-bit but shoe (drive shoe) but shoe was egged so they could not get roller bit through pipe. Going to build shallow well in this location and move over to dee deep well using new drive shoe.

Guard (Protective) pipe set 2.5 ft. in 2.5 ft out of hole.



Well caved in native materials No Bent

Location Date 1/19/06

Project / Client

MW-305 D (retry)

Will sample 9-11 ft shallow deep to follow. Will go right to sample then right to 24 ft to pick up where left off sampling in what is now 305S

~~24~~ 9-11 ft 8/9/11/8 R=0.5

3" spoon Hd sp = NS sp = NS SAMPLE

9-9.5 Natural CS + Gravel.

9.5-11 void

~~24-26 / / / R =~~ (cont. 1/20/06)

~~3" spoon SP = Hd =~~

pick up where left off

From 20-24 rig became jumpy when drilling. very gravelly possibly cobbles.

1440 Appears that bedrock is @ 22 ft in MW-305D. Unlikely large boulders. Call quits for day gear up tomorrow to rock core 20 ft for confirmation

Location _____ Date 1/19/06

Project / Client _____

Summary 1/19/06

Rig 1 attempted to drill past boulder in MW-305D but were unable due to ogged (damaged) drive shoe. Decided to turn well into MW-305S but found drive shoe so damaged the PVC well could not fit. Had to pull casing the re-drive rig to get shallow well in b/c of hole collapse when casing removed. Moved to retry MW-305D at new location w/ new drive shoe. Well bottomed at 22 ft - Casing tomorrow (Fri.) To confirm bedrock. Asbestos monitoring also occured for redrill MW-305S and for MW-305D to 22 ft.

Rig 2 Never got off the ground failed to run due to head problems.

— BID —

Location _____ Date 1/19/06

Project / Client _____

1050: Attempted to drill install MW-305S but shoe (drive) was so ogged Well pipe could not go through. After pulling pipe (casing) well collapsed too fast, unable to set well. Went back to D/W to w/ new drive shoe to open hole up again. Because not enough water in Tub Geologic used decon bucket water, some of which had liquinox in it. Decon water was fresh this AM not yet used.

1130: MW-305S Complete

Rig now set up on MW-305D

Drillers off for Lunch then water. Restart 1300 -

Asbestos monitor Stephanie off Site - 11 AM be back for 1300 start.

1300 - Everyone Back.

Location No. Billerica, MA Date 1/20/06

Project / Client IHP / EPA

0730
Weather Clear, few clouds looks to be sunny day w/ highes in the 50's F.
Wind 0-3 mph - Temp currently ~25-30°F.
Todays Activities to include Coring @ 305D, Roadbox @ 303S, and decon/moving bomb to new location.

0837 Gearing up @ MW-305D for Rock Coring. Drove casing to 21.4 ft. likely top weathered. Comp. 22 ft

0945 Broke through boulder @ 22.8-23 feet now ~~tr~~ trying to coerce casing past boulder if it don't work then it's 5" casing

1000 Unclear if actually boulder have drilled to 24 ft and trying a 2" spoon.

Location Date 1/20/06

Project / Client

Cuttings coming up while drilling w/ rollerbit appeared to be a granular granite.

1005 120 for 1/2" no go bouncing spoon No return. Setting up to core.

Ft Bgs.	Time Elapsed
24-25	00:00 - 06:24
25-26	08:27 (~25.8 fracture)
26-27	9:09 stop (~26.3') 1030 hrs Driller (charlie)
27-28	thinks went out the other
28-29	side boulder Pulling core to run a spoon.

NOTE: Yesterday noted greasy water dripping into drill tub (possibly down casing). Greasy water from drill head, probably the result of previous day heavy downpours. Try to mitigate best possible.

NOTE: Charlie taken over Matt's rig Matt assisting. Been missing for last 45 min. Went for Water

Location _____ Date 1/20/06

Project / Client _____

26-29: 3 ft rollerbit | 29-34 Core

	22-24'	24-26	MW
Score Card	2' roller bit	2' core	305

1050 Clarified w/ Charlie aim of well is not rock, but till. rock was only b/c thought initially bedrock high. Going to pound casing through boulder. If driller is correct, there would have been a 2' thick boulder sitting on a 1.3' thick boulder. NOTE Core recovered from 24-26 was 1.3 ft. Diorite

1145: 26-28 120 for 5" R=0.2
26-26.2 br/NAT m-cs, lit-tr FS, tr gravel (possible more piece recovered just fit spoon

Going Wait to 29-30.

1250 Driller reported that rollerbit from 26-28 ft went easily but slowed approaching 29 ft. Thinks it is finally bedrock, MSE geologist called bedrock 22 ft weathered to ~24½.

Location _____ Date 1/20/06

Project / Client _____

So currently @ 29 ft. Going To Core to confirm if bedrock.

Depth	TIME Elapse	Comment
29-30	00:00 - 07:00	
30-31	12:19 stop 14:00 start 17:05 end	Add drill rod 30.8 [illegible]
31-32	22:22 stop 40:25 start 42:22 end	31.5 seen to be losing sm. water stopped for water
32-33	48:00	
33-34	52:22	Loosing water slowly last couple ft

NOTE: Earlier in the day Charlie accidently discharged a Type ABC fire extinguisher on himself.

1400 - Recovered 5' of 5' Competent Core (29-34 ft).
- Hor. fracture @ 1.6 ft (30.6 ft) surface slightly weathered likely coincides w/ stop to add more drill stem. possible some flow
- At 2.6 (31.6 ft) high ∡ fracture showing weathering & iron staining.
- Highly fractured zone continues 31.6-32.8 ft Another Highangle ∡ fracture in this zone planes of fracture cross obliquely ~40°
- At 33.5 ft to 34 ft vertical fracture.

Location _____ Date 1/20/06

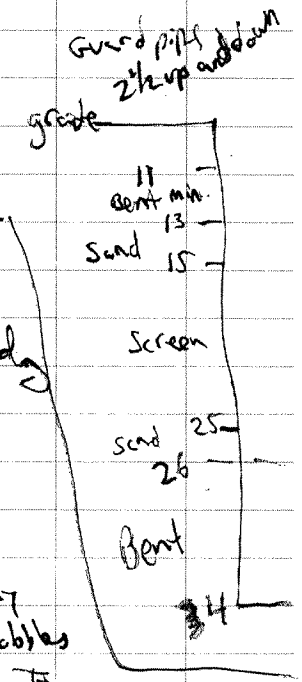
Project / Client _____

1445: Building well in MW-305D

MW-305D

Total Depth 34ft

Screened Interval 15-25ft



Summary 1/20/06

Process slow but steady

ADVANCED TOTAL

22'-34' of which

7' Coring

5' roller bit

From 22' to 24.5' may be bedrock or boulder/cobbles

By 26 feet Scem to definitely be in bedrock.

Well building 25 ft well 9ft fill.

BAD

Location N. Billerica, MA Date 1/23/06

Project / Client IHP / EPA

Heavy Snow:

Packing samples to take to Chelmsford EPA. Then plan well development. Kevin going to MW-304 today.

1000 Left site to go to OEME in Chelmsford to drop samples.

1145 Returned from OEME, prep to develop wells.

1215 - MW-303S PID=0.6ppm DTW=2.58ft bgs - No NAPL-cable NAPL-on probe

PUMPED 50 gallons in 18min. Well did not go dry. Coarse Sand pack lets a lot of silt through but well was clearing even at high flow rate (min 5 gal max 60 gal.). Stopped flow to see what recharge is like. Will pump another 15-20 gals then take some field [illegible]

Location _____ Date 1/23/06

Project / Client _____

Develop MW-303S CONT

parameters w/o surging well conditions.

Initially purge water very black then various shades of brown to tan. H_2S odor. black & Tan Sed fs-si in bucket flow rate 4 gpm measured in one bucket fill.

30 GALS more Turb = 62.5 NTU

10 more Gals Cond = 288 µs T = 10.8C pH = 5.50

10 " " 286 10.9 5.21

FINAL TURB = 9.32

24 mins later ended second purge 96 gals est. + 72 Est based on time = 168 gals purged max H_2S odor along with petrol. odor. Final water in bucket looked like light colored oil but w/no sheen.

1840 mobe back to trailer to clean pump.

Location _____ Date 1/23/06

Project / Client _____

1425 MW-302S well devel.

PID = 1.3 ppm DTW = 4.39 TOPVC 4.43 TOC

DTW bgs 2.32'

Purge fill 55 gal drum in 12 mins to 50 gals full.

After ~70 Gal Turb > 1000 NTU

300 NTU

T = 10.0 °C Cond = 292 µs

pH = 6.25 Turb = 10 NTU

purge Time 2 mins = 100 gals

1515 In transferring purge water between drums it was noted only 36 gals purged in 12 mins so ~3 gpm ave so 75-100 gals purged. at MW-302S.

MW303S purged total 42 min ≈ 126-168 gallons purged.

MW302S was similar in odor but appeared to be clearer in the end.

Location No. Billerica, MA Date 1/24/06

Project / Client IHP / EPA

Well development day
cal. checks on water Q meters.
TURB LaMotte 2020
1.0 NTU reads 1.00 NTU
10.0 NTU reads 9.8 NTU
SN: 4815-5203
Hanna Multimeter HI 991300
SN 233409 pH / COND / T / TDS not recorded
4.0 pH reads 4.02 @ 21.7°C
7.0 pH reads ~~6.3~~ 7.00 @ 21.7°C ~~@ 12.4°C~~
1413 µS reads 1405 @ 15.9
SAMPLE STANDARDS NOT large enough to actually use. No standards on sight. Found some old standards

MW-306S
Well development
DTW = 6.93 Top vc 7.52 TOC ★ Casing not yet fixed
DTW = 4.39 bgs PID = 0
25 gals + after 8 min
1st 5 gals-in 1 m 25 s

Location Date 1/24/06

Project / Client

Purge rate varies btw 3-4 gpm depending on surging or not surging.
MW-306 Purge water had initial shot dark sed but cleared rapidly to yellow ting and after 10 mins clear. Has musty / petrolly odor.

	15 min purge	20 min purge
pH (unitless)	= 6.71	7.03
COND (µS)	= 329	332
T (°C)	= 10.0 °C	9.4
Turbidity (NTU)	= 1.3	0.70
TDS	165 ppm	166 ppm

EST GAS purged at AVE 3.5 gpm = 77 gals
Time purged 22 MINUTES

Well purged w/o going dry. Drawdown not checked
well labeled.

Location _____ Date 1/24/06

Project / Client _____

Todate mw-302, 303, & 306 S's have all seemed pretty murky. Heading back to trailer to give special decon before developing wells mw-305s/D.

MW-305S (casing not yet fixed)

PID = 0.3

DTW = 8.24 TOPVC 5.64' bgs

Initial purging dark reddish brown, a lot of sed. fs/si br in bucket. Cleared after ~13 mins surging

WQ	17 MINS	23 MINS
pH (unitless)	7.64	7.64
COND (µS)	561	544
Temp (°C)	7.2	7.3
TDS (ppm)	279	272
TURB (NTU)	14	7.4

Purged 28 MIN @ ~3.5 gpm
≈ 98 gals

Location _____ Date 1/24/06 33

Project / Client _____

MW-305D (casing not yet fixed)

PID = 0.4

DTW = 7.85' TOPVC 5.35' bgs

Purging started off in similar fashion to 305S but silt never as dark as 305's. fs/si also seemed to clear faster. Purged & surged entire column over 10 minutes, now pumping out sections of screen 5 mins per 2 ft.

WQ	50 MINS	60 MINS
pH (unitless)	7.63	7.63
Cond (µS)	544	560
Temp (°C)	8.9	9.7
TDS (ppm)	273	279
TURB (NTU)	21	8.7

purged 63 MIN @ ~3.5 gpm
≈ 220 gallons

Location _____ Date 1/24/06

Project / Client _____

1430 MW'S 302S, 303S, 305S, 305D and 306S have all been developed Now looking at 304'S

MW-304S

PID = 0

DTW = 5.42' TOPVC 5.68' TOC
= 3.24' bgs

Purge water various shades of brown and red brown and or-br
Took some time to clear silt ~15 MINS before purge/surge water started clearing once stop surge water cleared quickly

WQ	20 MIN	25 MIN
pH	7.63	7.63
Cond NS	73	73
T °C	9.1	9.1
TDS ppm	38	36
TURB NTU	3.28	1.42

Location _____ Date 1/24/06

Project / Client _____

MW-304S Purged 27 mins ~ 95 gals

Turbidity eventually cleared, but not entirely w/ surging

MW 304 D/B to be developed tomorrow.

BAD

Location No Billerica, MA Date 1/25/06

Project / Client IHP / EPA

Prepping to move to MW-307 wells. Decon first. ~~Now start today.~~

1000 Packing down site w/ bomb. Create level playing ground and hopefully hard pack.

Crew truck already stuck ½ way in. Too much weight w/ water. May have to run water line over landfill.

1330 After reaching 16ft, driller emptied mud tub, well of water and sediments. Dummed the waste. This was to remove ACM from system before drilling deeper.

Location Date 1/25/06

Project / Client

MW-307B

FILL 0-2 2/2/4/5 R=1.2
2" spoon SP=0 Hd=0

0.0-0.3 Brown org. matter
0.3-1.2 Brown FS, l.d.-to si, loose Dry
1.2-2.0 void

FILL 2-4 3/5/6/4 R=1.7
2" spoon SP=Ns (driller left open) Hd=0

2-2.1 fall in
2.1-3.4 Tan FS, loose, dry
2.3-2.7 color is browner w/ Tr silt.
3.4-3.7 bluish-grey si-cl w/ fibers (ACM).

FILL 4-6 3/2/2/3 R=1.0
3" spoon. SP=Ns Hd=0

4-4.4 Tan FS loose
4.4-5.0 black @ top grey after asbestos, head spoon plastic sheeting and board like ACM.

NOTE SAND seems wet but ACM impermeable WT Hard to distinguish.

Location _____ Date 1/25/06

Project / Client _____

WT ~ 6 1/2

MW-307B (CONT.)

6-8 4/2/1/2 R=1.3

3" Spoon SP=NS Hd = 9.1

6-6.6 Dk. Grey, Si-Cl txture, Fibrous (Acm?) SATURATED

6.6-7.0 Lt Grey Si-Cl " " Moist.

7-7.3 Peat 7.3-8.0 VOID

8-10 1/1/2/6 R=1.5

2" Spoon SP=NS Hd = 0.6

8-8.9 PEAT (dk br-bl)

8.9-9.5 lead br FS+Si tr Cl. wet, loose.

9.5-10.0 VOID

14-16 7/8/8/9 R= 0.6

2" Sp. Sp=NS Hd =

14-14.6 TAN/NAT FS, tr MS, wet loose.

14.6-16 VOID

19-21 17/18/24/36 R=1.1

2" Spoon Sp=NS Hd =

19-20.1 Grey FS tr Si Firm to compact

At ~19.5' iron stain layers appear every 0.2' to bottom

20.1-21 VOID

Location No. Billerica, MA Date 1/26/06

Project / Client IHP / EPA

MW-307B (CONT...)

24-26 ft / / / Rec=

2" Spoon, Headspace=

24.0-

B. Abrahams-Demotte off-site today. Kevin Harten Record drilling on log sheets rather than in this book -

- Reports a couple(2) boulders on way down about 1½ ft in size. Reached Bedrock @ 56 ft.

From drilling 1/25 and 1/26 it appears the best locations for TOC/GSA will be

12-16 ft Shallow

43-44 ft Deep (Till ~49 48-)

Shallow well 3-13 NOT ILL 46 ft

Deep well 38-48

Bedrock to be drilled. 62-82

Location No. Billerica Date 1/27/06

Project / Client IHP / EPA

- Initial trouble w/ water access now relegated to gardenhose source
- Weather: Sunny 10% clouds wind ~5mph east. T ~ 30°F T's to go to 35-40 today.
- Set up @ 307B is that setting 4" casing @ well in bent and then VOL claying it into bedrock. Rock core to follow.

0900: 4" clayed in, hole cleaned. Tooling up for rock coring.

Rock Cores

Coarse grain granite w/ citrine qtz. appearance ~~some~~ 65.5 ft green mineralization epidote. Rock type consistent 59-69, 59-80/82 bottom ample feet seamed finer grain citrine appearance of qtz decreased w/ depth more iron stained looking zones w/ muscovite bottom 10 ft. Fractures predominantly low - mod ∡'s though some vertical fractures too.

Location Date 1/27/06

Project / Client

MW-307B Rock Core

59 - 60 00:00 - 06:45
60 - 61 11:40 - 6 and 0.7ft : Fin 13:57
61 - 62 20:44
62 - 63 27.49
63 - 64 33:25 @ ~0.6 pick set up/down.

Recovered 3.8 ft (1.2 ft bent top core bottom rubbled probably lost last 1ft

FRACTURES 59.2/60.0/60.4/61.0/61.3 62.0/62.3 - 62.8 heavily fractured.

64 - 65 00:00 - 03:45
65 - 66 08:56 Stop to add rod 0.8'
66 - 67 13:00
67 - 68 16:20 Not much water loss
68 - 69 20:40

Picked up - 0.5 ft from from previous run. Most fractures large and heavily weathered. Fractures at: 64.6, 65.5, 66.1, 67.8, 68.5, 69.0 ft

Recovery 5.5 (5 ft from 1st core)

Not a lot No loss

Location _____ Date 1/27/06

Project / Client _____

Rock Core MW307B cont.

69-70 0- 2:45 (x2?) (missed first 0.5 ft)

70-71 4:22 Stopped add rod

(Est. + 00:25) missed last 0.3

71-72 04:22 - 08:05

72-73 12:43

73-74 17:30 Recovery 4.6

Rock Type Granite & coarse grain Same

fracture (Break) at 73' shows muscovite mica

FRACTURE: 69.2, 69.6, 70.5 (large), 71.3, 72.9 (break/yes weathering)

74-75 MISSED on Phone w/ Dianne.

75-76 00:00 → Stopped add rod

76-77 → missed 2 ft in while

Lagging last 5 ft.

77-78 05:10 - 11:44

78-79 11:44 - 17:48

Approx Total Time 30 mins / Rec. 5 ft

Rock Type: Same (less citrix qtz)

FRACTURES: 75.5, 75.9 (? break), 76.6, 76.8 (break)

78.0 (sheer zone, large fracture, some linear feature)

78.4, 79.0

Location _____ Date 1/27/06

Project / Client _____

Rock Core MW307B cont.

79-80 EST 4 min.

80-81 0:30 - 05:15

81-82 09:41

82-83 14:10

83-84 18:55

EST TIME 22:25 REC = 5 ft

FRACTURES 79.2, 79.5, 80.1 (large), 80.7

thru 82.1 (vert. Fract.), 82.7, 83.1 - 83.8 (vert)

Rock Type: Same, grain size larger, mica some [illegible] 84

1200 Cored to 84 ft and flushed well of silty water before pulling last core. Called rock core 5 ft short of 30 ft scoped. Did so to save time (only one drill rig though company (MX) called for 2), and 15-20 ft showing few lower fracture density.

1300 Last core increase fractures at coarse.

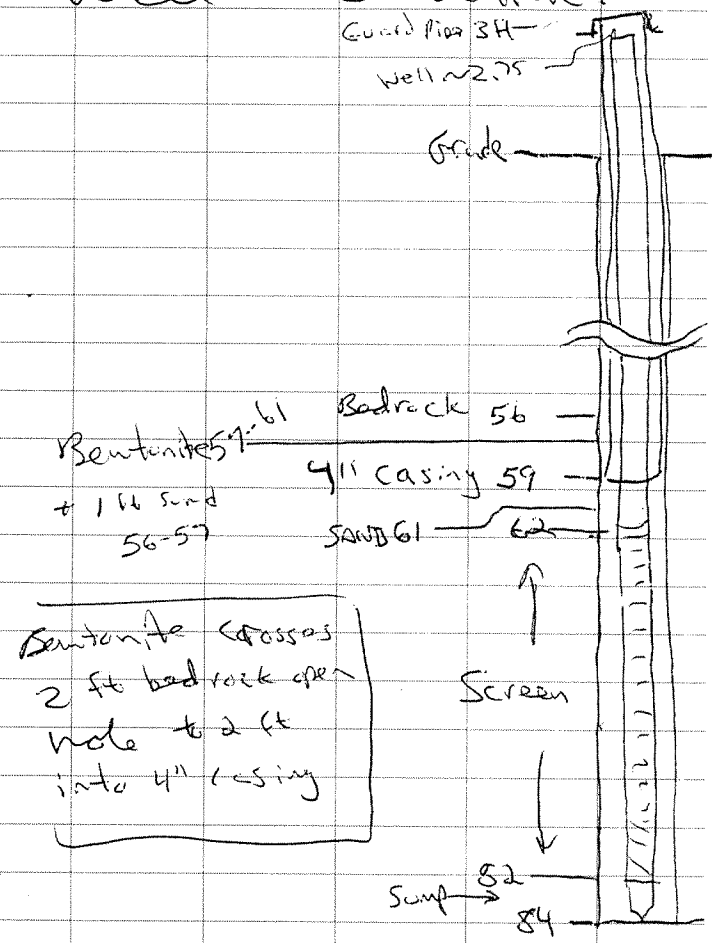
1315 Well built mostly.

Rock here different than other areas of site (granite vs. diorite, grain size)

Location _____ Date 1/27/06

Project / Client _____

MW-307B
Well Construction



Bentonite crosses 2 ft bedrock open hole to 2 ft into 4" casing

Location _____ Date 1/27/06

Project / Client _____

Moved to next 307 well
Rounding casing to 14 ft.
Monday will wash out and collect shallow sample.

Driller work sheets were good except decon time was a little high.

BAD

Location No. Billerica, MA Date 1/30/06

Project / Client IHP / EPA

NOTES

307D : Screen 38-48 ft Sample 42-44 ft

307S : Screen 3~~4~~ 13-~~14~~ ft Sample 14-16 ft.

Drilling stalled AM in order to run water line to drill rig.

1000 Measured depth to water in 307D = 4 ft. Change shallow hole to 3 to 13 ft

Drillers still mucking around w/ H_2O

1021 finally underway

Taking Sample:

MW-307S: 14-16 ft 1030

3" spoon blows 6/5/6/7 R=1.5

TAN FS, well sorted

Marshy odor to sample.

Moving onto 44 ft for deep

12-1230 hrs Drillers on lunch

1300 MW-307D: 44-46 ft

12/9/8/7 R = 0.2

CS + Gr Not sufficient

try again deeper

SAMPLE

Location Date 1/30/06

Project / Client

1315 48-50 ft

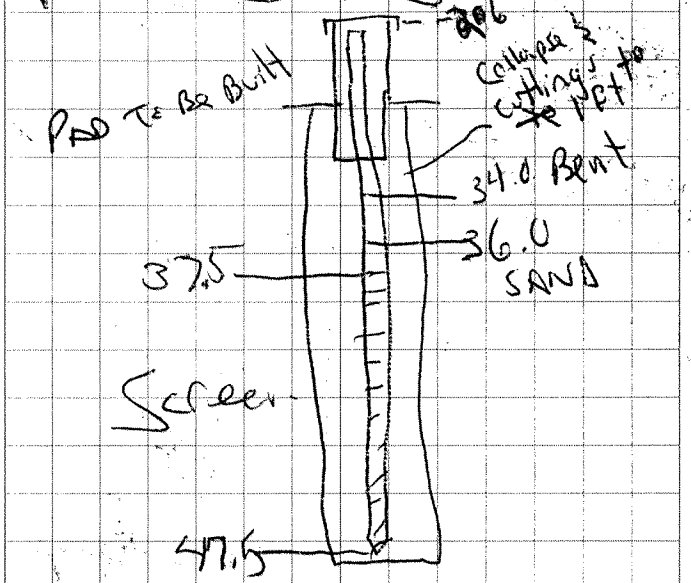
MW-307D: 48-50 ft

10/9/32/16 R=0.7

~0.4 CS/gr NAT

~0.3 TFS

MW-307D Well



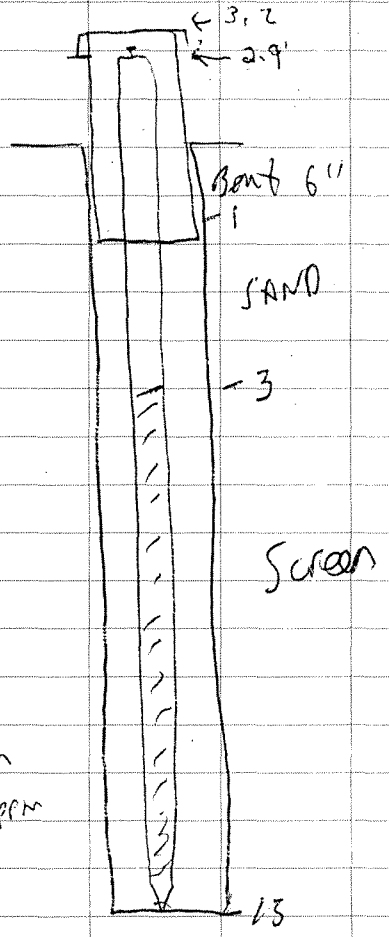
Well complete - set up on 307S

Location No. Billerica Date 1/31/06

Project / Client IHP / EPA

MW-307S

Installation:



2245
PID 0730 hrs
CAL - 0=0.1 ppm
100 = 99.7 ppm

Location Date 1/31/06

Project / Client

MW-308B

0-2 ft 2/4/6/7 R=1.8
2" Spoon SP=0 HD= 0.1

0-0.4 TH OB FSL and organics
0.4-0.9 Tan FS, loose, dry, trace roots, silt
0.9-1.4 Br FS-silt slightly compact dry
1.4-1.6 Tan FS 1.4-tr si dry sl. compact
1.6-1.7 Wet tan FS loose dry
1.7-1.8 ACM 1.8-2.0 void

~~3~~ 4 6/17/7/8 R= 1.1
2" Spoon SP=0 HD=0.4

2-3.1 Grey sild Acm
3.1-4.0 void

4-6 ft 1/2/2/3 R=0.5
2" Spoon SP=0 HD= 1.1

4-4.5 SA 2-3.1 wet
4.5-6 void

WT=4.5

Cont →

Location _____ Date 1/31/06

Project / Client _____

MW-308B (cont)

9-11 Ft 65/2/2/2 R=0.4

2" spoon Sp=NS Hd=4.7

While driving 5" casing to 9-11 interval there was much bouncing shaking entire area.

9.0-9.1 loose watery collection of wood splinters, metal bits black plastic bag.

9.1-9.4 Saturate peat.

9.4-11 VOID

Spoon bounced a lot at first. Driving casing probably pushed the offending material down. Next set 5" casing seems less troubled.

14-16 ft 32/13/13/10 R=0.6

3" spoon Sp=NS Hd=6.2

SAMPLE DEPTH 14-16 TIME 1400

ΔT ~12 ft density increased Driller noted. Might Δ material

Location _____ Date 1/31/06

Project / Client _____

While drilling to 14 ft for sample, a lot of what looked like plastic bag came up - Taking a sample of wash water and material - PID hit 73.6 ppm attempting spoon.

14-14.6 green-gray FS Little MS wet loose piles of Metal chips on top and some mixed in to sand possibly due to driving spoon out top. metal flakes are from button bit trying to drill through some metal object wh/ has been pushed down from driving casing. Hopefully will get past.

onto 19-21 feet

SAMPLE NOT TAKEN 14-16 ft.

Location _____ Date 1/31/06

Project / Client _____

MW-308B CONT

19-21 ft 30/30/40/40 (14/35/35/23) Driller R = 0 cont

2" spoon Sp = NS Hd = NS

Assuming post pile junk, will Sample this interval.

NO Recovery

No Sample taken From Shallow zone

Finished @ 20 ft for the day.

Notes for Kevin if field Book.

BAD

Location _____ Date 2/1/06

Project / Client _____

Kevin Harten (M&E) Continued logs of MW-308B on paper from 20 ft to bedrock @ 46 ft. He will also log coring of bedrock on log sheets for 2/2/06

BAD

Location No. Billerica, MA Date 2/2/06

Project / Client INP. / EPA

0700 Weather low
30's F no wind
mostly overcast
K. Horton (M&E) will
continue w/ MW-308B
while BAD develops 307 cluster
0745 Cal checks
Turb: Lamotte 2020 SN 4815 5203
1.0 NTU read 0.95 NTU
10.0 NTU read 9.7 NTU
HANNA HI 991300 pH/EC/TDS/TSUP
SN: 233409
pH 4 reads 4.29 @ 17.1° Cond µS 100.9
pH 7 " 7.30 @ 17.3 reads 117 µS
pH 10 " 10.40 @ 19.1 @ 17.1°
(All standards used for Hanna were old
and possibly concentrated due to evaporation)
0915 Scott: Geologic shows up to
develop wells
0935 FINALLY COMES OVER TO Develop
Scott Had Some drill rig stuff to do
first.

Location Date 2/2/06

Project / Client
WELL Development

MW-307S PID = 0.5 ppm
PVC 2.78' above grade casing NOT FIXED
DTW = 8.59 To PVC
DTW = 5.81 bgs
Initial purge only slightly silty
cleared quickly but also draws
down. Depth to water deeper
than expected. Ft water before
pumping 7.2 ft but dropped
to ~1.5-2 ft after starting pump.

GW Q	10 MIN	15 MIN
TURB (NTU)	1.2	2.7
pH	6.44	5.94
Cond (µS)	500	598
Temp (°C)	9.9	10.0
TDS (ppm)	252	303

Non surge flow rate 5 gal / 1 m 50 s
Pump now kicks out at 0.1 ft. Well
barely keeping pace w/ pumping
OILY ODOR AND SHEEN NOTICEABLE
PURGE TIME 20 min ~60 gals

Location _____ Date 2/2/06

Project / Client _____

MW-307D PID=0

PVC = 2.32 ft AGS — Casing

DTW = 8.17 ft To PVC — Not

DTW = 5.85 ft Bgs. — fixed

2 m 40 s per 5 gals w/Surging

2 " 28 " " " " w/o "

DTW after start pumping 8.80 after 16 min and dropping

WQ	Still surging 12 min	34	50	120
TURB (NTU)	>1000	>1000	240	2.5
pH	7.63	7.63	7.63	7.63
Cond (µS)	831	818	840	845
T (°C)	11	10.3	10.2	10.3
TDS (ppm)	414	408	420	422

Purge Time 85 mins

Approx vol purged 170 gals

DTW = 8.69 ft To PVC (drawdown)

drawdown 0.52 (see initial non-pump WL)

~2 GPM

Orig. Purg very sandy/silty. Bucket filled T/B FS. Ended Surging @ 50 min

Location _____ Date 2/2/06

Project / Client _____

MW-307B PID = 0

PVC = 2.92 ft AGS — To PVC - To C = 0.19

DTW = 8.02 ft To PVC — Casing

DTW = 5.10 ft BGS — fixed

3 m 15 s per 5 gals Surging

3 m 42 s per 5 gals Non Surging

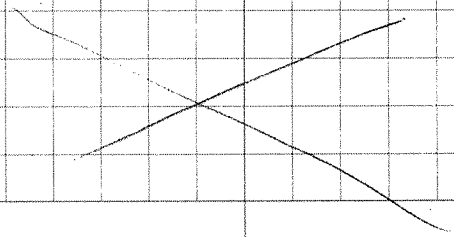
WQ	55 min	65	75	95
Turb (NTU)	80	24	20	14
pH	8.10	7.56	7.63	7.63
Cond (µS)	229	226	224	218
T (°C)	10.3	10.5	10.5	10.5
TDS (ppm)	116	113	112.	109

PURGED 1 hr 45 min (105 min)

approx. 160 GALS

Correction 1 hr 50 min (110 min)

DTW pumping 40.98 To PVC



Location _____ Date 2/2/06

Project / Client _____

MW-308B Develop

Well just completed so water levels at start not necessarily ACCURATE

PVC = ~~26.65~~ ft ags (casing height set.)

DTW = 6.45 ft TOPVC

DTW = 3.79 ft bgs (0.17 pvc TOP-casing)

2m 30s / 5 gals Flow Rate

Initial purge light milky white

pump ~3 ft above of bottom of well - 70' ~~Tether~~ well to 72 ft

NOTE Old well guard pipe top for OW-7/8 found in woods on stump. Approx 30 ft from wells

Purge may be effervescing?

At 44 MINS WL = 20.22 TOPVC

Drawdown = 13.77 ft @ ~2gpm

pH Seems too consistent from lot

Well too? if meter is operating ok

SAMPLES for TURBIDITY ARE effervescing. Need to collect let sit a second then pour into second bottle before reading.

Location _____ Date 2/2/06

Project / Client _____

WQ 308B	(represents working pump up °casing to top WL, final reading)			
Time Ft. in Start	25 MIN	50 MIN	75	100
TURB (NTU)	100	55	160	75
pH	7.63	7.63	7.63	7.63
Conductivity (µS)	595	618	318	685
T (°C)	10.0	10.0	10.1	10.1
TDS (ppm)	296	310	325	342

At 100 minutes if after a surge and purge run from top to bottom of well. After reaching bottom of well and a few minutes rest surge pumping readings at 100 mins taken.

WQ 308B	125 MIN
Turb	32 NTU
pH	7.63
Cond	345 µS
T	10.1 °C
TDS	172 ppm

AT 108 MINS
WL 26 ft TOPVC
AT 125 MINS
WL ft TOPVC

TIME PURGED = 130 min

Approx GAL Purge = 260 GALS

Location No. Billerica, MA Date 2/3/06

Project / Client IHP / EPA

MW-308S

Purged 130 mins ~ 260 gals on 2/2/06

Set to purge today. Left for 3 hrs. When return pump stopped, battery did not hold up. So probably 1 hr maybe between 2 to 3 hrs more.

Set new battery and left running. Kevin to collect sample later and not time.

Kevin - Start time 12:13 hrs

Please note time for picked up pump and weather it was running.

3:15 Pull well & pump from well - not running (battery is dead)

Location Date

Project / Client

APPENDIX A.2

Field Sampling Logbook #3

- **Drilling Logbook #2**

Location IHD OU4 Date 1/16/06

Project / Client EPA

6:50: Arrive in Wakefield
7:25: Arrive on site,
Weather: Sunny, Cold, ± 20s
8:00: Hold H&S Mtg w/ Drillers

8:45 Calibrate Instruments, (see p. 66). Rinsate Escape w/ BAD

Drillers set up on B304B

11:05: Hydraulic problem w/ rig. Limited power. Water in Hyd tank w/ Hyd level low - Drillers go to pick up some more oil.

11:45: Resume drilling

Location Date

Project / Client

3:10: Encountered bldr @ ± 13'/2' in B304B. Did not penetrate before 16'. Convert location to shallow well B304S w/ screen (no') set @ 12.5 ft.

• Return to trailer. Unload equipt and cal Mini Rae

3:40: Return to Wakefield office

4:30: Load equipt in Wakefield.

9.5 HRS

Location IHP OU #4 Date 1/17/06

Project / Client EPA REG 1

6:45: Arrive in ~~Hotel~~ Wakefield

7:10: Arrive @ Site

Weather: Sunny, Cold, 20s

7:30: Perform Cal Check

8:00: Water level @ 3.1' below grade in MW-304S.

9:45: Add mud (CETCO GUAR GUM) to drill water - ±2' of gr/sand up inside casing at 14'.

1:05: Encounter (nested) boulders(s) @ ±22 ft in MW-304, as possible bedrock. Rolly bit to 26 ft. Will flush

Location Date

Project / Client

hole and prepare to core.

CORE BARREL: HV BARREL

RUN #1 @ MW-304

DEPTH	START	STOP	RATE
26'-	2:06	2:16	10 MIN
27'-	2:16	2:30	14 MIN
28'-29'	2:30	2:44	14 MIN

2:55: Finish coring. Rig has few mechanical problems that will be fixed tomorrow

3:30: Calibrate instruments and return to Wakefield.

[signature]

8.5 HRS

Location IHP OU4 Date 1/18

Project / Client EPA REG 1

6:50: Leave Wakefield

7:15: Arrive @ site

Weather: Mild, Rain

Calibrate instruments

7:30: Mechanic arrives on site.

9:00: Resume drilling

10:20: Change of plans (per BAD) Concerned of pH from grouting of casing. Will pull 5" casing (because top sitting too high) after setting 4" permanent casing in a few ft of bent. Chips. Will add volclay inside 5" and above pellets before lowering

Location Date

Project / Client

4" pipe.

1:00: 4" INCH BENT DOWN near bottom where sitting (5" casing hole not plumb due to bldrs) will reduce core barrel from H to N-size (NX) and ream after we ~~[illegible]~~ reach depth

1:15: Begin to pack it in. Rod swivel bolts have come unscrewed w/ only two left securing drill rods. This, and many other mechanical problems have led to slow progress and drillers frustration. Geologic to swap out rigs tomorrow morning. ~~and~~ Presently, the

Location _____ Date _____

Project / Client _____

rain is torrential, but not reason for early departure

1:30: Calibrate instruments.

2:10: Make off to site.

8 HRS

Location 1HP DU4 Date 11/9

Project / Client EPA REG 1

6:30: Pick up equipt in Wakefield.

7:20: Arrive on site.

Weather: Sunny, 70s

7:30 Cal. instruments

8:20 Swapping CME 75 in Module B-53.

9:55 Drillers unable to engage high gear on replacement rig - only low gear (1) not able to core on drill - Will need to remove this rig as well. Go check in w/ BAD

Location _____ Date _____

Project / Client _____

11:00: Will unload equipt and return to office

[signature]

Location IHP Date 1/23

Project / Client EPA Reg 1

6:50: Arrive in Wakefield Load equipt.

7:50: Arrive on site. Gates locked, but drillers entered thru rear.

Weather: Snow, 32°

8:00: Drillers get rig started - dead battery. Will load and head to Decon.

8:30: Calibrate instruments.

8:50: Drillers move drum to trailer compound (1/2 HR) and then to Decon.

Location _____ Date _____

Project / Client _____

10:20: Hole from Decon (1.5 HR)

10:55: Set back up on MW-304 Using CME 75 bombardier

R-2, 31'- (@ MW304B)

DEPTH	START	STOP	RATE
31'-	—	—	—
32'-	—	—	—
33'-	11:32	11:38	6
34-35'	11:38	11:48	10

REC = 46/48"

RQD = 33"/48"

DESCRIPTION:

LT GREY TO WHITE V. HARD SL. WX, BROKEN TO ~~MASSIVE~~ BLOCKY C-GR. GRANITE (w/ LG GR WH/PALE GRN ORTHOCLASE (?) FELDSPAR CRYSTALS, and some lg hinkled xstals), NO DISTINCT BEDDING

(COULD BE CONFUSED w/ PEGMATITE)

Location _____ Date _____

Project / Client _____

OR FRACT ANGLE, FEW STAINED FRACTS

~~35'- 12:04~~

~~36'-~~ R-3, 35'-40' (304B)

DEPTH		
35'-	12:22-	4 MIN
36'-	12:26-	6 MIN
37'-	12:32-	6 ~~12~~ MIN
38'-	12:38 ~~12:44~~	6 ~~12~~ MIN
39'-4	12:49	5 MIN

REC = 54" (PIECE REMAINS IN HOLE)

RQD = 54/60"

DESCR: GREY, V HARD, FRESH, M/C GR. GRANITE, FEW LG XSTALS OF Na+KSPAR (?) w/ HORNBLD, A SINGLE MOD ANGLE STAINED FRACT @ ~24"; OTHER FRACTS (2) ARE DBs

PALE GR TO WHITE

Location _____ Date _____

Project / Client _____

MW-304B

R-4, 40'-45'

40'	–	5 min	
41'	–	4 min	
42'	1:09 –		4 min
43'			4 min
44-45'		1:21	4 min

REC = 56"

RQD 53"/60"

DESCRIPTION: GRY, V HARD, FRESH MASSIVE, M/C-GR GRANITE (AS ABOVE) W/ (2) FRACT LOW/MOD ANGLE FOR M.O-CORE

MW-304B, R-5, 45'-49½

45'	1:31	4½ min AVG	
46			
47			
48	1:49		
49 - ~~50~~ 49.5'	1:52	2-3 min	

REC = 100%

RQD = 48/100"

Location _____ Date _____

Project / Client _____

- RECOVERED ½' OF R-4 RUN
- DESCR: GRY, HARD, SL WX, BLOCKY TO BROKEN, M/C GR GRANITE, AS ABOVE, W/ FEW MOD TO HIGH ANGLE FRACTS IN BOTTOM HALF

2:10 Begin to set MW-304B Well

2:30 Drillers move off site. Return to trailer.

3:30 Calibrate instruments

3:40 Move off site.

9/12

Location NAP 004 Date 1/24

Project / Client EPA REG 1

6:50: Arrive @ office

7:22: Arrive on site. Collect instrument.

8:00 Water level @ 3.0' in MW-304B
Depth to bottom = 49.4

9:25: Collected spoon from 14'-16' in MW-304D. Poor recovery (6"). Sent down 3" spoon, but only retrieve wash

11:40: Prepare to core in 304D @ 22½ ft. Decide to core because rotary bit not making a dent in rock and I want to screen then rock/PB interface.

* Collect TOC & grain size sample @ 19'-21' in 304D

Location _____ Date _____

Project / Client _____

MW-304D, R-1, 22.5'-25'

DEPTH	START	STOP	RATE
22½	12:45	4 MIN	
23½		↓	
24½	12:53	4 MIN	
25½ -	12:57 - 1:01	4 MIN	

R = 43"
ROD = 39"/48 x 100 %

2:00: Prepare to move from MW-304 Cluster - finished installing MW304D (10' of screen @ 25 ft). Still need to cement post pipes of 304B and 304D.

3:45: Arrive @ office

Location IHP OU4 Date 1/25

Project / Client EPA REG 1

2X30

6:30: Arrive @ office

7:00: Arrive @ site

7:30: Cal instrument

7:35: Drillers arrive on site. Start to prep. for decon

Weather: Snow, 30°

8:30. Mob to MW304 D & B for Development.

Location Date

Project / Client

WELL	DTW/TOC	DTB/TOC	STANDING WATER/VOL.	WELL DIAM
304D	3.70	29.14	25.44' / 4.1 gal	2"
304B	3.43	52.05	46.62 / 7.6 gal	2"

· PID READING @ TOC: 0.0 ppm - 304B
0.5 ppm - 304D

Location _____ Date _____

Project / Client _____

WELL	TIME	RATE	VOL	COMMENT	SP. COND
304D	9:37	5g/2.5 MIN			483
	9:50	2 GPM	26 g		179
	9:58	2 GPM	42 g		327
SURGE	10:06	2 GPM	58 g		378 190
	10:14	2 GPM	74 g		318
	10:24	2 GPM	94 g		141
SURGE	10:31	2 GPM	108g		332
		GRY BRN, SANDY, V. TURBID			
	10:38	2 GPM	122 g		256
SURGE	10:45	2 GPM	136 g		350
	10:55	2 GPM	156 g		243
		ALTERNATE SURGE & PURGE			
	11:02	→ STOP (HOSE DISCONNECT)			

Location _____ Date _____

Project / Client _____

pH	TEMP	TURB	PID
6.0	10.1°	OVER RANGE	0.0
		(GREY, SOME SAND)	
5.3	10.0	17.1	
5.8	10.5	5.76	0.0
		CLEAR	
6.2	11.2°	OVER RANGE	—
GRAY, V. TURB, SANDY		(SURGE WELL)	
5.9	10.7	200	0.0
5.7	10.3	14.2	—
5.8	10.7	OVER RANGE	
5.7	10.5	149	—
6.3	10.6°	OVERRANGE	0.0
5.9	10.5	22.9	0.0

Location _____ Date _____

Project / Client _____

	WELL	TIME	RATE	VOL	SP COND
	304D	11:04	2 gpm	170 g	—
		11:26	2 gpm	214 g	226
SURGE		11:32	2 gpm	228 g	260
		11:40	2 gpm	244	206
		11:45	2 gpm	254 g	
		→ END DEVELOPMENT WHEN SURGED			
	304B	13:06	2 gpm	—	420
		13:11	2 gpm	10 g	1017
		13:19	2 gpm	26 g	1117
		13:26	5 g/3 m		1195
		13:34	5 g/3 m (1.67 gpm)		—
		ALTERNATE SURGE & PUMP			
		13:50	5 g/3 m		900
		14:00	5 g/3 m		863
		CLEARING UP NICELY,			
		14:09	"		915
		14:15	"		1,496

Location _____ Date _____

Project / Client _____

pH	T	PID		TURB/ DESCR/ COMMT
	— ALT SURGE & PUMP			
6.3	10.9	0.0	69.0	SL. TURB
6.3	11.1	—	OVERRANGE V. TURBID	
6.3	10.9	0.0	15.8	SL. TURB
				SL TURB
WELL CONTINUES TO CLOUD & GET SANDY				
7.98	10.6	0.5 ppm	> RANGE	BRN, TURBID, FR SAND
7.4	11.6°	0.0 ppm	> RANGE	
7.4	11.9°	0.0 ppm	375	BUT MUCH LESS TURB.
7.5	11.9°	—	109.1	
—	—	—	—	
—	—	—	—	
9.5	11.3°	—	511	
7.4	10.9°	—	543	
EVEN W/ SWINGING, AS INDICATED BY TURB DATA				
7.4	11.1°	—	447	
7.4	11.5°	—	48.5	NO SURGE

Location _____ Date _____

Project / Client _____

WELL	TIME	RATE	VOL	SP COND	pH	TEMP	TURB.	PID	COMMENTS
304B	14:20	1.67 gpm		1505	7.4	11.0	19.4	0.0	NO SURGE
	14:25	1.67 gpm		1628	7.4	10.9	7.41	—	POST SURGE
	14:49	"		829	7.4	10.8	11.1	—	(WORST CASE)
	15:04	"		STOP	PUMPING		—	—	→ NO SURGE

3:30: Return to trailer.

4:00: Head off site.

Location _____ Date _____

Project / Client _____

Location IHP 004 Date 1/26

Project / Client EPA REG 1

6:30: Pedro Wakefield

6:55: Arrive on site

Weather: Partly Cloudy, 30°

7:50: water level in MW307B is 5.4 ft± below grade.

8:45: Second Crew arrives. They will complete well construct. for other wells (ie bent seals, cover, pads, sand pack,) Some of wells not complete in upper few feet.

10:50: Encounter what is likely bedrock @ 51 ft in MW307B. last spoon contained probable till (49'-50') which is sandy/gravelly (course)

Location Date

Project / Client

in this area. Cannot adequately determine top of till, although I suspect it is thick in this area.

Oops! - wrong - just a blds.

12:00 Encounter rock @ 56 ft in MW307B. Roller bit to 59' w/ 4 7/8" DIAM BIT.

1:55: Have flushed hole of drilling mud and installed 4" steel water casing.

2:30: Crew on second crew and retired to trailer. Calibrate instruments.

3:00: Leave Compound - will OK on Geologic crew.

Location IHP OU4 Date 2/1/06

Project / Client EPA REG1

6:35: Arrive @ office.

7:10: Arrive on site

7:25: Calibrate instruments.

7:50: Resume drilling @ MW-308B
Refer to other fieldbook
(Rig 2) kept by BAID.
Next sample interval @ 24'.
Presently adding mud (guar
gum) to water.

9:54: Collect lab soil sample @
34-36 ft in 308B. No Recov
in upper sample intervals designated
for lab sampling. Presently @
~40 ft. Problem w/ running sand
@ till interface. Need to ~~drive~~
drive 5" casing into till. Was
drilling below 24' open hole
using mud.

Location Date

Project / Client

10:10: Run headop - Mini Rae not
zeroing out - may have
been by moisture in jar.
High of 3.4 ppm @ 39 ft

2:25: Encountered rock @
46 ft in MW308B. Roller
bit drill to 48 ft and set 4"
casing (@ 47.3"). Casing
needed to be hammered
thru till and rock pole.
Will not ~~add~~ add bent or
holiday due to tightness.

2:30: Cal instrument.

3:30: Arrive @ office

KJA

9

Location IHP OU4 Date 2/2/04

Project / Client EPA REG 1

6:30: Leave office.

7:05: Arrive on site.

7:15: Calibrate instruments.

MW-308B. R-1, 48'-53' (HQ)

DEPTH	START	STOP	RATE
48'-49'	7:45	7:52	6 MIN
49'-50'	7:52		2
50'-51'		7:56	2
51'-52'	7:56	7:58	2
52'-53'	7:58	8:02	4

R = 46"

RQD = 31"/60 x 100

DESCRIP: GRAY, HARD, MOD WX, BROKEN, F/C GRANITE; V BROKEN w/ SANDY SEAMS FROM 1.2 TO 3' (WHERE GR SIZE IS MORE FINE)

Location Date

Project / Client

FRACTURES / BEDDING MOD ANGLE -

R-2, 53'-58'

53'-54'	8:18	8:22	4
54'-		8:25	3
55'-	8:25	8:28	3
56-	8:28	8:30	2
57'-58'	8:30	8:33	3

R = 86"

RQD = 25/100

GRY, HARD, SL WX, BROKEN, M-GRANITE w/ MOD TO HI ANGLE FRACTS/JTS, SOME SAND AND CLAYEY SILT FILLED FRACTS, FEW MICRO-FRACS UNDET / CRACKS

9:10. Hole drinking water - [illegible] filling water tank. Mechanic on site to perform rig maintenance

Location _____ Date _____

Project / Client _____

R-3, 58'-62'8"

58'-59'	9:35	9:38	3 MIN
59'-	9:38	9:42	4 MIN
60'-	9:42	9:46	4 M
61'-	9:46	9:49	3 M
LPZ 62.7'	9:49	9:54	—

FULL BARREL

R= /56

RQD = 30/56 x 100

GRY, SL WX, V HARD, BROKEN TO BLOCKY, M-GR'D GRANITE W/ MOD TO HI ANGLE FRACTS, FRACTS SANDY IN BOTTOM 2'

R-4, 62'8"-67'8"

62'8"-	10:07	10:12	5 MIN
67'8"	10:12	10:17	5 MIN
	10:17	10:20	3
	10:20	10:25	5
	10:25	10:29	4

Location _____ Date _____

Project / Client _____

REC + RQD = 100%

GRAY, V HARD, FRESH, MASSIVE, M-GR GRANITE, ONE MOD ANGLE FRACT @ 2', OC HEALED JTS.

R-4, 67'8"-

67'8"-	10:48	10:51	3 MIN
72'8"	10:51	—	4 MIN
	—	10:59	4 MIN
	10:59		4
		11:08	5 MIN

R= 100%

RQD = 48/60 x 100

GRY V. hard, fresh to sl WX, blocky to massive m/c grained, Granite

ONE 1' LONG ±75° STAINED FRACT at ±1½ & 2½'

Location _____ Date _____

Project / Client _____

11:30 Finish coring @ MW308B
Flush hole w/ clean
water in prep for well
installation.

1:05 Finish emplacing sand
pack & bent seal in
MW-308B. Begin to pull
outer 5" Casing.

1:40: Move off MW308B - ~~Transport~~
Transport drum to fenced
trailer compound.

2:10: Drop drum @ compound.

2:45 Leave Site.

3:20 Arrive @ office.

[signature]

Location IHP Bldg Date 2/3/06

Project / Client EPA REG 1

7:05: Arrive in office.

8:00: Arrive @ site.

Weather: Raining 40°

Drillers steam cleaning
since 7:00.

8:40 Finish decon
Calibrate instrument.
Charlie & Bill dig
out MW39 well location

10:00: Unload rig @ MW-301.
site offset wells - original
location (inside detention
basin) is flooded. Move
to embankment SE of
PZ102.

Location _____ Date _____

Project / Client _____

11:00: Collect 1st Sample @ MW301
Due to rain - don't take
PID reading over spt.

- SS1, 0-2', 1·2·2·4; R= 18"
  - BRN, F/C SAND (MOSTLY F/M), TR TO LITTLE SILT, LOOKS NATIVE @ BOTTOM 3" (FILL)

- SS2, 2'-3½' (7·8·8. BOUNCING), R= 16"
  - UTILITY @ 3½'?
  - BN F/ SAND, FEW M/C SAND, TR. SILT (FILL)

12:00: Unsoves wood that may be old RR tie. Take spt @ 4 ft.

- SS3, 4'-6', 4·2·2·3, R= 8"

REWORKED TILL ? { TOP 6": GRY F-SAND, LITTLE SILT, LITTLE TO FEW F-GRAV, FEW M/C SAND, TR CLAY

MOIST

Location _____ Date _____

Project / Client _____

BOTTOM 2": DK BRN ORG SILTY SAND, FEW FINE RTS, WET

— 7'±

Note: M. Davis confirm'd absence of util in this area

- SS4, 9-11', 14-19-27-32, R= 12"
  - ORGANICS (DK BN WASH) IN WASH WATER)
  - GRY BRN F/C SAND, FEW F-GRAVEL, TR SILT; DENSE BUT NOT TILL (SW)

— 12½'

- BOULDER/COBBLE FROM 12½ TO 13½'±

- SS5, 14'-16', 24·34·34·30, R= 3"
  - BROWN F/C SAND, SOME F/C GRAVEL, LITTLE SILT, TILL MATRIX, POOR RECRUSHING GRAV? (SM)

Location _____ Date _____

Project / Client _____

• SS6, 19'-21', 21.19.33.27, R=8"

BRN F/C SAND, LITTLE TO SOME F/C GRAVEL, LITTLE SILT; TILL (SM); BOTTOM (TIP) IS GRY AND MORE FINE W/ TRACE CLAY

BRN TILL
— — — 20'
GRY TILL

2:20 : Clear up.

PID	HDSP
SS1	0.0
SS2	0.1
SS3	0.2
SS4	0.9
SS5	0.1
SS6	0.1

ISOBUTTEDLAR BAG OK : 152 PPM

Location _____ Date _____

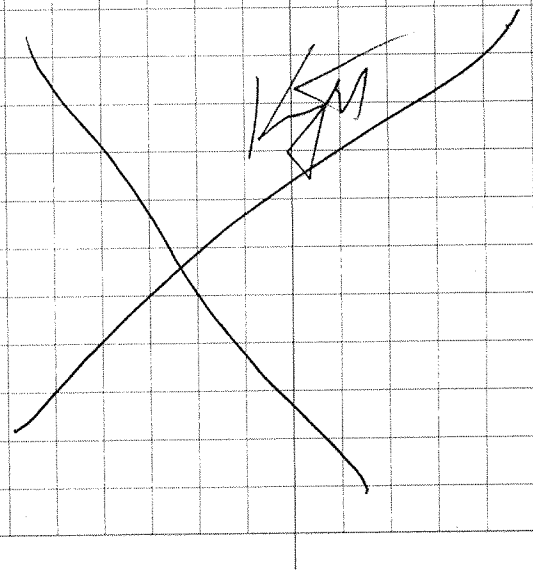
Project / Client _____

3:15 Development pump @ 3:08 PM if off - ~~dead~~ dead battery.

3:30: Mobe off site.

4:10: Arrive @ office.

KJM



Location IHP OU4 Date 2/6

Project / Client EPA REG 1

6:25: Arrive @ office.

7:00: Arrive @ site. Cal instrument.

8:15: Add mud to drill tub presently @ 18' w/ casing

9:20: Begins to snow

9:50: Pump gear is work down to neck - unable to cont. until repaired. Mech. to be called

12:05: Rig up and running

1:50: Encountered possible rock @ 52'. Broke three or bit feet zone @ 52½. Becomes hard again @ ±53 ft. Roller bit

Location Date 2/6

Project / Client

to 54 ft. Set casing (4") @ 54' (although risky of not rock)

3:05: Lots of difficulty driving (lowering) 4" casing thru open hole below 5" casing. Bottom of casing (4") presently @ ± 48.5'. Still have ±4½' to drive. Thought casing was going to snap before reaching set depth. Till mat'l and cobbles make driving pipe more difficult.

3:30: Recall instrument and run HDPE analy.

4:00: Move off site. KPD

Location ~~[illegible]~~ IHP Date 2/7

Project / Client EPA REG 1

6:35: Leave Wakefield

7:00: Arrive on site.

Weather: M. Sunny, Low 30s

8:05: Drove 53.5 (51.5 in ground) ~~[illegible]~~ far @ MW301B.

WELL MAT'L

- CETCO PUREGOLD MED. CHIPS (BENTONITE)
- HOLLISTON SAND CO. (#1 SAND)
-

Location Date

Project / Client

8:30: Prepare to core. Flush hole and leave out tub. 7 min cuttings - ~~[illegible]~~ no place to put them since we are on top of narrow berm that separates two drainage swales.

MW301B, R-1, 54½-59 (HQ)

54½'	8:55	8:59	4 MIN
		9:03	4 MIN
	9:05	9:10	5 MIN
		9:14	4 MIN
-59'		9:18	4 MIN

R = 46"

RQD = 0%

GRY (WX TO BRN), HARD, MOD WX, V. BROKEN, M-GR GRANITE W/ MOD/HI ANGLE FRACS, SOME SILT & SAND FILLED JTS.

Location _____ Date _____

Project / Client _____

R-2:

59'-	9:35	9:38	3 M
		9:43	5 M
		9:48	5 M
-63'		9:53	5 M
	R-	45"	(BARREL
	RQD =	15/48	JAMMED)

Granite as above, sl less broken and wx

MW 301B, R-3

63'-	10:11	10:14	3 MIN
		10:17	3
		10:20	3
		10:23	3
-68		10:27	4

R: 100%

RQD: 20/60 = 100%

TOP 3: WX BRN, BROKEN, M-GR GRANITE W/ LOW/MOD ANGLE FRACTS

BOT 2': FRESH, BLOCKY Q+Z RICH, C-GR PEGMAT W/ WHITE PLAG(?) AND FEW MUSC X STAL AND SM EMBR GREEN X STALS

Location _____ Date _____

Project / Client _____

R-4, 68'

68'-	10:44	10:47	3 M
		10:50	3 M
			4 AVG
			4
-73'		11:02	4

R-5, ~~73'~~-78' R= 60"

73' 11:17 RQD= 0%

WHITE, V. BROKEN, SL WX, PTZ PEGMATITE W/ SEVERAL MICA INCLUSIONS. ~~AN~~ CONTAINS SOME WHITE PLAG(?) FEW SILT COATED; ~~AND~~ POSS GRAN @ BOT 1"

R-5, 73'-78

11:17 11:40 4½ MIN AVG

R= 39"

RQD = 11/60 = 60"

WHITE, BROKEN PEGMAT, GRADING TO WX BROWN AS ABOVE, MOD WX (PITTED), ~~M-G~~ HARD, M-GR GRANITE W/ LO TO HI ∠ FRACTURES, SAND FILL JTS

Location _____ Date _____

Project / Client _____

12:30. Emplacing sand pack for MW301B

1:30. Pull off MW301B. Set up @ MW301S

2:00: Collect 9-11' spoon w/ @ 2½" spoon. This interval to be sent to lab.

2:30: Finish installing MW301S Clean up.

3:00. Return to trailer. Mix soil sample from 9-11' interval of MW301S in a SS bowl and separate into jars - place in refrig.

4:00. Move off site.

KJH

Location IHP OU4 Date 2/8

Project / Client EPA REG 1

7:05 Arrive on site.

7:15 Calibrate PID

7:30 Leave trailer.

7:55: Water level in MW301S is 7.96± from top of PVC (Approx 5.5 ft BG)

8:55: Water level in 3 DIB is 8.53 ft below Top of PVC.

• Engine ~~[illegible]~~ trouble w/ rig - 2 low on oil - may have seized engine!

9:40: Start well developing @ 301B. Bowl pump to extent of cord

Location _____ Date _____

Project / Client _____

11:00 Geo. Mechanic on site. Helper Scott to return to complete PPs and install concrete pads.

12:00: Unable to repair rig on site. Will need to take back to shop.

1:30 Rig loaded onto trailer

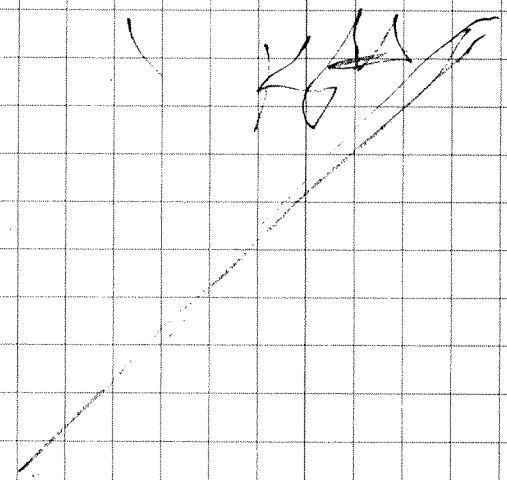
3:25: Dirtbusters moving off site w/ rig. They completed remaining concrete pads (2). Return to trailer. Finished developing MW 305 & B.

Location _____ Date _____

Project / Client _____

- Chris Du Vernay @ Geologic said they will send out a replacement rig on Friday to complete installation of MW 301D

4:00: Move off site



Location _____ Date _____

Project / Client _____

WELL	TIME	RATE	VOL.	TURBID.
3018	9:30	—	—	—
	9:40	5 g/3 MIN	0 g	170
	9:53	1.67 gpm		OUTSIDE RANGE (OR)
	10:45	5 g/15 M*		1000
		↳ WL DRAWN DOWN >63' FROM TOC		
		* LIKELY PRODUCTION RATE		
	11:00	0.0	STOP	PUMP
		↳ 60' BELOW TOC PVC = 11:01		
		50' " " = 11:07:22		
		40' " " = 11:15:14		
	11:19:30	- START PUMP AFTER		
		VARIABLE W/ HEAD As		
	11:23:30	-		OR
	11:28:00	DRAWN DOWN TO PUMP		
	12:13	0.33 gpm		700
	12:18	- STOP PUMP, LET RECOVER,		
	12:34	2 gpm		OR
	12:57	VARIABLE		600
	1:03	STOP	PUMP	

Location _____ Date _____

Project / Client _____

SP. COND.	TEMP	PH	COMMENTS
—	—	—	0 ppm INSIDE PVC
265	9.2	8.4 / 8.3	START
223	9.6	7.4	SL. SANDY MORE TURBID
185	9.3	8.1	TURBID
PURGE RATE HAS SLOWED W/ DROP IN WL			
SURGING WELL - INITIALLY MORE SILTY			
191	10.7	8.2	
@ 63'± ; PUMP RATE SINCE = ±5 GAL. / 15 MIN			
186	10.6	8.2	0 PPM
TO 40 FT, AND SURGE			
155	10.7	8.4	SL. SANDY
163	9.6	8.1	

Location _____ Date _____

Project / Client _____

WELL	TIME	RATE	VOL	TURBID	SP COND	TEMP	PH	COMMENTS
3015	1:23	2 gpm	0	OR	507	7.4	6.9	SILTY, BROWN, SANDY
	1:35	5 g/3 min		OR	425	7.3	6.7	LITTLE SAND, BROWN, TURBID, SULPHUR ODOR
	1:45			14	427	7.6	6.8	CLEAR, SULPHUR ODOR
	1:55	~~SURGE WELL~~		WELL DRAWN DOWN TO TOP OF PUMP (1.5' FROM WELL BOTTOM). SHUT OFF PUMP, LET RECOVER, SURGE WELL				
	1:59	5g/3m		OR	419	7.0	6.9	RESTART PUMP, BRN, SILTY, SANDY, S ODOR
	2:14	5g/3m		8.8	427	6.4	7.0	CLEAR, SULPHUR ODOR
		ALTERNATE SURGE & PUMP AFTER EACH SURGING						WELL CONTINUES TO SILT/SAND UP
	2:48	5g/3m		13	205 ?	6.2	7.0	SULPHUR ODOR
					↳ SUSPECT WRONG			
	3:03	- SHUT OFF PUMP						

Location _____ Date _____

Project / Client _____

Location IHP AU4 Date SATURDAY 2/11

Project / Client EPA REG 1

7:15 : Arrive on site.

7:25 : Replacement rig & crew arrives on site.

9:05 : Start pounding casing @ 301D.

12:10 : Collect spoon @ 34' for TOC & Grain size analysis.

3:00 : Finish installing MW301D well & concrete pad. Move back to trailer w/ drum

3:40 : Drillers finish decon'g equipt & pad - drive to load rig onto trailer on B&M Jct.

3:45 : Move off site

4:30 : Arrive home

10 MW

Location IHP AU4 Date 2/13

Project / Client EPA REG 1

11:40 : Move to site.

12:25 : Arrive @ MW-301D for ~~equipt~~ development.
• Development summary on next two pages.

Weather: Sunny, low 30s. More ~~than~~ 12" of snow fell this weekend

Water level TOC = 4.3'

4:30 : Leave site. Packed up rental equipt

5:25 : Finish unloading equipt.

[signature]

Location _____ Date _____

Project / Client _____

WELL	TIME	RATE	VOL	TURBID	SP. COND	TEMP	pH	COMMENTS
30MD	1:05	-	5 GAL	700	319	7.6°	8.1	INIT. V. TURB & SILTY
	1:10	-	10 G	OR	251	9.9	7.0	DKEN GRY, CLOUDY
	- SLOWER RATE AFTER STANDING					VOL. PURGED, DRAWN DOWN TO PUMP		
	1:31	VAR	15 G	OR	275	9.2°	8.0	GRY. CLOUDY, SOME SILT
	1:33	- SHUT DOWN PUMP						
	1:33:10	- RECOVERS TO 43'				BELOW TOC		
	1:44:30	- RECOVERS TO 37'				"	TOC	
	1:53:10	- RECOVER TO 33'				"	TOC,	
	2:00	SURGE well - RE. to				30.5' below TOC (top of screen)		
	2:04:22	START PUMP						
	"	VAR	16 GAL	OR	92	10.2	7.7	V. TURBID/SILTY, SL. SANDY
	2:27±	VAR	25 GAL	OR	91	7.4	7.6	LESS TURBID, SILTY, SANDY
	2:53	VAR	30 GAL	230	117	7.2	7.8	MOD. TURBID, SL. SANDY
	3:05±	VAR	32½±	95	88°	8.7	8.3	CLOUDY, SL. SANDY
	3:16	-	35 GAL	-	-	-	-	MOSTLY CLEAR
		STOP PUMP						

Location _____ Date _____

Project / Client _____

Location _____ Date _____

Project / Client _____

RESULT	#	INSTRUMENT	DATE/TIME
95 ppm	2245	Mini RAE	2/7 @ 7:18
98.1	8705	" "	2/8 @ 7:15

Location _____ Date _____

Project / Client _____

Location _____ Date _____

Project / Client _____

RESULT OK	INSTR #	INSTR.	DATE / TIME
✓	2245	PID (MINI RAE)	1/16 @ 8:45
✓	2245	MINI RAE	1/16 @ 3:30
✓	2245	MINI RAE	1/17 @ 7:30
✓	2245	MINI RAE	1/17 @ 15:20
✓	2245	MINI RAE	1/18 @ 7:30
✓ (95 ppm)	"	"	1/18 @ 4:30
✓ (98 ppm)	"	MINI RAE	1/19 @ 7:30
✓ (98.5 ppm)	2245	MINI RAE	1/23 @ 8:30
✓ (114 ppm)	2245	"	1/23 @ 15:30
✓ (98 ppm)	2245	"	1/24 @ 7:30
104 ppm	2245	"	1/24 @ 2:30
95 ppm	2245	"	1/25 @ 7:30
145 ppm	"	"	1/25 @ 3:30
95 ppm	"	"	1/26 @ 7:15
145 ppm	2245	"	1/26 @ 2:30
98 ppm	2245	"	2/1 @ 7:20
102 ppm	2245	"	2/1 @ 14:30
99 ppm	2245	"	2/2 @ 07:15
98 ppm	2245		2/3 @ 08:40
98 ppm	2245		2/4 @ 07:15

The manufacturers of "Rite in the Rain" all-weather writing products are grateful to the numerous environmental experts who have contributed to the development of this book. Should you have any additions, improvements or corrections for future publications of this field book or have suggestions for other environmental field book formats, we welcome your input.

Although much effort has been taken to insure the accuracy of the following reference pages, the J. L. Darling Corp. can not guarantee the accuracy of the data contained herein.

To provide input or solicit pricing on these or custom printed field books, contact your "Rite in the Rain" dealer or J. L. Darling Corp., 253-922-5000 or fax 253-922-5300. www.riteintherain.com

Common Field Data Error Codes

Error Codes Are Used to Explain Common Mistakes and Are Written Above or Close to the Mistake
Commonly Used Error Codes Include:

- RE Recording Error
- CE Calculation Error
- TE Transcription Error
- SE Spelling Error
- CL Changed for Clarity
- DC Original Sample Description
- \- Changed After Further Evalutaion
- WO Write Over
- NI Not Initialled and Dated at Time of Entry
- OB Not Recorded at the Time of Initial Observation

Note: Error Code Should Be Circled, Dated And Initialed When Recorded.

Hazard Classifications

Class 1 Explosives
Class 2 Gas
Class 3 Flammable Liquid
Class 4 Flammable Solids (Potential spontaneous combustion, or emission of flammable gases when in contact with water)
Class 5 Oxidizing Substances and Organic Peroxides
Class 6 Toxic (poisonous) and infectious substances
Class 7 Radioactive material
Class 8 Corrosives
Class 9 Miscellaneous dangerous goods

Container type abbreviations (for sampling guidelines):

BR - Boston Round
ABR - Amber Boston Round
AJ - Amber Jug
CWM - Clear Wide Mouth
AWM - Amber Wide Mouth
Poly - Polyethylene Bottles
BOD Bottle

APPENDIX A.2

Field Sampling Logbook #4

- **Drilling Logbook #3**
- **Groundwater Sampling - Round 2**
- **Water Level Measurements**
- **Site Survey**

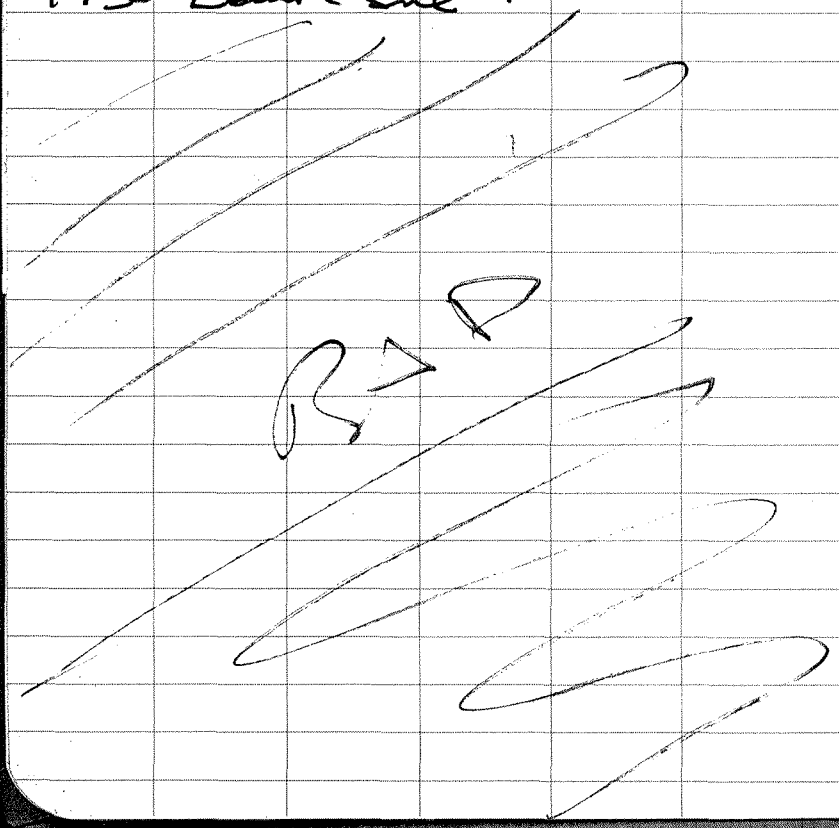
Location NO. BILLERICA MA Date 1/9/06

Project / Client IHP / EPA

M&E: BAD

1630 Arrive at site.
Pond St. gates frozen shut.
Will require work to open
gates. Bring tools tomorrow
1645 Mobe equipment to trailer.
Set PID/CGI to charge.
Assemble computer.
1730 Leave site.

BAD



Location No. Billerica, MA Date 1/10/06

Project / Client IHP / EPA

M&E: BAD

Arv. 0730
Laurie O'Connor (M&E) on site
Having problems w/ Pond St. GATES.
0800 BAD (M&E) Fixed gates by
raising hinges and gates
Gates now swing free.
0915 Drillers still not on-site
Prepping for MW-302S & 303S.
LOC departs @ 0830.
0930: Calibration: BAD (M&E)

MINIKAE 2000 ID 2245 PID: 0 ppm (fresh AIR) reads = 0
100 ppm (ISOBUTYLENE AIR) reads = 99.8

Genesis Therma Gas Tech Sn 0420001 CGI Calibrated by rental Co.

CAL'd TO
- 20.9% O_2
- 50 % LEL
- 50 ppm CO
- 25 ppm H_2S

Cal check
- O_2 12% Read 12%
- CH_4 50% Read 54%
- H_2S 25 ppm Read 20 ppm
- CO 50 ppm Read 0 ppm
- CO went Wack after gas removal 50 ppm

USED AIR Reset.

CAL GASES

PID ISOBUTYLENE AIR Exp. 4/15/2007
Proj. ID: 0129098-001

CGI CO 50 ppm
CH_4 50% LEL (2.5% vol)
H_2S 25 ppm
O_2 12% vol
N_2 BAL

MFG date 1/05
LOT # BAF-409-4

Location No. Billerica, MA Date 1/10/06

Project / Client IHP / EPA

0940 Drillers arrive

WEATHER

Sunny Some Hazy Clouds

Tm 40's F, Occassional breeze

Probably warm up thru day.

1040 Reviewed site w/ drillers

went over H&S and Schedule

Charlie O'Donnell Driller ATV.

Damien Jacuse ASST.

Spoke w/ Warren Diesh (M&E)

Kevin Hartten (M&E) geologist.

not avail this week. Check Joel.

Dianne Silverman - Joel NOT AVAIL

1045 Drillers setting up decon pad.

Left message for Richard Hosterman.

Gen Man. Corporate Reserve Supply 978-528-5320

- OIL/SLUDGE area.

1120 Spoke w/ John Collins: Said ok

USE hydrant - go real easy to

avoid water hammer. Also

Said to try and contact Mike Davis

in Engineering to let him know.

JC (Guilford/B&M) also said they

had no maps of utilities

Location Date 1/10/06

Project / Client

1145: Tried to reach Mike Davis (Guilford)

@ Guilford Bldg. Left message.

1150 Received message from R. Hofsterman

From CRS - said he had some util

maps. From earlier conversation

R.H said he thought all utils come

in front bldg.

1220 Stopped @ CRS - and Spoke

w/ Richard Hosterman. He had

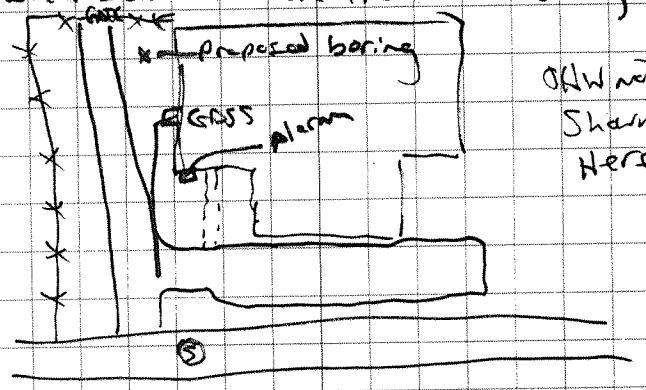
maps that showed ~~gas~~ gas

lines, OHW, Sewer holes and culverts.

No water/sewer to bldg though

location manhole and gas line suggest

water sewer run in front CRW. Bldg.



OHW not Shown Here.

Location _____ Date 1/6/06

Project / Client _____

1300 Chris (Earthen) called w/ digsafe Ticket 20060202454 for Fri 1/13/06 1230 pm start. He also talked w/ Town water & sewer. Said they'd have looks even though not public utils in IHP. Dianne (M&E) - No go until permit activates. We were supposed to follow through w/ util maps. So will go recon those.

1330 Drillers off-site. Generator dead no decon

1415 Completed ~~off~~ all prep work and decon. at trailer off To chase Utilities.

1430 Tried to reach Mike Davis @ Guilford again but not in. Spoke w/ mechanical who said he is usually in very early and heads out into the field. I was transferred to Mikes V-mail where I Left a message. Also called J. Collins and left message again requesting util. maps for water etc---

Location _____ Date 1/6/06

Project / Client _____

1450: Stopped back at CRS and borrowed maps from R. Hosterman ~~off~~ before and after plans for the CRS property.

1455 TALKED w/ STAN about rental equipment. He's calling palm to see what they'll do.

1550 Spoke w/ Stan Keep equip but take home.

Well recon:

308B - No problems - in a wetland marsh + 2 other wells prev. drilled.

307 SDB - No problem in wetland/marsh

306 S - No problem in OU1 in area previously excavated.

305 SD - No problem in wooded wetland area adjacent unk. brook, No surrounding development.

304 SDB - Near tracks - Downed powerline overhead but no other bldgs to suggest buried.

303S - Edge Parking lot - water line in vicinity but not acc. MAP where mapped ok.

302S - Next to CRS maps show no util - digsafe would be good

301 SDB - Next to large retention basins recently built - no problems likely Neighbor Junkyard, utils not likely.

Location IHP No. Billerica Date 1/12/05

Project / Client IRON HORSE / EPA

M&E : BJD

0800 on-site : Review drill loc. w/ map in mind. MW-303s Not in good loc. Ponded water possible water line.

0845 In to see John Collings.

0900 GUILFORD Mike Davis & John Collings Show Up. Mike has more reservations about using hydrants wants to discuss more. John, I already thru it once. Will need to be Vo careful.

0925 At location MW-303s there is buried power to the welding shop. So new concern. Looks like we'll need to move inside fence.

0945 Have copies of water & sewer maps MW304s wells seem clear. MW302s Seems clear, no water though. MW303s Need to move MW301 clear

10:40 Dropped Mike Davis off. Def. issues MW304 & need flag. Off to CRS - Rich Hofstetman

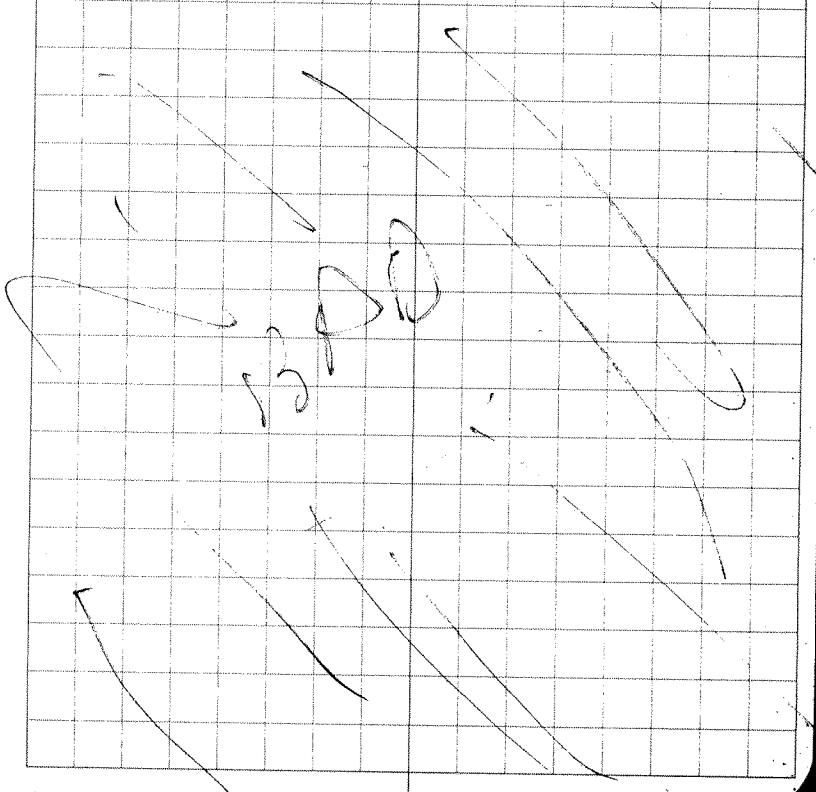
1100 Spoke w. R.H. (CRS). Seems water and power run under

Location _____ Date 1/12/06

Project / Client _____

ground above instead building. Well location still seems good. R. Hofstetman will look for pictures, more maps, and call previous owner. - Mike D (Guilford) will check on flag protection.

1200 Off site to office.



Location No. Billerica, MA Date 1/13/06

Project / Client IHP / EPA MSE BAD

0700 on-site.

0745 drillers arrive - mobing / planning

0930 Decon starts

0830: Gas Co. shows up, gas lines no problem.

0950 R. Hofsterman (CRS) said he could find no additional maps and the pictures did not include that area were MW-302 is. Though through conversations he & his second in command said that they are 98% sure there's no problem where the well is. SAID Jack Kelleher construction Howe Survey Chelmsford Jeff Wider

NOTE: spoke w/ Mike Davis (Guilford RR) He said they'd like to wait till Monday to close the track so no 304 till Monday.

1030 DECON ENDS (1hr)

Spoke w/ Chris - Town claims no ownership over sewer & water. Water guy said they'd come out but no markings visible.

1115 Talked to water dept. who were out to lunch

Location Date 1/13/06

Project / Client

not to return till 1230 - So try back.

1125 Called Town plan/zone/bldg. She said inspectors would know if anyone would. They won't be back till 3 or 4pm.

1200: Barbara @ Kelleher construction Said she would look for them Sounded like they wouldn't necessarily have them. Will call back. Said CRS should have as builts.

(NOTE TRIED TOWN PLANNING - NO ANSWER.)

1243: Spoke w/ Howe Survey Company bought out recently so only 1 person still there who was at original company. Gave them the map #'s from the maps I had. Fellow said he'd see if he could find them as builts and send a tiff.

1300 John McGovern WATER - Across Across Iverson Ford on 129/3A SAID OLD INS. MAP but nothing else.

Location _____ Date 1/13/06

Project / Client _____

1445 Billerica Water Dept.
John McGovern
Looked at old 1930 & 1974
Insurance maps. No features
on CRS (Penn Culvert formerly)
propert. One map showed
8" Line on High St side of CRS
and one 6" coming in drive adjacent
to gas line - this is old original
water feed to building.
1450 Town Hall Billerica
1530 Found Piping plan of IHP
Undated but obviously old.
Plan shows the old 6" water
line into Penn Culvert (now CRS)
coming into the front of the
building. No new maps found
or plans for it.
Went back to building ofc
Dave - inspector who may know
where the plan is. Won't be in
till Tues

Location _____ Date 1/16/05

Project / Client _____

ARV. 0715 K. Harten on Site. Drillers
reported being here @ 0700 - fill water
0745 finally got through iced
locks. - Health & Safety mtg.
Review construction of wells.
Charlie (Earthex) said running
5" casing bedrock so need
Veri QD - A QUARGUM to push
cuttings out hole. Also, type III
cement to grout casing so
it seals properly before drilling.
vol clay for grouting wells O.B.
0845 CAL PID
0 - 0 ppm } Minirae 200
100 = 96.5 ppm } #2211
0930 Second Rig Arrives.
MATT & DAMIAN
1030 Mobed Bomb to first
well MW-302S. Came back to
Trailer to drop off trailer and to
HFS and plan.
1050: Mobe to MW-302S.
1645: Drilling complete for
today.

Location _____ Date 1/16/06

Project / Client _____

Summary:

ATV rig crew (RIG 2) arrived on site 0700. Charlie's on early bird. ATV is RIG 2 - set K. Harter (M&E) up w/ RIG 2, which moved to MW-304 in contaminated soils area. Started on MW-304B, however the first hole ran into a bolder @ ~13 ft. Could not drill through with out further issues for a deep hole so decision was to construct MW-304S and move onto the second location. RIG 1 stated @ MW302S. Well installed to 11.5 ft, hole drilled to 12 ft. - Water table was at 2 feet, top screen 1.5 ft bgs. Moved to MW-303S well begun to 4.5 feet. Will likely go to 12 feet. Will check W.L. in morning to confirm water table. Well will be flush mount so as to avoid steel pipe being destroyed by fork lifts.

Location No. Billerica, MA Date 1/17/06

Project / Client Iron Horse Park / EPA

M&E: W. Abrahams-Dematte

0645 ARV.

0700 check drill site areas, no one else on site.

0730 Cal check from last night on 2211 was 96.5 ppm out of 100

Calibrate today 2211 today

0 ppm = 0 ppm

100 ppm = 95 ppm

0800 MATT ARVS (GEO) w/ new assistant.

0820 Waterfill - Smooth, no hiccups

0900 UNDERWAY W/ 303S.

NOTE: CGI Readings yesterday

Were no problem 0-2 % LEL w/ rig running

20.9% O_2

0 ppm H_2S + CO

1030 Hours MW303S built. Drillers now finish up MW302S.

OUT of curiosity and as a check I went to 202 cluster.

MW-202B: When J-plug loosened the well exploded cap out w/ large pop. I got PID out and it registered ~15 ppm Water Table >> 25 ft. curious if meter defective pulled tape but it was dry

Location _____ Date 1/17/06

Project / Client _____

When I reinserted tape I found groundwater, which was rising rapidly @ 1 ft / ~45 sec. Since I started writing well has rose 10 ft. 5 ft in ~7.5 mins WT 3.95 & rising.

MW-2020: Opened w/out incident. PID = 0.5 ppm water level looked stable. Well under ice, bag in place Kept Well dry. WL = 2.2 bgs.

MW-2025: No issues 0.3 ppm WT = 2.40 bgs

1600 Cal check PID 100 ppm = 109 ppm

Summary 1/17/06

RIG 1: Completed MW-3025 completely. MW303s set to just install roadbox to finish MW-3065 sampled, to be well constructed Tomorrow.

RIG 2: Drilling Bedrock well MW-2040 ran into boulder @ ~15 ft Then Top weathered bedrock

Location _____ Date 1/17/06

Project / Client _____

@ 22 possibly. Cored 24-29 ft. Today definitely 5 ft Bedrock, possibly 7 ft. Bedrock is apparently shallow. Continue coring tomorrow to 54 ft. RAISES a need to consider well depths of the 3 wells at this location

Shallow is to 12 ft

Suggest Deep of either 12-22 ft & 19-29 ft

Suggest Bedrock of 26-46 or deeper not to exceed 54 ft.

Will discuss w/ Kevin tomorrow.

BND

Location N. Billerica, MA Date 1/18/06

Project / Client HHP / EPA

ARV 0630
Drillers 0715
Mechanic 0800
Rig 2 having issues (mechanical) fairly serious ones.
0900 Chris (Geologic) shows up on site. Discussions ensue about work and well locations and rigs.
1130 Drums arrive, have to head out to load w/ drums. Rig 1 @ MW305
1400 Pouring rain on and off has made drilling difficult Rig 1 currently demobing
1515 Spoke w/ Lauri (MGE) need chain for drum storage area will have to go to Sommers.

SUMMARY 1/17/06

Rig 1: Completed MW305S and moved to MW-305D after minor repair to leaky union. Completed 12 feet of well construction @ 305S

Location Date 1/18/06

Project / Client

and installed 4' guard pipe well complete except for pad. At 305D completed 9 ft of drilling in level C over 1 hr of time. 1 1/4 hrs w/ 15 min break 1/2 way thru. Sampled continuous to 6 ft then drive/wash to 9ft. WT ~ 5 ft. Began 9-11 ft as first of samples every 5 ft. Final depth today 21 ft (19 drilled + 2 spoon).

Rig 2 had many more problems and kept breaking down. Chris (Geologic) SC was out this am. Said they were going to make a truck mount rig to replace the ATV to complete the 304 wells. Will remake the ATV rig next week after fixing it.

MW304 Wells

Due to the fact that bedrock was shallower than thought, the method of bedrock well installation was changed. Changed the wellhead also due to drilling

Location _____ Date 1/18/06

Project / Client _____

SUMMARY (CONT)

methods. M&E intended to use 4" casing, seating pipe w/ bent and rock core, finally grouting up through bedrock into 6" casing. Geologic intended 5" casing run thru w/ 4" into drilled rock socket and grouted w/ cement grout. This method involves sending grout up entire casing length on outside, potentially causing pH problems. Resolved by going w/ M&E method of 4" bent into socket and grouted up through.

BAD

Location No. Billerica, MA Date 1/19/06

Project / Client IHP / EPA

M&E B. Abrahams Demette.

Arv. 0630

129 South shut down due to power lines down, will need to use site access thru pond street.

V. high winds, less steady than overnight. T~30°f w/o wind gust 20% clouds.

Looks to be sunny day.

0715 CAL PID 8705

0ppm=0ppm 100ppm=98.2

0830 Kevin (M&E) called w/ Stephanie's arrival (asbestos man.)

Waiting at trailer for Stephanie to arrive. Will need to move her equipment.

0930 Both drill crews working at MW304. On way back now.

1015 RIG 2 is down, end of drilling for Team 2. They are off-loading equipment at staging area and drill Team two will be off-site

Team 1 ~~round~~ ran into problems w/ drive shoe being egged shaped.

Location _____ Date 1/19/06

Project / Client _____

Had to change tactics. Deep well at 305 now shallow well and shallow becomes deep.
Called Diane and filled her in.

SUMMARY 1/19/06

Typically here, accidently written on pg. 20 of "IRON Horse Park RIG 1 - JAN 2006" field drilling log book.

In SHORT

RIG 1 Install 305S, reached bedrock 305D @ 22 ft. Will confirm tomorrow w/ rock core.

RIG 2 never got off the ground Head shot.

BAD

Location No. Billerica, MA Date 1/20/06

Project / Client IHP / EPA

Summary

MW-305D

Process slow but steady Advanced Total 22' to 34' of which 7' coring and 5' rollerbit From 22' to 24.5' may be boulders but by 26' definitely in bedrock So basically 22' - 34' is all rock, coring section 24-26 feet had competent core which was similar to 29-34 ft core. Call bedrock 26' weathered.

Built well from 15-25 ft

BAD

Location N. Billerica, MA Date 1/23/06

Project / Client IHP / EPA

Arr 0815 - 2.5+ hrs to get to site. Heavy snow storm called for all day. Snow currently coming down heavy full overcast T's low 30's High humidity.

0915 Drillers have pulled off MW-305D and are decoming the rig.

1/2 hr drum management

0900-1030 Decon: Kevin recorded decon time.

1000-1145 hrs went to OEME in Chelmsford to deliver samples TOC to EPA LAB.

After coming back geared up to develop MW-302S & MW-303S. Kevin spent day finishing MW-304B wh/ will be screened 28-48 ft roughly. Bottom from ~31 ft rock core hole was 3" due to need to telescope.

BAD

Location No. Billerica, MA Date 1/24/06

Project / Client IHP / EPA

0630 Open site

0700 Drillers & Kevin arrive. Spoke w/ plow guy, said he'd be by around 0730

0745 ~~Dr~~ Plow guy arrives.

Weather hazy but mostly clear, looks to be a sunny day T's currently in high 20's & supposed to go to mid 30's low-mod humidity.

0810 Plow guy done. Said he'd leave a bill but hasn't yet. Will call and let him know that we may not be here later when he returns.

1330 Drilling @ 304D went well, no boulders. Well should be complete today - Developing wells close to complete {NOT INCL. 304's} which may be next.

1530 Develop one more well MW-304S.

Location _____ Date 1/24/06

Project / Client _____

Summary

Drilling @ the 304's went well today, no boulders. 304 wells are now complete except for concrete pads. Well development has now been completed at MW's 302s, 303s, 304s, 305s, 305D, 306S. Wells 304D and 304B will be completed tomorrow. Development at all wells produced a lot of fines, mostly b/c MS pack was used and aquifers here are silty, but very permeable. No wells were run dry.

MW 304D was set to strade the distance btw 304s & B.

BAD

Location No. Billerica, MA Date 1/25/06

Project / Client IHP / EPA

Weather:
Overcast, Snowing.
3 or so inches accumulation
T - Low 30's, high humidity,
Drillers running late due to paper work and mobing materials.
Prepping for 307 wells.

Decon started ~0830 hrs - 0930 hrs
1 hr. decon.

1050 Set up @ MW-307B.
Driller installing crows nest on rig to help simplify drilling.

Summary
Wells MW-304D & B developed. Both wells cleared up nicely. MW-307B started and down to 19-21 ft Sample zone. Soils firm enough to keep open hole to this depth. Driller cleared hole & tube of water and seds to avoid asbestos cont. going further down the hole.
K. Harten (M&F) to cover tommorrows drilling.

Location No. Billerica, MA Date 1/27/06

Project / Client IHP / EPA

0645 Drillers on site off for water while M&E checks concrete pads.

Conversation w/ K. Harten (M&E) Kevin said that drilling went well yesterday (1/26/06), that a couple of 1.5' boulders were hit, but that bedrock was reached @ 56 ft. Said Charlie (Geologic) had hole open w/ mud so that he could get large roller bit down to creat of socket 56-59 ft in which to set 4" casing. Kevin recorded units for yesterday.

0715 Mike Davis (Guilford Rail) came by and went off on drillers about water usage from hydrant. The original message I (Bill-M&E) received from him was extreme caution was to be used in open and closing line to prevent

Location Date 1/27/06

Project / Client

hammering. This has been the direction I have been giving the drillers from day 1. Also John Collins (Guilford/B&M) was aware we were using hydrant. I had asked him about is on several occasions and was told it was ok to use.

0800 Checked out concrete pad work. MW-303S was completed w/ flush mount box looked good. 305S/D & 306S were only filled w/ form S. 304's/OW7/OW8 still to check. 304's complete OW7/OW8 not even looked @.

0900: Near ready to begin coring 307B.

1315 Well MW307B installed. Chris called - earlier said ATV down all next week too.

1414: MW307B set, beginning next well. just driving

Location _____ Date 1/27/06

Project / Client _____

Casing to 14 ft. Wait till Monday to move forward w/ wash out and sample.

SUMMARY

Started right in w/ rock coring after slight delay w/ water. Mike Davis (B&M) changed mind about usage of hydrant and called us off it this morning - making us use garden hose @ maint. shed. Once going rock coring went well No hitches. Shortened the run by 5 ft to speed up drilling to make up some time for lack of 2nd drill rig. Rock core was highly fractured most of way down.

Checked on pad construction during previous day. Only wells completed were 303 S, 304 S, D, B. Wells 305 S, D and 306 S were only form set no concrete. OW-7, OW-8 not even looked at.

BAD

Location No. Billerica, MA Date 1/30/06

Project / Client IHP / EPA

Arv. 0645

Weather Overcast 100% clouds and drizzling. Rain stopped shortly after. T~ mid-high 30's. Much of the site is thawing. The 307 wells are no longer accessible by vehicle. Drillers had to go to hardware store for additional supplies to run water across top of landfill back to the drill rig.

1500 Drillers off-site.

48 ft drilled well 47.5 ft

MW-307D

Summary 1/30/06

Well MW-307D completed to 47.5 ft bgs. Lost 1/2 ft to surge of sand, intended depth 48 ft. Two samples were collected, one from 14-16 and the other from 48-50 ft. The deeper sample was originally taken at 44 ft but return was insufficient so a second sample

Location _____ Date 1/30/06

Project / Client _____

was collected. The second sample was also short of return leading to 1/2 TOC jar and <1/2 Grain Sz. jar. Possibly only collect TOC.

Due to weather drillers were reluctant to drive over to the well location, so they ran water line from the road, which proved slow, but effective.

After completion of work Charlie Lad Scott run blue juice (windshield washer fluid) through hose to prevent freezing. Also noted use of liquid wrench on control board for rig. Finally during cleanup when driller up ended mud tub, spilling contents on ground MEE noted a rainbow sheen on the ground, as if some oil had gotten into the tub. Assume the result of drilling activities

Location _____ Date 1/30/06

Project / Client _____

Also noted driller using twigs to pick grease blobs of rig. He tosses these into the brush.

As of 2/1/06 13 Empty + 3 Lids

DRUMS 1-Trailer waste
4-w/purge water from Sludge recyc. area
1-Soil Sludge Area
1-Soil 305-ACM area
2-Soil 307-ACM AREA
1-Soil 308-ACM Area

The game plan for tomorrow is to complete 307S, ~~mobe~~ drums to ~~on~~ side of road for later removal. Then decon rig and pick up casing for 308B and mobe there.

BAD

Location No Billerica, MA Date 1/31/06

Project / Client IHP / EPA

0800 Drilling underway for MW-307S
Weather overcast 100% and drizzly. T's low-mid 30's

0905 ~~Began~~ drum removal at 307 cluster -
Slightly over ½ hour drum management.
Also begin decon. mobe
Actual decon ~940 at pad.

1100 Leave decon pad 1105 setting up water for 308B

1140 Still monkying around moving drums. Only 1 drum management other 3 their using for water storage.

1200-1230 Lunch for Drillers

1230 Returned / began drilling MW-308B.

1430 Drilling difficult - Buried material holding up downward movement. very bouncy

1525 CAL V PID 2245
0 = 0.5 ppm 100 = 89.5 ppm

Location Date 1/31/06

Project / Client

SUMMARY 1/31/06

Drilling proceeded w/o much issue. MW-307S was completed early AM (excepting concrete pad). Rig was moved to decon pad and along w/ 2 full drums to drum storage. Decon was completed and mobe to 308B was done.

Drilling began just after ~~noon~~ noon at 308B. ACM / peat / plastic / metal all came up in first 20 feet. Pounding casing had the effect of shaking the entire area like being on a large boulder. Sand bags on OW-7/8 were jumping while casing was being driven. Not sure if past obstruction yet - at 20 ft.

( ) BAD

Location No. Billerica, MA Date 2/1/06

Project / Client IHP / EPA

NOTES FOR KEVIN HANTEN (MSE)

MW-308B was started yesterday (1/31/06) and drilled to a depth of 20 ft. Samples were ~~collected~~ NOT collected at 15 ft (MW 24-26 ft) for upper sample. The deep sample should be collected at 35 ~~36~~ ft (deep sample). Give or take a foot. Bedrock coring up to 30 ft. I've set the full rock boxes under the heating unit at the trailer.

I will be back Thursday (2/2/06). We can decide then who'll set on MW-308B and who develops MW-307's.

For Next Week @ the MW-301 series wells. These wells are replacing the MW-201 series wells. The 201 Wells were originally on top of the embankment (~5 ft higher than where the 301 wells ~~were~~ are placed) Keeping that in mind.

201S	was screened	6.9 - 16.9
201D	"	"	33.4 - 43.4
201B	"	"	57.1 - 77.1

Location Date 2/1/06

Project / Client

So you might expect these depths to be ~5 ft shallower. The shallow well (301S) should cross the water table (possibly all screen - no riser - to surface). 301D should set on top of till or bedrock if no till. 301B of course in bedrock - 20 ft screen not 10 ft.

SAMPLES FOR 301 Series

① MW-301S: 9-11 ft Sample and MS/MSD (4 bottles)

② MW-301D: 39-41 ft

Work Summary:

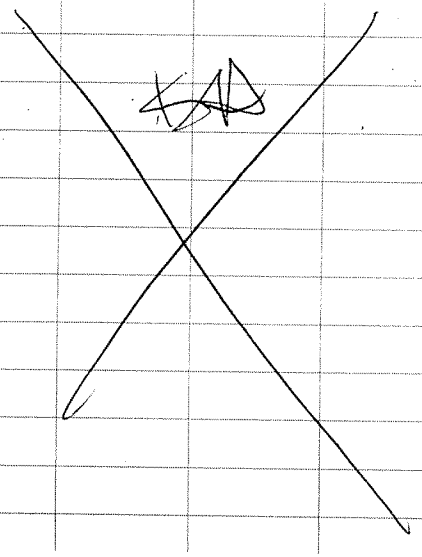
- Arrive @ 7:10 at site
- Weather: Mostly Cloudy, 30's
- 7:45 → Resume drilling at well MW-308B
- 9:00: Collect lab sample @ 34 ft and label as MW308B, 34-36 ft
- Attempted lab sample @ 24', but spoon empty except wash

Location _____ Date 2/1/06

Project / Client _____

- Encounter rock @ 46 ft. in MW-308B. Roller bit to 49 ft using 4 7/8" roller bit. Set 4" steel perm. casing @ 47.8'. Flush hole w/ clean water in prep for coring. Contain removed spoils in drum (double lined) and seal. Clean up work area.

3:00 Field team off site.



Location No. Billerica, MA Date 2/2/06

Project / Client IHP / EPA

0700
Weather T-Low 30's F, no wind overcast. Supposed to warm up during the day.

1332 MW308B completed around 1130 hours. Ready picked up and about ready to move.
BR-46 Casing to 48 core 70

MW-307 cluster - all wells developed more into 308B when driller moves out

1345 Drill Rig left site. Back to decon pad.

1430 Drillers already off site. No decon. 308B 72.8 ft screen 52-72 ft.

SUMMARY 2/2/06

Kevin Hanten & Bill Abrahams-Dermitt on site for ME. KH set up MW-308B w/ drillers to do rock coring. They accomplished 25 ft of coring and set

Location _____ Date 2/2/06

Project / Client _____

MW-308B at a depth of 52-72 ft screened. After which the drill rig was moved to decon pad and final drum of soil cuttings placed w/ others BAD. Went to develop the MW-307 cluster and had finished the shallow well, which had a strong oily odor and sheen, when Scott (GEI) arrived to run ~~the~~ development. Scott developed the deep and bedrock wells while BAD caught up on paperwork and took WQ readings. Wells all cleaned up fine. Only shallow seemed obviously contaminated.

Scott was also there to fix the ignition switch on the bomb. So. BAD moved to 308B and developed that well for 2hrs or ~ 240 gals. A/c a lot of water was lost at this location may pump well more tomorrow (unattended).

Location No. Billerica, MA Date 2/3/06

Project / Client 1HP / EPA

AM — 0700

Drilling getting decon underway

Weather:

RAINING, 100% overcast Tm 35-40°F

No winds. Site conditions continue to soften. No driving out on ACM LF today or likely in next week.

1236: Rain has made life miserable. Managed to get set up at 301 cluster but promptly ran into some crowd. Driller not convinced that it wasn't a utility. Made driller dig to 3½ ft to confirm. Found obstruction was wood. Continued drilling.

Also called Mike DAVIS (Guilford Rail) to have a look. He too was convinced no utility.

Also, had to move 301 wells due to rain and filling detention ponds.

Location _____ Date 2/3/06

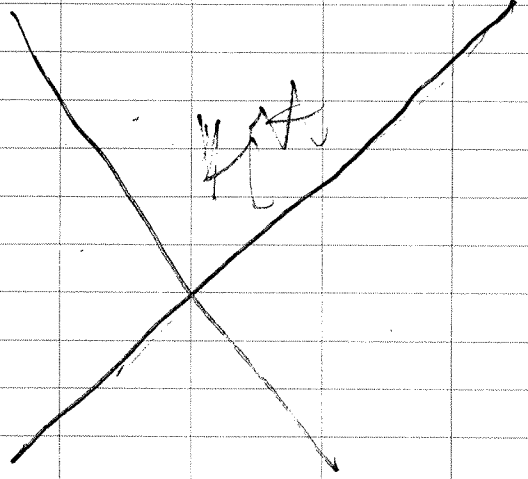
Project / Client _____

New 301 cluster is near original 201 cluster along top of berm on back fence line. more centered to back of storage facility.

2:20: Drilled to 20' @ 301B Encounter brown till @ ± 12½ ft and finish augering till @ 20'.

2:30: Drillers move off rig

3:30: Pulled pump from 301B Move off site



Location _____ Date 2/6/06

Project / Client _____

07:00: Field crew arrives on site

- Resume drilling @ MW-301B Drill through very dense till from 21' to 52'. Encounter rock @ 52 ft and roller bit rock socket to 54 ft. Insert 4" perm casing then 5" casing and open hole (below 19'). Have great difficulty installing 4" casing - need to apply use 300# hammer to set. Presently bottom of casing is @ 48½ ft. Will set casing tomorrow am.

(15:05)
3:05: Drillers move off site. KH returns to office for data analysis and paperwork.

Weather: Variable w/ snow squalls, Mid to low 30's w/ occ sun

(16:00)
4:00: Move off site. KH

Location IHF OU4 Date 2/7

Project / Client

07:00: Arrive @ field trailer

- Drive permanent 4" steel casing to 51.5 ft below grade (Top of rock Depth is actually 52' and rock socket is 54½') Cored from 54½' to bottom of borehole (78') using an HQ barrel. Install well w/ screen from 77 to 57 feet. After emplacing sand pack, place bent seal from above sand pack (54') to underside perm casing.
- Also drill and install MW301S. Collect sample (only one) from 9'-11' for TOC and grain size. Sample ind. MS/MSD. Placed in frig. after mixing and separating into jars

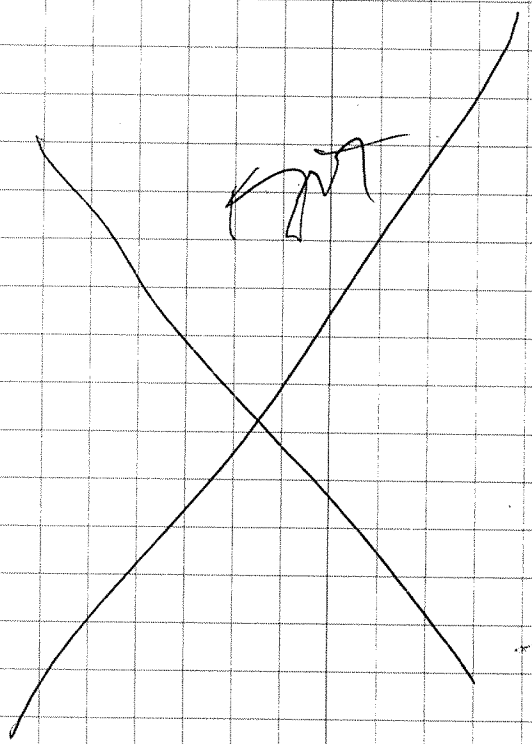
Weather: Sunny, windy, low 30s

Location Date

Project / Client

(15:00)
3:00: Drillers moved off site.

4:00: M&E moves off site.



Location IHP OU4 Date 2/8

Project / Client EPA REG 1

07:05: Arrive on site.

- Set up on MW301D. Rig shuts down and won't restart. Very low on oil - may have ceased. Mechanic came out to site but unable to repair. Need to demobe rig and repair offsite. A replacement to come on Friday to finish hole.
- Spent downtime developing MW301S & B.
- Drillers and helper spent some of downtime installing concrete pads @ incomplete wells
- Weather - Sunny, low 30s

16:00: Mobe off site.

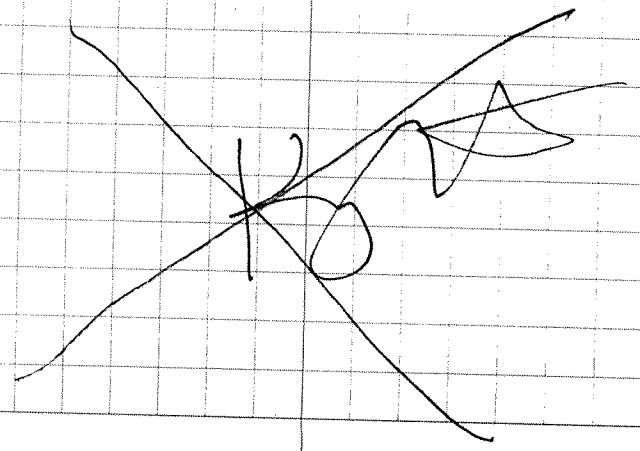
Location IHP OU4 Date 2/11

Project / Client EPA REG 1

7:15: Arrive on site.

- Geologic mobed replacement rig to finish drilling MW301D
- Drill to 44' w/ 4" casing & and set well @ 43' w/ 15' of screen.
- Geologic demobs equipt. and decommissions decon pad.
- Collect sample for lab from the 34' - 36' interval
- Package samples for lab.

4:00: Mobe off site



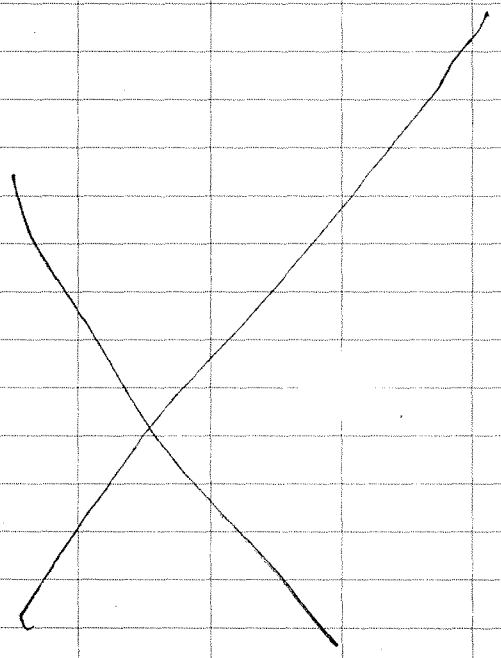
Location IHP OU#4 Date 2/13

Project / Client EPA Regs

12:40 : Arrive on site

- Spend afternoon dev'g MW 301D. Remove 35g.
- Demob rental eqpt.

4:30: Mobe off site.



Location No. Billerica, MA Date 2/20/06

Project / Client IHP / EPA

GW Sampling Event - 20 wells

0645 - Arr BAD - open gates.

0700 field team arrives

Stan Hatfield, Nathan Henderson, Joel Meunier,

WEATHER:

T~ 30°C Wind 0-3mph

Slightly hazy sky - sunny, humid.

0930 Gearing up to go out.

SUMMARY

Wells completed GW Sampling:

MW-202S, MW-202D, MW-202B

MW-302S, MW-303S.

After mobing and setting up on the wells it was discovered that Stan (303S) and Joel (202S) both had bad pumps (gas leaking into discharge line). Both pumps were replaced. Nathan (202D) had no problems but Bill (202B) found that the 1.5" bladder pump could NOT be inserted

Location _____ Date 2/20/06

Project / Client _____

past 20 ft in 202B. It was therefore necessary to use the microbladder pump on this well.

Pumping @ all wells except 202B was limited by max low flow rates and turbidity (esp. higher when well pumped faster). 202B was limited due to drawdown (which was not excessive ~0.45 ft).

Despite pump issues on 3025 (Bill) was also sampled completing 5 wells (1/4 total).

For tommorrow Bill will be off site. Bottles for wells will set up this night.

Plan Tomorrow is 304 & 305 wells w/ 306 as back-up.

BSD

Location _____ Date 2/21/06

Project / Client _____

SUMMARY

Bill A-D not on site but in contact w/ field team.

Despite huge volumes of QC at 304 & 305 wells, all 5 wells (304 S, D, B and 305 S, D) were completed.

Liz working hard on shipping. All QC completed except for EB-01 equipment blank.

No problems apparently w/ pumps.

STAN TO ADD to back

BSD

Location Billerica, MA Date 2/21/06

Project / Client IHP

(0630)
Stan Hatfield on site
Cold, clear
Stan - pumps
Nathan H - YSI cal.
Joel M. - trob, PID, 2 teams
James Athey - YSI cal
Elizabeth DeCola will arrive ≈ 12 N
to package sample.
Stan ran for coffee ≈ 10 AM
trailer Modulese/Scott arrives to fix heat.
(1000) Mob everyone to 304 cluster
joel 304 D
Stan 304 S
James 304 B
(1030) Mob Nathan w/ Stan to 305 D
which has lots of QC.

(1200) Stan sample 304 S
Liz arrives
Scott still on site fixing trailer
(1330) Mob Athey to 305 S
shuttle samples to Liz.

[signature] [signature] 2/21/6

Location Billerica MA Date 2/21/06

Project / Client IHP

(1400) Couldn't find bottles for 305 S
Nathan conf call for Holyoke.
(1430) Demob Joel
(1500) Mob to PZ 115 in B+M landfill
lowered 1.5" tef bailer about 6'
and filled it ≈ 9": mostly water,
end of bailer outside and in coated
with thick, black, viscous oil, no
smell. Globules of oil suspended in
baile and stuck to inside of baile
at entire length. Scraped oil of
outside of butt of baile into vial.
Redipped baile to get more and
got v. little. Call Andy Schuta
to discuss vol. of oil. - "okay to
ship w/ 2-3 mls. of product."
Save 2 liters of oily water.
Oil appeared as "globule" in bucket
and bailer. → Only 1/4" oil on surface
in well.
1600 Demob at trailer:
Stan - pumps
Athey - WLI, cable decoured
Nathan + Athey - YSI, Joel PID + pack
[signature] 2/21/6

Location Billerica, MA Date 2/22/06

Project / Client IHP / EPA

0645: Stan & Bill on-site

0700: Meunier / Athey / Henderson

Weather:

Clear/sunny T~35F going up to 40-42. Wind 0-5 mph

Summary:

Wells sampled 2/22/06 were MW-307S, MW-307D, MW-307B, OW-7, OW-8, MW-308B. Stan Hatfield, Nathan Henderson, and Joel Meunier went to the 307 cluster. JM had trouble initially w/ pump and gas infiltration, SH rectified the situation. Wells 307D and 307B were both quite silty and took a long time to clear up. Eventually all wells cleared. 307S (JM) had fewest issues after the pump was fixed. 307D (NH) had problems w/ ORP values jumping around after 2 hours of pumping the ORP

Location Date 2/22/06

Project / Client

had not settled down, though they seemed to be in the same ranges. All other values being steady, I decided to have NH go ahead and sample. ORP readings are sometimes finicky and often subject to change when pumped through a flow cell. Also DO appeared to be steady. (SH) sampled 307B w/ less apparent issues.

JA and BD sampled OW-7 and OW-8. BAD finished filtrx and began MW-308B. OW7 & OW8 both produced plenty of relatively clear water immediately, so they were both sampled quickly. No issues were encountered while sampling OW7 & 8. MW-308B was slightly more turbid, but did eventually clear and stabilize. BAD completed 308B while the rest of the field team retired to the trailer to clean up, do calcheck decon and prepare for Thursday.

Abrahams-Demattie 2/23/06

Location Billerica, MA Date 2/23/06

Project / Client IHP / EPA

0630 Open trailer and begin prep. work for final dry sampling. Weather 100% overcast, T ~ 30's MID, Wind 5-10 mph Expect some precip during afternoon.

Summary:

Field team consisted of James Athey, Stan Hatfield and Bill Abrahams-Demette. Liz Decola came out in the afternoon to supply COC and pack/ship support. Wells sampled were MW-301S, MW-301D, MW-301B, and MW-306S. JA sampled 301S and 306S. Both wells proved to have sufficient water and cleared up quickly. No problems encountered.

301B - SH - ~~encoded~~ had drawdown problems. The ~~drown~~ drawdown was ~2 ft, but stabilized there ~~while~~ when stan back the pump off

Location Date 2/23/06

Project / Client

to 60 ml/min ±. 301B stabilized after an hour or so except for turbidity. After 3 hours it appeared turbidity was not likely to drop at the low flow rate and pumping was becoming more difficult due to sediment in the pump check balls. SH sampled at this point. Metals were not filtered because analyses were for total metals. ~~they~~ The sample was preserved. 301D (BMD) had similar issues as 301B except it was siltier. Drawdown in ~~306~~ 301D was less (~1.7 ft) at first as long as the flow rate stayed around 60 ml/min, however, because of the higher turbidity the silting of the pump balls got steadily worse causing water to drain back between purge cycles. Inc. the pump push got water flowing forward again, but at a higher flow rate. The higher flow

Location _____ Date 2/23/06

Project / Client _____

rate ~~x~~ caused the water level to start dropping again. At this point turbidity was in the 600-700 range. Decided to start sampling at this point due to drawdown. The higher flow rate did start to clear some of the turbidity so that by the time metals were sampled Turb. had dropped to 330 NTU, but the WL also dropped another ~1.25 ft.

SH & BAD returned to trailer while JA finished up his 2nd well (306s). LD began the packaging while SH began cal checks. BAD set up to run an Equipment Blank Sample upon JA rtn. Demob of equipment to be returned was stepped up. Coolers of samples were sent to be shipped and a initial demobe from the site started.

Bill Abrahams-Demith 2/23/06

Location _____ Date 2/24/06

Project / Client _____

IHP SAMPLE QC

Round 2

Trip blanks and equipment blank VOA's Environmental grade water Lot # 9105110

DI for decon and EB (non-voa) samples Lot # 0005-1035-BW 2/20/06

SIDE NOTE:

John Collins of Guilford rail was called daily w/ itinerary CRS. Was also called on days when sampling was taking place on their property.

Location Billerica, MA Date 3/31/06

Project / Client IHP / EPA

Bill/Jessica Lauri/Paul Stan/CINDY
A' Dematte Strauss O'Connor Dombrowski Hatfield Castlebury

0645: At Site All others by 0730
Weather:
T~40 F No wind No Clouds
Meet at Staging area Sort equipment, make plans.
P-2 to be fixed still.

0815: Off to Wells.

1025: White at SG 307 Team III noticed ~6-8 drums, several of which appeared to be leaking a tar like substance. One drum was upright and open.

1230: Off Pond St @ SG 306 some-one on opposite side of Canal is excavating into the Hill, creating an alcove using a sheet of plywood.

1340 Tree down in road to B&M Landfill. Called in Chainsaw Stan to clear tree.

Location Date 3/31/06

Project / Client

1510 PZ115 - No NAPLE except for film. Not measurable.

1655 TEAM III Complete
Call ~~earlier earlier~~ earlier from Laurie O.
P-3 destroyed, may be salvagable. Earlier on Still Team 1 locked out of CRS, used gate key in mail box to get in. Asked her to call CRS and let them know.

1715 P-3 destroyed
looks as if plowed
Well filled to 2.9 ft bgs
Possible to reclaim w/ work.

1600 Water level survey complete including as built measurements for new wells and old refurbished wells. Need to add spincraft wells to survey list esp. since P-3 destroyed.

Location Billerica, MA Date 4/26/06

Project / Client IHP [redacted]

OFC 0730 Site 0830 Bryant 0840
Craig Vancura on site for GPS portion. Brian also on site for part ~~date~~ day.

0900 Setting up base station by IHP compound.
Craigs Cell 978-395-1689
OFC 617-248-0300 x2129
Gary Hamilton " x2111

1000 Person walking out in vicinity of MW-305 wells. Disappeared before we got there.

1330 Having on/off problems w/ GPS everytime we move in vehicle. will try turn unit off to avoid problem

301D 1025 B1026 S 1024

PZ 102 1028

203B TOC/PVC 0.16 203D 0.16 203S = 0.245

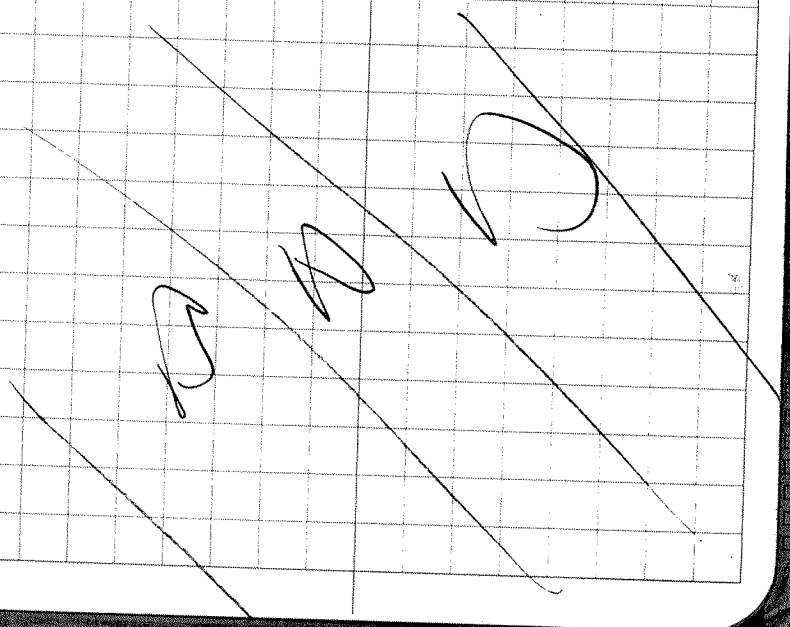
Location Date 4/26/06

Project / Client SURVEY

Surveyed all new points w/ GPS equipment plus several known pts for ref.
MW-301 → MW-308
OW 7 & 8
MW-202 series
MW-211D, MW-212B
SG 301-310
P-2 - Need also to level CW 32-33 @ SPINCRAFT

Cleared up pen area
Depart 1715

PAID



Location Billerica, MA Date 4/28/06

Project / Client IHP / EPA Survey

Am 0700

Ran up to SG 306, 305 for measures on Staff gauges.

Returned to Pond St. Gate.

0745 Bryant Assoc. ARV.

Craig & Brian

Got everyone oriented and went to measure other Staff Gauges.

1100 Craig & Brian meeting modest progress. Breaking for lunch soon.

1600 Loaded sludgehaul recycling area and few nearby wells. P/U 304's.

Staff Gauge Conversions

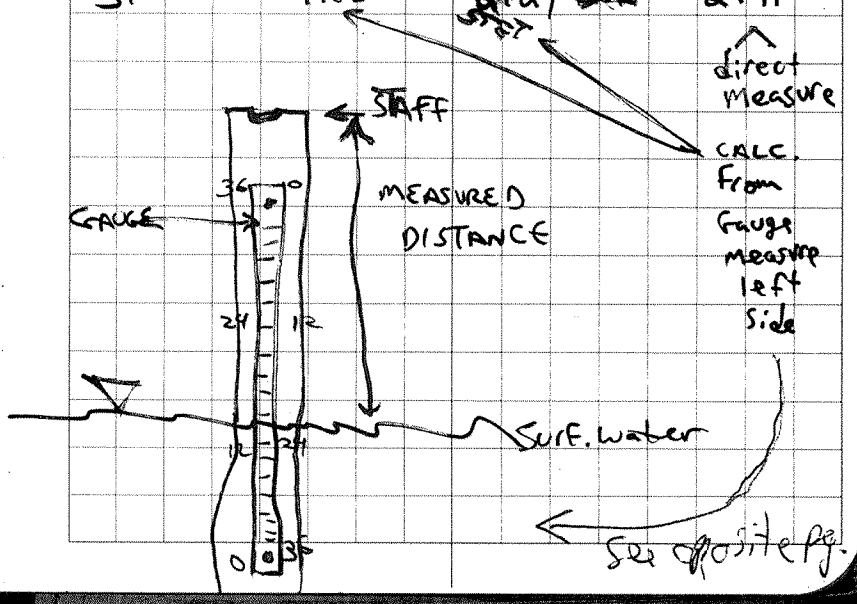
	3/15/06 Left Ruler	3/31/06 Left Ruler	4/28/06 Left Ruler / DTW to Staff
SG 301	18 7/8	16 5/8"	17" / 2.915'
SG 302	21 7/8	12 7/8"	20 1/2" / 3.82'
SG 303	13	7 13/16" (6 13/16)	10 3/16" / 2.462'
SG 304	14 1/4	12 3/4"	14 9/16" / 3.10'
SG 305	9 15/16	8 7/8"	9 7/8" / 2.495'
SG 306	17	20 7/16"	24 1/16" / 1.305'
SG 307	14 1/8	12 3/4"	16 3/4" / 0.895'
SG 308	7 9/16	6 13/16"	7 1/8" / 3.23'
SG 309	9 11/16	16 7/8"	17 11/16" / 2.345'
SG 310	17 3/4	12 11/16"	11" / 2.41'

Location Date 4/28/06

Project / Client

Staff Gauge Measurment Round.

SG#	Depth to Water from top Staff 3/15/06	3/31/06	4/28/06
301	2.76	~~3.81~~ 2.95	2.915'
302	3.71	4.46	3.82'
303	2.23	2.66	2.462'
304	3.07	3.25	3.10'
305	2.49	2.58	2.495'
306	1.89	1.61	1.305'
307	1.11	1.23	0.895'
308	3.19	~~3.93~~ 3.26	3.23'
309	3.01	~~3.76~~ 2.41	2.345'
310	1.85	~~2.27~~ ~~2.20~~	2.41'



Location Billerica, MA Date 5/2/06

Project / Client IHP / EPA - SURVEY

0715 At ~~sy~~ site Heard from Craig (Bryant Assoc.) Stuck in traffic on 128 will be here around 0800.

0750 Craig arrives.

1030 Successfully navigated out to pond St. via the Gun club currently trying to work in shot to SG305 IN MARSH out past MW01.

Seemingly a lot of train fair today. Using added caution called John Collins @ 0930 to see if he could give us a schedule for freight trains today.

Crane Company just arrived at Gun club entrance to tracks looks as if they maybe replacing a rail somewhere.

1200 Survey out to SG 305 was successful but did catch some attention

Location Date 5/2/06

Project / Client

from AMTRAK, who were out fixing rail ~~tie~~ lines ~1000 feet up track. Discussion w/ 2 workers seemed that there were not thrilled but thought we were being careful. A third person who came out after we were pulling out read us the riot act. At that point we were shooting 1/2 way up the bridge embankment while shooting across tracks from one end of bridge to other end of bridge (crossing over bridge and not tracks) 2 police stopped by one undercover one Billerica. Asked what we were up to and when we'll be done. Told them about IHP and said we were already done and heading down pond St. At SG 6 middlesex canal 2 other people checking out beavers stopped by.

Location _____ Date 5/2/06

Project / Client _____

John Collins was also called prior to going out there when he said we'd be ok to make the short run and after to let him know of the events

1330 Called it quits for the day. Will recommence ~~and~~ on Thursday 0730 to finish loop from pond.

Finish day back at ofc.

BAD

Location _____ Date 5/4/06

Project / Client _____

0715 Call John Collins.

FINAL DAY of SURVEY.

Pick up @ Pond Street and worked thru woods to 307 cluster

0955 Picking up 305/306/P18

1200. Back To 304 AREA.

few more wells to tie in before Brian needs to leave. Craig & I need to review to confirm all points covered.

1440 Reviewed all points w/Craig. Discovered several mis-named - corrected, discovered 1 missing SG-307. Picked up point. Also picked up 7-8 Existing points to tie in survey. Craig will run loops and #s today. Should confirm closed loops. If not - MONDAY to close up. While settling up, Billerica Cop ON DIRTBIKE came by presumably looking for ATVs.

Location _____ Date 5/9/06

Project / Client _____

Survey Corrections

0715 Am @ site, surveys arrive 0730.

0745 Begin series of checks at R/R bridge on Pond St. by Schaeffer Lf. Call John Collins - Guilford Rail left message about Work. Lent Orange vest to surveyor and calculator.

0830 Confirmed direction of error Brought out total station and surveyed in SG 305 then went back to Level station and shot down road.

1030 Determined the erroneous point. Used several Calcs to check.

1045 off Site.

Surveyors: Brigant Assoc. Craig and Brian.

MJE - B. Abrahams-Dimitri

Location _____ Date _____

Project / Client _____

APPENDIX A.3

Monitoring Well Sampling Worksheets

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-206S Date Sampled: 12/13/05 Arrival Time: 13:15 Depart. Time: 16:20

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: _____ inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 7.88 ft Depth of water from T.O.PVC 7.67 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 13:50 End 15:26

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1455	7.90	6.37	292.2	751	9.21	2.60	3.1	120
Final Reading	15:24	7.90	5.85	300.7	747	9.81	0.86	1.1	120

Sample Collection: Time Start: 15:30 End: 16:00 Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	(floaters) iron	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? _____ Floating or Sinking or Other? Iron Flock

Comments Iron flock in initial purge. Waited to connect flow thru cell until iron cleared up. (Set up equip at MW-206D in meantime)
YSI #2

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park out Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-206S Date Sampled: 12/13/05

		±0.1	±10	± 3%	± 3%	±10%	<5
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
15:00	7.90	6.06	306.1	748	9.52	1.16	2.9	120
15:05	7.90	6.01	306.2	750	9.47	1.00	2.5	120
15:10	7.90	5.90	305.4	746	9.66	0.98	1.7	120
15:13	7.90	5.82	304.0	744	9.70	1.05	2.0	120
15:16	7.90	5.82	301.9	744	9.70	0.82	1.3	120
15:21	7.90	5.79	300.8	745	9.82	0.88	1.1	120
15:24	7.90	5.85	300.7	747	9.81	0.86	1.1	120

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-206D Date Sampled: 12/13/05 Arrival Time: 1315 Depart. Time: ~~1415~~ 1405

Well secure upon arrival? (Yes) No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

~~Depth of well from T.O.C.~~ _____ ft

Depth of water from T.O.C. PVC. 78.94 ft

Feet of standing water _____ ft

Volume of standing water _____ gal

Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft

Volume of standing water _____ gal

Purging Method portable bladder Purge: Time Start 1450 End 1545

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1455	7.95	6.12	487.8	788	10.04	3.23	1.85	76 x 4 304
Final Reading	1542	7.95	5.79	519.2	751	10.64	1.98	0.97	320

Sample Collection: Time Start: 1545 End: ~~1605~~ 1405 Samples Preserved: (Yes) No HCl/HNO_3

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments clear at first. 4 gpm; 10/5 ref/disch. Test papers neg.

YSI - 3

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: S Hatfield

Well ID: mw-206 D Date Sampled: 12/13/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1455	7.95	6.12	487.8	788	10.04	3.23	~~1.85~~	304
1500	7.95	5.96	545	780	10.51	2.44	1.09	> 278.4 312
1515	7.95	585	547	757	10.62	2.46	0.99	320
1527	7.95	5.84	531.8	754	10.58	2.56	~~0.62~~ 1.04	320
1532	7.95	5.83	525.7	753	10.53	2.41	1.0	320
1537	7.95	5.81	521.3	753	10.66	2.20	1.01	320
1542	7.95	5.79	519.2	751	10.64	1.98	0.97	320
1545	Sample Here							

back to truck + phone calls

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-207B Date Sampled: 12-13-05 Arrival Time: 1324 Depart. Time: 17:30

Well secure upon arrival? (Yes) No PID Readings (ppm) 0.0 Breathing Zone 0.0 Well Headspace

YSI #1 Turb # 4815-5203

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. [illegible] ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 4.8 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 1415 End 1542

	Time	Water Level (feet)	pH	ORP (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1407	4.9	6.71	402.1	20934	8.5	4.53	162	~~120~~
Final Reading	1540	4.9	6.15	386	23304	8.62	0.44	6.26	180

Sample Collection: Time Start: 1545 End: 16:30 Samples Preserved: (Yes) No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? No Length? _____ Floating or Sinking or Other? _____

Comments _____

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ext Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-207 B Date Sampled: 12-13-05

Time (military)	Water Level (feet) TOC	pH	ORP (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1436	4.9	6.26	402	22777	7.76	1.19	76.7	135
1445	4.9	6.2	399	22840	8.79	1.26	39.8	165
1451	4.9	6.19	396.3	23139	9.09	1.11	23.4	180
1506	4.9	6.18	392.6	23220	9.17	0.9	13.1	180
1505	4.9	6.17	390	23270	8.93	0.82	13.3	180
1513	4.9	6.15	387	23249	8.76	0.67	11.8	180
1519	4.9	6.14	386.9	23255	8.59	0.61	7.38	180
1525	4.9	6.14	385.2	23127	8.60	0.56	7.59	180
1530	4.9	6.14	385.3	23151	8.56	0.50	6.81	180
1540	4.9	6.15	386	23304	8.62	0.44	6.26	180

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: BAD

Well ID: OW-25 Date Sampled: 12/13/05 Arrival Time: 1350 Depart. Time: 1730

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. 60 ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.PVC MP 4.77 ft Depth of water from T.O.PVC _____ ft

Feet of standing water 55 ft Feet of standing water _____ ft

Volume of standing water ~9 gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 1455 End 1600

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1500	4.78	6.87	384.2	15710	9.53	4.60	65	178
Final Reading	1557	4.78	6.89	310	20373	9.24	0.68	13	176

Sample Collection: Time Start: 1600 End: 1615 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? NO Floating or Sinking or Other? NO

Comments Neg Pot. for Lead Ac. Papers
Had to keep Flow rate up to prevent freezing.
W/drop rate Turb. dropped.

YSI #5 Turb 0103

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: BAD

Well ID: OW-25 Date Sampled: 12/13/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1505	4.78	6.97	337.3	20830	9.67	1.53	50.4	108
~~152~~ 1515	4.78	6.96	339.3	21296	8.16	1.05	43.6	114
1520	4.78	6.90	339.8	21460	7.37	1.03	28.7	228
1532	4.78	6.82	331.8	21302	9.32	0.72	31.2	208
1538	4.78	6.90	322	20.436	9.40	0.66	32.3	216
~~1454~~ 1545	4.78	6.90	316.7	20168	9.50	0.64	30.3	208
1552	4.78	6.90	314.6	20222	9.52	0.63	20	196
1557	4.78	6.89	310	20373	9.24	0.68	13	176

Had to inc. flow to prevent freeze.

0.1 ±10 3% 3% 10% <5 10%

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 4
TURB: 3504

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: OW-26 Date Sampled: 12/13/05 Arrival Time: 13:30 Depart. Time: 17:30

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. ~~4.92~~ 40' ft Depth of well from T.O.PVC. 4.92 ft

Depth of water from T.O.C. 35 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water 5.6 gal Volume of standing water - gal

Purging Method BLADDAR Purge: Time Start 14:30 End 16:00

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	14:35	4.95	8.53	267.3	795	9.94	2.35	~~660~~ 8.19	160
Final Reading	16:00	4.96	8.65	81.8	828	9.66	0.32	7.0	180

Sample Collection: Time Start: 16:10 End: 16:45 Samples Preserved (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments Test papers negative

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: OW-26 Date Sampled: 12/13/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
14:47	4.95	8.62	209.3	808	10.01	1.08	7.94	185
14:55	4.95	8.62	195.8	811	9.83	0.88	7.12	180
15:03	4.96	8.63	176.6	817	9.72	0.78	6.20	180
15:15	4.96	8.65	155.1	820	9.74	1.03	6.10	180
15:25	4.96	8.66	138.8	819	9.44	0.64	5.62	180
15:35	4.96	8.64	117.8	823	9.72	0.44	6.05	180
15:42	4.96	8.64	110.4	825	9.69	0.41	6.23	180
15:48	4.96	8.65	97.1	827	9.69	0.38	6.40	180
15:54	4.96	8.65	89.2	828	9.62	0.35	6.70	180
16:00	4.96	8.65	81.8	828	9.66	0.32	7.0	180
		0.1	± 10mV	3%	3%	10%	< 5 NTU	

MW-1 purge ~1L
MW-1A ~0
MW-1B -

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: BAD

Well ID: MW-01C Date Sampled: 12/14/05 Arrival Time: 1200 Depart. Time: 15:10

Well secure upon arrival? (Yes) / No PID Readings (ppm) NS (Breathing Zone) NS (Well Headspace)

Well Diameter: 1.5 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. ~~3.13~~ 14 ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 3.13 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method MICRO BLADDER Purge: Time Start 1317 End 1400

YSI #5
2020 #0103

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1322	3.22	6.25	259	230	7.58	2.80	16	120
Final Reading	1355	3.22	5.74	292	193	9.34	0.42	1.57	124

Sample Collection: Time Start: 1400 End: 1440 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	few red flakes
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? None Length? NA Floating or Sinking or Other? NA

Comments Well pump slipped ~3" while maneuvering to collect samples

Neg on K-iodide and Pb Acetate

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: BAD

Well ID: MW-01C Date Sampled: 12/14/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1327	3.22	5.85	272.8	211	8.59	1.01	~~124~~ 10	~~10~~ 124
1335	3.22	5.76	282.4	196	9.20	0.58	3.40	124
1340	3.22	5.76	286.6	194	9.22	0.51	3.51	124
1345	3.22	5.75	288.1	193	9.34	0.46	1.90	124
1350	3.22	5.74	290.0	192	9.41	0.44	2.20	124
1355	3.22	5.74	292	193	9.34	0.42	1.57	124
		±0.1	10 MV	~~10%~~ 3%	3%	~~10%~~ 10%	<5/10%	

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW-49 Date Sampled: 12-14-05 Arrival Time: 1200 Depart. Time: 1530

YSI #3 Turb meter = 4815-5203

Well secure upon arrival? (Yes) No PID Readings (ppm) Not Measured (Breathing Zone) _____ (Well Headspace)

Well Diameter: 1.5 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. 4.15 ft	Depth of well from T.O.PVC. _____ ft
Depth of water from T.O.C. 4.15 ft	Depth of water from T.O.PVC _____ ft
Feet of standing water _____ ft	Feet of standing water _____ ft
Volume of standing water _____ gal	Volume of standing water _____ gal

Purging Method bladder (small) Purge: Time Start 1234 End 1355

	Time	Water Level (feet)	pH	~~ORP~~ (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	~~1240~~ 1235	4.15	6.97	197.5	675	7.61	8.00	7.5	140
Final Reading	1354	4.1	6.38	54.9	658	9.10	1.16	2.30	150

Sample Collection: Time Start: 14:00 End: 14:30 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	none	strong sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? No Length? _____ Floating or Sinking or Other? _____

Comments _____

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW-49 Date Sampled: 12/14/05

508 265 7494

Time (military)	Water Level (feet)	pH	ORP ~~Eh~~ (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1245	4.1	6.59	119.7	621	8.47	4.25	10.0	~~150~~ 140
1306	4.1	6.54	80.1	615	9.32	3.91	6.2	144
1306	4.1	6.52	79.5	625	9.11	2.82	5.1	144
1312	4.1	6.47	72.6	636	9.03	2.26	4.7	150
1321	4.1	6.47	65.6	647	8.95	1.80	4.1	150
1327	4.1	6.43	63.0	650	9.19	1.53	3.3	150
1335	4.1	6.40	59.0	656	9.26	1.44	3.53	150
1340	4.1	6.40	57.2	657	9.41	1.30	2.71	150
1349	4.1	6.41	54.6	658	9.18	1.23	2.67	150
1354	4.1	6.38	54.9	658	9.10	1.16	2.30	150

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: OW-50 Date Sampled: 12/14/05 Arrival Time: 12:00 Depart. Time: 15:15

Well secure upon arrival? (Yes) / No PID Readings (ppm) Not Measured (Breathing Zone) (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 3.69 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 12:40 End 14:20

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	13:07	3.90	6.26	254.3	307	10.72	1.28	310	300
Final Reading	14:14	3.90	6.15	182.3	328	9.78	0.63	7.41	230

Sample Collection: Time Start: 14:30 End: 14:45 Samples Preserved (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red black	
Describe appearance:	(slightly turbid)	silty	sand	clay	(floaters)	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? - Floating or Sinking or Other? -

Comments YSI #4 Turb - 4720-4703
increased pressure to try + blow out frozen water line - resulted in elevated turbidity
Turbidity spigot froze. had to collect turbidity aliquot after flow thru cell.

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ext Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: OW-5D Date Sampled: 12/14/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
13:14	3.90	6.19	226.1	318	10.08	0.96	210	140
13:22	3.90	6.16	210.1	320	9.92	0.98	NM	NM
13:34	3.90	6.14	186.6	324	9.90	0.65	32	220
13:37	3.90	6.13	183.0	324	10.16	0.62	24	230
13:40	3.90	6.14	179.7	326	10.24	0.57	16.2	230
13:43	3.90	6.14	174.8	328	10.22	0.52	13.9	230
13:47	3.90	6.14	171.8	328	10.12	0.49	13.5	230
13:50	3.90	6.14	169.2	329	10.05	0.46	12	230
13:53	3.90	6.13	168.0	330	10.05	0.45	11	230
13:56	3.90	6.13	166.5	330	10.12	0.43	9.20	230
13:59	3.90	6.13	163.7	330	10.19	0.41	7.68	230
14:02	3.90	6.15	167.5	329	9.98	0.51	7.59	230
14:05	3.90	6.15	171.2	328	9.94	0.57	7.33	230
14:08	3.90	6.14	176.6	328	9.80	0.62	7.62	230
14:11	3.90	6.14	180.0	328	9.81	0.63	7.36	230
14:14	3.90	6.15	182.3	328	9.78	0.63	7.41	230

drained flow thru cell + silt.

prof. judgment = sample

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 1
TURB: 25104501

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: OW-51 Date Sampled: 12/14/05 Arrival Time: 12:00 Depart. Time: 15:30

Well secure upon arrival? (Yes) / No PID Readings (ppm) Not measured (Breathing Zone) _____ (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 3.5 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDAR Purge: Time Start 12:45 End 1352

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	12:50	3.32	6.50	66.6	521	10.82	0.96	~~2.38~~ 10.60	~~324~~
Final Reading	13:50	3.40	6.47	-3.7	511	10.98	0.27	3.36	190

Sample Collection: Time Start: 13:55 End: 14:15 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	~~brown~~	orange	red	Slightly yello
Describe appearance:	(turbid)	silty	sand	clay	(floaters)	sheen
	clear	multiphase	foaming	slimy	algae	Iron Flocs

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments Post purges negative

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: OW-5J Date Sampled: 12/14/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
13:00	3.36	6.46	57.7	522	11.18	0.58	5.89	240
13:08	3.38	6.45	43.8	510	10.52	0.51	6.45	170
13:16	3.40	6.46	26.7	509	10.69	0.37	4.48	190
13:25	3.40	6.46	13.6	513	10.91	0.35	3.78	190
13:31	3.40	6.46	8.6	514	10.83	0.34	4.25	190
13:37	3.40	6.47	1.9	512	11.31	0.31	2.98	190
13:43	3.40	6.48	-1.8	511	11.18	0.29	3.26	190
13:50	3.40	6.47	-3.7	511	10.98	0.27	3.36	190
			± 10 mv	± 3%	± 3%	10%	< 5 NTU	

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: OW-9 Date Sampled: 12/15/05 Arrival Time: 13:30 Depart. Time: 16:40

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: _____ inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 5.07 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 14:15 End 15:30

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	14:44	5.45	5.23	199.6	3822	10.42	2.97	19.0	140
Final Reading	15:26	5.40	4.93	245.5	3855	10.50	0.68	18.4	140

Sample Collection: Time Start: 15:35 End: ~~16:10~~ 16:10 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	none	(sulfide)	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? No Length? - Floating or Sinking or Other? -

Comments YSI #4
Turb 5203
Slightly turbid - would not stabilize down to 5 NTU

Refer to page _____ of the corresponding field log book.

781-246-7674

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ont Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: OW-9 Date Sampled: 12/15/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
15:05	~~5~~.40	4.97	243	~~243~~ 3833	10.60	0.93	19.1	150
15:08	5.40	4.96	244.2	3846	10.54	0.89	17.1	150
15:11	5.40	4.95	245.1	3847	10.57	0.84	14.1	140
15:14	5.40	4.94	245.4	3842	10.51	0.78	15.9	140
15:17	5.40	4.94	245.9	3838	10.49	0.76	14.7	140
15:20	5.40	4.93	245.8	3849	10.52	0.70	14.5	140
15:23	5.40	4.93	245.6	3849	10.52	0.69	15.8	140
15:26	5.40	4.93	245.5	3855	10.50	0.68	18.4	140

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: N. Henderson

Well ID: OW-10 Date Sampled: 12/15/05 Arrival Time: 13:30 Depart. Time: 16:45

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: _____ inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 5.8 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 1442 End ~~15:55~~ 16:05

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	15:00	5.80	4.95	126.7	724	11.12	1.67	25.5	215
Final Reading	16:00	5.80	4.92	197.0	694	11.47	0.97	9.48	240

Sample Collection: Time Start: 16:10 End: 16:30 Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	none	(sulfide)	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments YSI: #2
Turb: 4293-3504

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: N. Henderson

Well ID: OW-10 Date Sampled: 12/15/05

Time (military)	Water Level (feet)	pH	ORP ~~Eh~~ (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1507	5.8	4.95	150.0	716	11.3	1.20	14.2	240
1518	5.8	4.93	169.9	715	11.42	1.05	9.6	240
1525	5.8	4.94	176.6	700	11.44	0.93	7.6	200
1534	5.8	4.95	184.7	694	11.44	0.92	3.9	240
1541	5.8	4.91	192.1	760	11.47	0.91	4.15	240
1549	5.8	4.96	194.1	713	11.48	0.94	5.03	240
1554	5.8	4.96	196.0	701	11.47	0.90	4.16	250
1600	5.8	4.92	197.0	694	11.47	0.97	4.48	240

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW-12 Date Sampled: 12-15-05 Arrival Time: 830 Depart. Time: 16:30

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 4.3 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method bladder Purge: Time Start 1358 End 15:35

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	14:36	6.0	7.57	~~-770.1~~ -91.0	~~327~~ 326	~~8.18~~ 8.14	~~0.25~~ 0.81	~~7.0~~ 15.2	130
Final Reading	15:31	6.2	7.55	-770.1	327	8.18	0.25	7.5	84

Sample Collection: Time Start: 15:40 End: 16:00 Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	none	(sulfide)	fishy	musty	petroleum	
Describe color:	colorless	black	brown	(yellowish orange)	red	(black)
Describe appearance:	turbid	silty	sand	clay	(floaters)	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? No Length? — Floating or Sinking or Other? _____

Comments Black floaters making turbidity elevated.
YSI #4
Turb 4815-5203

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW-12 Date Sampled: 12-15-05

Time (military)	Water Level (feet)	pH	~~Eh~~ ORP (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1436	6.0	7.57	-91.0	326	8.14	0.81	15.2	130
1443	6.1	7.57	-111.0	326	8.62	0.54	17.0	84
1448	6.2	7.59	-120	326	8.47	0.45	8.09	84
1501	6.2	7.55	-146.8	325	8.36	0.31	10.65	84
1514	6.2	7.55	-157.0	326	8.15	0.28	11.0	84
1524	6.2	7.55	-167.2	328	8.15	0.27	11.0	84
1531	6.2	7.55	-170.1	327	8.18	0.25	7.5	84
~~1500~~	~~5.8~~							
1500	5.8	4.95	126.7	724	11.12	1.67	25.5	215
1507	5.8	4.95	150.0	716	11.3	1.20	14.2	240
1518	5.8	4.93	169.9	705	11.42	1.05	9.6	240
1525	5.8	4.94	176.6	700	11.44	0.93	~~200~~ 7.6	200
1534	5.8	4.95	184.7	694	11.44	0.92	3.9	240

these readings are for OW-10

we had no sheet to record readings on, but then obtained one.

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 2
TURB 4293-3506

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-2035 Date Sampled: 12/15/05 Arrival Time: 10:30 Depart. Time: 16:20

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 3.65 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDAR Purge: Time Start 11:40 End 14:55

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	11:45	3.70	5.99	-13.0	353	10.82	0.70	19.5	360
Final Reading	14:54	3.70	5.97	-20.7	327	11.26	0.39	4.97	360

Sample Collection: Time Start: 15:00 End: 16:00 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	Slightly yellow
Describe appearance:	(turbid)	silty	sand	clay	(floaters)	sheen iron floes
	clear	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments Had a problem with a pump after first reading. Nathan pulled it out and ~~fixed~~ fixed it. Very high turbidity due to iron. Finally turbidity was down to 4.97 and started ~~taking~~ Sampling

-ve both sodium and acetate

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P/ NATHAN H.

Well ID: MW-203S Date Sampled: 12/15/05

YSI # 2 Turb # 5293-3504

WL from T.O.C = 4.0
T.O.PVC = 3.7

Time (military)	Water Level (feet)	pH	ORP ~~Eh~~ (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1213	3.7*	6.0	-2.1	342	10.64	0.68	126	360
1218	3.7	6.01	-6.1	341	10.36	0.47	118	364
1224	3.7	5.99	-8.2	341	10.86	0.52	99	364
1230	3.7	5.99	-10.9	340	11.04	0.49	91.6	360
1235	3.7	5.98	-13.3	339	11.18	0.50	94.0	360
1242	3.7	5.98	-15.0	338	11.20	0.44	73.9	360
1249	3.7	5.97	-15.2	337	11.22	0.43	63.5	360
1255	3.7	5.97	-16.1	336	11.15	0.44	54.9	360
13:01	3.7	5.97	-17.2	335	11.19	0.41	46.9	360
13:07	3.7	5.97	-17.9	335	11.21	0.40	40.6	360
13:15	3.7	5.96	-18.2	334	11.24	0.43	35.2	360
13:20	3.7	5.96	-18.0	335	11.18	0.46	31.1	360
13:25	3.7	5.95	-17.9	334	11.16	0.47	27.8	360
13:30	3.7	5.96	-17.8	333	11.15	0.46	21.7	360
13:37	3.7	5.97	-18.0	333	11.23	0.48	19.4	360
13:44	3.7	5.96	-17.4	332	11.23	0.45	15.5	360
13:50	3.7	5.96	-17.2	332	11.30	0.43	14.0	360
13:56	3.7	5.96	-17.0	331	11.30	0.40	11.6	360
14:02	3.7	5.96	-17.4	331	11.28	0.38	9.37	360
14:08	3.7	5.96	-17.7	330	11.31	0.39	8.13	360
14:14	3.7	5.96	-17.5	330	11.24	0.43	7.11	360
14:20	3.7	5.96	-18.2	330	11.26	0.47	6.97	360
14:27	3.7	5.96	-19.2	329	11.26	0.45	6.83	360
14:36	3.7	5.96	-20.0	328	11.25	0.41	6.28	360
14:45	3.7	5.97	-20.6	328	11.23	0.40	5.86	360
14:54	3.7	5.97	-20.7	327	11.26	0.39	4.97	360

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-203D Date Sampled: 12/15/05 Arrival Time: 10:20 Depart. Time: 12:45

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

YSI #4 Turb # 4815-5203

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. 420 ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 4.0 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method bladder Purge: Time Start 1055 End 12:00

	Time	Water Level (feet)	pH	ORP (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1056	4.0	6.85	1.6	266	9.66	13.0	6.7	220
Final Reading	1150	4.0	6.37	-7.4	283	10.28	0.50	3.83	240

Sample Collection: Time Start: 12:10 End: 12:20 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none – little sulfide)		fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? No Length? _____ Floating or Sinking or Other? _____

Comments YSI #4
Turb # 4815-5203

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-203D Date Sampled: 12/15/05

Time (military)	Water Level (feet)	pH	ORP (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1109	4.0	6.75	-15.2	265	9.82	0.96	5.56	258
1114	4.0	6.64	-24.1	267	10.05	0.83	5.43	220
1121	4.0	6.56	-25.6	269	10.07	0.72	5.46	220
1126	4.0	6.52	-23.2	273	10.10	0.64	3.94	240
1140	4.0	6.39	-11.0	282	10.26	0.54	3.88	240
1145	4.0	6.37	-8.4	283	10.26	0.51	3.58	240
1150	4.0	6.37	-7.4	283	10.28	0.50	3.93	240

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-203B Date Sampled: 12/15/05 Arrival Time: 10:20 Depart. Time: 12:45

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: _____ inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 4.09 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 11:00 End 11:45

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	11:13	5.15	7.23	365.0	~~170~~ 243	9.14	2.09	NM	140
Final Reading	11:41	5.85	7.13	384.9	234	9.76	0.72	1.88	115

Sample Collection: Time Start: 11:55 End: 12:20 Samples Preserved (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	(black) floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? — Floating or Sinking or Other? _____

Comments Had problems with stabilizing water level initially. Poor recharge. YSI - #1

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park out Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-203B Date Sampled: 12/15/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
11:17	5.40	7.17	370.7	237	9.74	1.43	1.97	140
11:28	5.85	7.13	379.4	235	9.85	0.93	1.73	140
11:31	5.90	7.14	381.0	235	9.89	0.85	2.18	120
11:35	5.90	7.14	382.3	235	9.74	0.79	1.73	120
11:38	5.85	7.14	382.6	235	9.79	0.75	1.75	120
11:41	5.85	7.13	384.9	234	9.76	0.72	1.88	115

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: BAD

Well ID: MW-204S Date Sampled: 12/15/05 Arrival Time: 1115 Depart. Time: 1545

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 36 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. ~23 + PVC Hight ft Depth of well from T.O.PVC. ~23+ PVC Hgt ft

Depth of water from T.O.C. 13.68 ft Depth of water from T.O.PVC 13.44 ft

Feet of standing water ~11 ft Feet of standing water _____ ft

Volume of standing water ~1.8 gal Volume of standing water _____ gal

Purging Method Micro Bladder Purge: Time Start ~~1227~~ 1315 End 1439

YSI: #5
2020: 1501

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1320	13.44 prc	5.26	175.7	1572	9.33	1.67	32.4	96
Final Reading	1438	13.44 prc	5.22	148.6	1907	10.79	1.12	9.32	96

Sample Collection: Time Start: 1438 End: 1515 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	(floaters)	sheen
	clear	multiphase	foaming	slimy	algae	Iron suspension V. fine particles

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments Could not set 2" Bladder Down Well due to bend in 2" PVC Had to go get mini bladder. Mini bladder had air leakage issues in barb fittings. Had to go fix that. Well now purging, though a little slow. Possibly due to reused teflon bladder (which was bleconed)

TOTAL PURGE ~2 gallons

Lead Notes. } papers both Neg.

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park out Job No.: 36800321.00003 Samplers: BAD

Well ID: MW-2045 Date Sampled: 12/15/05

Turb. reads flow fluctuations

Covered discharge T's drop lines from sun

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1330	13.44	5.24	175.1	1652	10.22	1.07	30.1	96
1337	13.44	5.22	171.7	1706	10.57	0.98	21.7	96
1342	13.44	5.22	168.6	1744	10.77	0.99	23.6	96
1347	13.44	5.23	165.2	1776	10.90	1.01	18.5	96
1352	13.44	5.22	164.3	1787	11.03	1.03	17.3	96
1357	13.44	5.22	163.2	1800	10.95	1.04	17.2	96
1402	13.44	5.22	161.0	1820	10.87	1.04	16.1	96
1407	13.44	5.23	159.7	1834	10.86	1.05	15.1	96
1412	13.44	5.22	157.6	1852	10.95	1.05	13.6	96
1417	13.44	5.23	156.0	1862	11.14	1.08	12.1	96
1422	13.44	5.22	154.7	1869	11.16	1.09	11.5	96
1426	13.44	5.22	152.9	1886	11.09	1.10	9.58	96
1430	13.44	5.22	151.5	1887	11.03	1.11	10.49	96
1434	13.44	5.22	150.2	1898	10.92	1.11	10.08	96
1438	13.44	5.22	148.6	1907	10.79	1.12	9.32	96
		0.1±	10mV±	3%	3%	10%	< 5 / 10%	

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: mw-2055 Date Sampled: 12/15/05 Arrival Time: 1130 Depart. Time: 1400

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of ~~well from T.O.C.~~ _____ ft	Depth of well from T.O.PVC. _____ ft
Depth of water from T.O.C. 8.22 ft	Depth of water from T.O.PVC _____ ft
Feet of standing water _____ ft	Feet of standing water _____ ft
Volume of standing water _____ gal	Volume of standing water _____ gal

Purging Method portable bladder 1.5" Purge: Time Start 11:40 End 1310

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	~~11:40~~ 12:13	8.22	5.87	245.4	166	11.93	1.11	12	72.4 288
Final Reading	1303	8.25	5.79	199.7	196	12.18	0.47	3.8	286

Sample Collection: Time Start: 1315 End: 1340 Samples Preserved: (Yes) / No

(603) 365 6830

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments Pumped air/water mix at first 20 min, held controller fixed pump - gasket problem, then icing when resume pumping. YSI #3 Test papers negative

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

-74
4
296

Well ID: MW-205 S Date Sampled: 12/15/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1213	8.22	5.87	245.4	166	11.93	1.11	12	288
1219	8.25	5.85	244.9	174	11.97	0.84	11	3.74.4 ~~312~~ 296
1236	8.28	5.82	224.6	183	12.06	1.85	6.65	~~312~~ 296
1246	8.25	5.79	210.5	188	12.04	0.98	3.76	~~312~~ 296
1250	8.25	5.80	207.7	189	12.09	0.87	3.8	296
1254	8.25	5.79	206.2	190	12.07	0.75	4.2	296
1258	8.28	5.78	201.8	193	12.17	0.57	3.9	296
1303	8.25	5.79	199.7	196	12.18	0.47	3.8	296
1310	~~8~~: Sample		Here					

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 1
TURB: 5203

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-208S Date Sampled: 12/16/05 Arrival Time: 10:00 Depart. Time: 14:10

Well secure upon arrival? (Yes) No PID Readings (ppm) High Moisture (no PID Reading) Breathing Zone _____ Well Headspace _____

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 5.3 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDAR Purge: Time Start 11:37 End 13:30

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	11:43	5.29	5.84	49.0	218	12.23	1.10	154	240
Final Reading	13:26	5.25	5.76	46.2	214	12.37	0.25	42.6	205

Sample Collection: Time Start: 13:35 End: 13:55 Samples Preserved: (Yes) No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	(brown)	(orange)	(red)	Orange-red
Describe appearance:	turbid	silty	sand	clay	(floaters)	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments Had problem inserting pump - fished out tubings. High turbidity reading due to iron. All other parameters were stable. Turbidity wasn't going down below to meet <5 NTU criteria - Started Sampling. Samples were slightly yellow in appearance in VOA vials.
test papers negative

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-208S Date Sampled: 12/16/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
11:50	5.26	5.77	48.9	211	12.41	0.59	82.4	264
12:00	5.25	5.78	48.6	212	12.56	2.84	74.8	260
12:05	5.25	5.78	49.3	212	12.56	2.32	68.0	260
12:10	5.25	5.77	50.2	214	12.58	1.79	62.4	260
12:17	5.25	5.77	50.8	216	12.61	1.46	59.6	260
12:24	5.25	5.77	51.0	215	12.61	1.12	55.2	260
12:30	5.25	5.77	51.8	214	12.41	0.95	49.8	205
12:36	5.25	5.76	51.4	214	12.42	0.79	47.6	205
12:42	5.25	5.77	50.5	214	12.40	0.68	47.2	205
12:48	5.25	5.76	50.7	214	12.43	0.33	49.6	205
12:55	5.25	5.76	49.6	214	12.49	0.29	44.2	205
13:02	5.25	5.76	49.3	214	12.43	0.26	48.1	205
13:08	5.25	5.75	48.8	214	12.39	0.24	~~48.8~~ 44.9	205
13:14	5.25	5.76	47.5	214	12.38	0.25	47.4	205
13:20	5.25	5.76	47.0	214	12.41	0.24	40.8	205
13:26	5.25	5.76	46.2	214	12.37	0.25	42.6	205

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-208D Date Sampled: 12-16-05 Arrival Time: 1000 Depart. Time: 1132

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 6.3 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Pump Purge: Time Start 1037 End 1132

	Time	Water Level (feet)	pH	~~Eh~~ ORP (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1041	5.3	6.13	268.4	216	12.03	8.2	5.38	244
Final Reading	1118	5.3	5.87	260	251	11.92	0.46	1.09	240

Sample Collection: Time Start: 1118 End: 1132 Samples Preserved (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? — Length? — Floating or Sinking or Other? _____

Comments YSI #4
Turb #4703

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-208D Date Sampled: 12-16-05

VSI # 4 Turb # 4703

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1044	5.3	5.94	278.4	220	12.03	0.76	4.44	240
1051	5.3	5.86	281.2	231	12.01	0.58	2.78	240
1100	5.3	5.86	276	241	12.03	0.51	2.60	240
1109	5.3	5.87	266	247	12.00	0.45	1.28	240
1114	5.3	5.87	264	250	11.99	0.43	1.15	240
1118	5.3	5.87	260	251	11.92	0.46	1.09	240

6013 -

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L.O'Connor

Well ID: MW-208B Date Sampled: 12/16/05 Arrival Time: 10:00 Depart. Time: 14:00

Well secure upon arrival? (Yes) / No PID Readings (ppm) Not measured (its raining)
Breathing Zone / Well Headspace

Well Diameter: _____ inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft

Depth of water from T.O.C. _____ ft

Feet of standing water _____ ft

Volume of standing water _____ gal

Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.PVC 5.35 ft

Feet of standing water _____ ft

Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 11:45 End 13:00

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	11:57	5.78	6.61	134.3	382	10.88	3.49	12	130
Final Reading	12:56	5.78	7.00	1.3	387	11.56	0.51	4.26	135

Sample Collection: Time Start: 13:10 End: 13:41 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? — Floating or Sinking or Other? —

Comments Tubing in well that had to be fished out
YSI #4 Turbidimeter 0103

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Unit Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-208B Date Sampled: 12/16/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
12:00	5.78	6.75	97.0	382	10.93	3.16	13	130
12:07	5.78	6.83	52.2	383	11.23	2.41	7.8	130
12:10	5.78	6.92	45.2	383	11.23	2.46	9.8	130
12:13	5.78	6.93	38.0	383	11.24	2.37	7.2	135
12:16	5.78	6.95	34.4	383	11.29	2.28	6.70	135
12:19	5.78	6.96	30.1	383	11.30	2.10	8.81	135
12:22	5.78	6.98	25.3	384	11.39	1.94	6.55	135
12:25	5.78	6.99	23.1	384	11.40	1.79	6.35	135
12:28	5.78	6.99	20.0	384	11.44	1.60	7.39	135
12:32	5.78	6.99	19.7	385	11.39	1.62	~~4.95~~ 5.8 NH	135
12:38	5.78	7.00	14.2	384	11.48	1.26	5.10	135
12:41	5.78	7.00	10.4	383	11.48	1.00	4.11	135
12:44	5.78	7.01	7.0	384	11.46	0.78	4.31	135
12:47	5.78	7.00	4.3	384	11.48	~~0.67~~ 0.70	4.65	135
12:50	5.78	7.01	3.1	384	11.48	0.60	4.74	135
12:53	5.78	7.00	1.8	386	11.53	0.54	4.10	135
12:56	5.78	7.00	1.3	387	11.56	0.51	4.26	135

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-213S Date Sampled: 12/19/05 Arrival Time: 13:00 Depart. Time: 16:40

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: _____ inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 6.35 ft (after purging)

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 13:45 End 14:45

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	14:22	7.7	6.86	-90.3	1652	11.48	1.40	3.08	230
Final Reading	14:43	7.65	6.96	-132.2	1594	11.89	0.23	2.55	240

Sample Collection: Time Start: 15:00 End: 16:15 Samples Preserved: (Yes) No — metals, VOCs

MW-213S-CS duplicate time: 14:30

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum	(chemical)
Describe color:	colorless	black	brown	orange	red	(yellowish)
Describe appearance:	turbid	silty	sand	clay	(some black) floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? N/A Length? _____ Floating or Sinking or Other? _____

Comments Black floaters in initial purge. Water appears dirty and smells. Effervescing- tiny bubbles made worse with the addition of HCl. VOCs not preserved. Bubbles jumping out of vial like Sprite® Test papers are negative

YSI #3 Turb 3504

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ext Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-2135 Date Sampled: 12/19/05

	±0.1	±10mv	±3%		±3%	±10%	±5 ±10%	
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
14:28	7.65	6.92	-120.8	1631	11.74	0.32	3.37	240
14:34	7.65	6.93	-126.5	1610	11.74	0.27	2.46	240
14:37	7.65	6.95	-129.4	1606	11.73	0.25	2.38	245
14:40	7.65	6.95	-131.0	1600	11.81	0.24	2.12	240
14:43	7.65	6.96	-132.2	1594	11.89	0.23	2.55	240

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: N. Henderson

Well ID: MW-213D Date Sampled: 12/19/05 Arrival Time: 13:00 Depart. Time: 1648

Well secure upon arrival? Yes / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 7.9 ft Depth of water from T.O.PVC 6.67 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 1417 End 1610

	Time	Water Level (feet)	pH	ORP Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1421	~~7.9~~ 6.9	7.36	170.6	653	9.89	1.56	245	280
Final Reading	1610	6.9	6.5	58.0	645	9.60	0.24	7.81	220

Sample Collection: Time Start: ~~1625~~ 1615 End: 1635 Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	clear	multiphase	foaming	slimy	algae		

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments Cloudy appearance, slight sulfide odor

YSI #5

Turb 0315-0103

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

VSI #5 Tubing 0315-0103

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW 213 D Date Sampled: 12-19-05

		±0.1	±10mV	±3%	±3%	±10%	±10%	
Time (military)	Water Level (feet) TOC	pH	ORP ~~Eh~~ (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1432	6.9	6.60	155.1	656	9.93	0.45	163	240
1437	6.9	6.53	144.3	655	9.96	0.41	105.5	245
1443	6.9	6.5	131.7	654	10.7	0.36	71.1	225
1449	6.9	6.49	123.2	655	9.96	0.34	48.6	220
1456	6.9	6.48	108.1	653	9.83	0.31	45.2	220
1502	6.9	6.48	99.2	652	9.93	0.30	25.3	220
1510	6.9	6.48	87.6	651	9.90	0.28	20.6	220
1517	6.9	6.49	80.4	649	10.00	0.29	17.3	220
1523	6.9	6.49	76.9	648	10.00	0.26	11.9	220
1529	6.9	6.49	72.1	648	9.91	0.26	13.1	220
1534	6.9	6.49	69.4	648	9.73	0.26	11.4	220
1539	6.9	6.49	66.8	647	9.72	0.26	11.7	220
1544	6.9	6.50	64.7	647	9.68	0.26	9.5	220
1550	6.9	6.49	62.3	646	9.66	0.25	8.5	220
1555	6.9	6.50	61.5	646	9.70	0.25	8.37	220
1600	6.9	6.50	59.8	646	9.58	0.25	7.2	220
1605	6.9	6.5	58.8	646	9.65	0.24	7.32	220
1610	6.9	6.5	58.0	645	9.60	0.24	7.81	220

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 4
TURB: 5203

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-213B Date Sampled: 12/19/05 Arrival Time: 13:30 Depart. Time: 17:00

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 5.79 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDAR Purge: Time Start 14:25 End 15:55

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	14:45	6.45	6.61	24.8	607	8.44	2.01	14.2	80
Final Reading	15:55	6.50	6.80	-17.6	558	8.84	0.91	14.0	88

Sample Collection: Time Start: 16:00 End: 16:45 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	(turbid)*	(silty)	sand	clay	(floaters)*	sheen
	(clear)	multiphase	foaming	slimy	algae	

VOA vials samples

Organic Layer? No Length? _____ Floating or Sinking or Other? _____

Comments *Blank (water in initial purge (bucket water)
Well was drawing down. Purged at low flow rate

-ve w/ acetate & iodine

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-2313 Date Sampled: 12/19/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
		±0.1	±10mV	±3%	±3%	±10%	±10% (25)	
14:55	6.46	6.73	4.7	610	8.61	1.66	11.8	84
14:03	6.48	6.75	-0.2	604	8.77	1.48	29.9	84
15:10	6.50	6.77	0.2	583	9.05	1.32	24.1	88
15:17	6.50	6.78	-4.2	574	9.01	1.23	16.9	88
15:25	6.50	6.78	-13.0	573	8.89	1.14	15.5	88
15:32	6.50	6.78	-21.9	571	8.92	1.09	20.1	88
15:40	6.50	6.79	-24.3	565	8.86	1.05	13.1	88
15:47	6.50	6.79	-25.5	562	8.85	0.98	9.93	88
15:55	6.50	6.80	-17.6	558	8.84	0.91	14.0	88

MONITORING WELL SAMPLING WORKSHEET

S. Hatfield

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: ~~BAD~~ S. Hatfield

Well ID: MW-214S Date Sampled: 12/19/05 Arrival Time: 1300 Depart. Time: 1600

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.3 Breathing Zone 27 bouncing slow to 50 Well Headspace

YSI # 2
TURB # 4720-4703

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. 28 ft	Depth of well from T.O.PVC. ~~_____~~ ft
Depth of water from T.O.C. ~~_____~~ ft	Depth of water from T.O.PVC 4.04 ft
Feet of standing water ~~_____~~ ft	Feet of standing water ~~_____~~ ft
Volume of standing water ~~_____~~ gal	Volume of standing water ~~_____~~ gal

Purging Method portable bladder Purge: Time Start 1350 End 1520

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1350	4.12	6.45	-92.0	299	9.2	2.50	17.1	100
Final Reading	1515	4.27	6.64	-109.7	275	9.97	0.83	1.5	208

Sample Collection: Time Start: 1520 End: 1550 Samples Preserved (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments Moved w/ BAD, took initial reading, then helped Bill Mob to MW-215D. Cold today, clear Bill has tent set up, I don't.

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-214S Date Sampled: 12/19/5

	±0.1	±10mV	±3%		±3%	±10%	<5 ±10%	
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1350	4.12	6.48	-92.0	299	9.20	2.50	17.1	100
1454	4.25	6.63	-109.2	277	9.95	0.80	59	208
1459	4.27	6.64	-110.6	275	10.01	0.76	(1*) 1.7	208
1504	4.25	6.65	-111.6	275	10.13	0.78	1.6	208
1510	4.26	6.63	-110.0	275	9.95	0.81	1.6	208
1515	4.27	6.64	-109.7	275	9.97	0.83	1.5	208
1520	Sample Here							

moved 215D w/ BAD

(1*) cleaned turb vial, looked a little yellowish

76
x.43
228
304
3268

MONITORING WELL SAMPLING WORKSHEET

311A-D

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: BAD/SH - W

Well ID: MW-215 B Date Sampled: 12/19/05 Arrival Time: 1400 Depart. Time: 17:15

Well secure upon arrival? (Yes) / No PID Readings (ppm) NS (Breathing Zone) NS (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia) YSI #1 Turb #150

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 4.57 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 1455 BAD End 1552

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1457	4.71	7.77	131.0	212	8.80	7.41	8.64	210
Final Reading	1550	5.70	8.13	115.0	216	8.27	3.59	5.70	65

Sample Collection: Time Start: 1552 End: 1650 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments Well dropped rapidly at start down ~1.4' but rose to 1.0 ft after pulling back on flow rate as far as possible. Though turb dropping, time setting left start sampling. sample time 1600 Purge ~1 gal

Pb = Neg K = Neg

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: BAD /SH

Well ID: MW-215 B Date Sampled: 12/19/05

		±0.1	±10 mV	±3%		±3%	±10%	<5 ±10%
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)		Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1511	6.04	8.09	119.3	214		9.13	2.07	5.0	72
1515	5.95	8.11	118.0	214		8.67	2.09	4.46	66
1522	5.85	8.11	117.0	215		8.37	2.50	9.19	67
1527	5.85	8.13	116.8	215		8.31	3.14	8.43	67
1535	5.85	8.13	116.3	216		8.21	3.76	7.49	67
1542	5.85	8.13	116.2	215		8.27	3.72	6.79	67
1546	5.71	8.12	116.3	216		8.26	3.67	6.39	65
1550	5.70	8.13	115.0	216		8.27	3.57	5.70	65

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: MW-210S Date Sampled: 12/20/05 Arrival Time: 1400 Depart. Time: 1630

YSI #3, Turbid 4815-5203

Well secure upon arrival? Yes / No PID Readings (ppm) 0.0 Breathing Zone 0.0 Well Headspace

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. ~~7.3~~ _____ ft

Depth of water from T.O.C. ~~[illegible]~~ 6.5 ft Depth of water from T.O.PVC ~~[illegible]~~ 6.2 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method bladder charge Purge: Time Start 1415 End 1619

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	~~1615~~ 1429	6.5	6.11	-2.1	488	7.36	3.31	36.8	240
Final Reading	1605	6.55	5.98	5.8	407	7.03	0.35	4.20	240

Sample Collection: Time Start: 1610 End: 1619 Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum	metalic	
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	clear	multiphase	foaming	slimy	algae		

Organic Layer? — Length? _____ Floating or Sinking or Other? _____

Comments _____

Refer to page _____ of the corresponding field log book.

Potassium Iodine None. Lead Acetate None

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: Henderson

Well ID MW-210S Date Sampled: 12/20/05

		±0.1	±10mV	±3%	±3%	±10%	<5 ±10%	
Time (military)	Water Level (feet)	pH	ORP Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1438	6.55	6.08	-7.2	480	7.43	2.47	104	244
1444	6.55	6.05	-6.9	467	7.42	1.09	34.9	246
1449	6.55	6.04	-6.2	459	7.38	1.04	32.3	248
1454	6.55	6.03	-6.4	455	7.38	0.83	27.2	240
1459	6.55	6.02	-5.9	448	7.36	0.50	17.5	240
1510	6.55	6.01	-3.2	434	7.19	0.30	10.48	240
1519	6.55	5.99	-1.3	427	7.13	0.28	7.97	225
1524	6.55	6.00	-0.8	424	7.08	0.28	10.4	225
1536	6.55	6.00	-0.1	427	7.01	0.34	10.7	240
1540	6.55	6.00	1.3	422	7.03	0.80	6.37	240
1545	6.55	5.99	3.2	417	7.10	0.65	5.67	240
1550	6.55	5.99	3.3	415	7.06	0.51	5.22	240
1555	6.55	5.98	4.0	410	7.02	0.46	4.27	240
1600	6.55	5.98	4.1	409	7.01	0.38	4.10	240
1605	6.55	5.98	5.8	407	7.03	0.35	4.20	240
		0.1	±10	3%	3%	10%	<5/10%	

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-211S Date Sampled: 12/20/05 Arrival Time: 10:50 Depart. Time: 18:20

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well ~~from~~ T.O.C. _____ ft
Depth of water from T.O.C. _____ ft
Feet of standing water _____ ft
Volume of standing water _____ gal

Depth of well from T.O.PVC. _____ ft
Depth of water from T.O.PVC _____ ft
Feet of standing water _____ ft
Volume of standing water _____ gal

Purging Method portable bladder

Purge: Time Start ~~1330~~ 1443 End 1715

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	~~1330~~ 1443	~~5.92~~ 4.92	6.27	-44.6	325	8.20	0.73	114	368.4 ~ 272
Final Reading	1720	4.94	6.28	-102.4	339	8.62	0.17	6.75	296

Sample Collection: Time Start: 1720 End: 1750 Samples Preserved: (Yes) / No

Purge Water ~~Sample~~ Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	(orange)	red	
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Sample appeared clear and v. low turbidity.

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments No twst, clear + cold + breezy. E. DeCola at MW-211D next to me in twst.
frozen controller, no fittings, no lg pump
rusty 100 ml first discharge. Problems w/ O-ring on pump
Had to pull out pump, disassemble + re-build.

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-21S Date Sampled: 12/20/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
		±0.1	±10mV	±3%	±3%	±10%	≠5 10%	
1443	4.92	6.27	-44.6	325	8.20	0.73	114	272
1448	4.94	6.28	-48.9	322	8.39	0.49	75	
1503	4.94	6.28	-64.5	316	8.59	0.20	56	70.4 280
1524	4.94	6.28	-82.2	339	8.75	0.27	28.8	280
1540	4.95	6.28	-89.3	341	8.67	0.50	21.9	74.4 296
1602	4.94	6.28	-95.5	339	8.70	0.20	15.7	296
1610	4.94	6.28	-96.4	339	8.71	0.15	15.3	296
1632	4.94	6.28	-90.6	356	8.59	0.24	14.5	296
1640	4.94	6.28	-91.7	339	8.60	0.15	11.0	296
1705	4.94	6.28	-99.9	333	8.63	0.25	7.32	296
1710	4.94	6.28	-100.1	336	8.62	0.14	6.70	296
1715	4.94	6.28	-101.2	337	8.61	0.13	6.88	296
1720	4.94	6.28	-102.4	339	8.62	0.17	6.75	296
1725	Sample							

Note: took readings several minutes apart turbidity very high

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: E. Dodell

Well ID: MW-211D Date Sampled: 12/20/05 Arrival Time: 10:50 Depart. Time: 15:45

Well secure upon arrival? Yes / No PID Readings (ppm) 0.0 Breathing Zone 0.0 Well Headspace

VSI #: 4
Turb # 3504

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. PVC Not 4.76 ft Depth of water from T.O.PVC 4.76 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Midpoint to well - 20.6'

Purging Method Bladder Purge: Time Start 11:21 End _____

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	increase Pressure
Initial Reading	11:31	4.77	6.21	-34.1	713	8.71	2.33	2.47	120	032
Final Reading	14:38	4.77	6.20	-74.4	773	11.09	0.69	4.92	244	

Sample Collection: Time Start: 14:45 End: 15:15 Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	clear	multiphase	foaming	slimy	algae		

Organic Layer? N Length? N Floating or Sinking or Other? N

No Bubbles in Tubing or YSI. ~~No~~

Comments ★ Do jumps down to 0.52-0.56 as soon as new water enters and then jumps back to ~.74 mg/L - 1.24 mg/L. Reading in a 2 min cycle: when water first enters

Do Readings now taken as soon as water enters ★ YSI.

.64 mg/L .74
.54 mg/L → 1.15 → .74
.54 → .76
.55 → .77 → .75
.61 → .79 → .80
.60 → .76 → .74
.53 → 1.16 → .71
.55 → .81 → .77

Refer to page -ve with Test Papers of the corresponding field log book.

- S. Hatfield mobe to well + install pump.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Pg 1 of 2

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: [illegible]

Well ID: MW-24D Date Sampled: 12/20/05

	±0.1	±10mV	±3%	±3%	±10%	<5 ±10%
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
11:39	4.77	6.19	-57.0	771	10.86	0.78	24.6	248
11:44	4.77	6.20	-60.3	769	10.97	0.76	47.8	248
11:49	4.47	6.20	-62.2	769	10.93	0.72	111	248
11:56	4.77	6.20	-63.5	767	11.00	0.72	93.9	248
12:02	4.77	6.20	-64.8	767	10.98	0.53	58.6	248
12:09 ~~12:07~~	4.77	6.20	-66.4	767	11.02	0.58	56.0	248
12:14	4.77	6.20	-66.8	767	11.01	0.69	47.2	240
12:19	4.77	6.20	-67.8	768	11.02	0.72	29.7	248
12:24 ~~12:20~~	4.77	6.20	-68.3	768	11.03	0.61	32	248
12:29	4.77	6.20	-68.8	768	11.02	0.53	26	240
12:34	4.77	6.20	-69.1	770	11.03	0.70	21	244
[illegible]:39	4.77	6.20	-69.6	769	11.07	0.62	~~20.6~~ 20	244
12:44	4.77	6.20	-70.2	770	11.09	0.70	19.6	248
12:49	4.77	6.20	-70.4	765	11.09	0.73	20.1	252
12:54	4.77	[illegible]	[illegible]	770	11.10	0.52	—	—
13:00	4.77	6.20	-70.9	771	11.07	0.56	14.4	248
13:07	4.77	6.19	-71.3	770	[illegible]	0.51	15.3	248
13:14	4.77	6.20	-71.4	772	10.97	0.54	12.3	224
13:19	4.77	6.20	-71.8	771	11.06	0.54	11.2	240
13:24	4.77	6.20	-72.1	771	11.09	0.55	11.2	240
13:29 13:30	4.77	6.20	[illegible]	[illegible]	11.15	0.55	10.27	240
13:41	4.77	6.20	-72.0	773	11.14	0.59	8.17	236
13:46	4.77	6.20	-73.1	772	[illegible]	0.59	7.56	224
13:51	4.77	6.20	-73.4	774	11.15	0.61	7.59	236
13:56	4.77	6.20	-73.8	774	11.15	0.61	6.96	240
14:01	4.77	6.20	-13.9	773	11.18	0.63	7.47	240
[illegible]	[illegible]	6.20	[illegible]	773	11.20	0.62	6.98	240

✓ ✓ ✓ ✓ ✓ ✓

Page 1 of 2

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Outfall Job No.: 36800321.00003 Samplers: EAD

Well ID: MW-211BD Date Sampled: 12/20/05

		±0.1	±10mv	±3%	±3%	±10%	<5 ±10%
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
14:12	4.77	6.20	-74.2	772	11.22	0.64	~~6.22~~	240
14:18	—	—	—	—	—	—	6.22	—
14:23	4.77	6.21	-74.7	773	11.09	0.65	5.83	220
14:28	4.77	6.20	-75.1	773	11.10	0.63	4.41	244
14:33	4.77	6.20	-73.5	775	11.13	0.69	4.31	244
14:38	4.77	6.20	-74.4	773	11.09	0.69	4.2	244

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: JCM

Well ID: MW-212D Date Sampled: 12-20-05 Arrival Time: 1200 Depart. Time: 1450

Well secure upon arrival? Yes / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = — ft (dia)

Depth of well from T.O.C. 27.63 ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 4.71 ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDER Purge: Time Start 1230 End 1325

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1230	4.73	6.45	76.0	363	6.98	2.15	40.7	92
Final Reading	1325	4.74	6.47	30.6	397	9.49	0.49	2.62	112

Sample Collection: Time Start: 1340 End: 1420 Samples Preserved: (Yes) No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheen
SLIGHTLY	clear	multiphase	foaming	slimy	algae	

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments NO REACTION TO LEAD ACETATE PAPER
" " " POTASSIUM IODIDE PAPER
YSI # 5
TURB # 1501

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ext Job No.: 36800321.00003 Samplers: JCM

Well ID: MW-212D Date Sampled: 12-20-05

		±0.1	±10mV	± 3%		±3%	±10%	±10% (<5)
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1240	4.73	6.40	65.7	363	7.92	1.36	36.2	100
1245	4.73	6.39	57.0	371	8.68	0.91	30.8	106
1250	4.74	6.40	53.4	375	8.93	0.79	27.4	108
1255	4.73	6.41	46.9	381	9.18	0.64	20.8	112
1300	4.73	6.42	40.0	389	9.41	0.61	13.9	114
1305	4.73	6.43	36.6	396	9.42	0.81	8.0	114
1310	4.74	6.44	35.2	395	9.44	0.77	5.7	110
1315	4.74	6.44	33.7	396	9.46	0.66	4.2	110
1320	4.74	6.43	31.3	397	9.48	0.54	3.6	112
1325	4.74	6.43	30.6	397	9.49	0.44	2.62	112

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-212B Date Sampled: 12/20/05 Arrival Time: 10:30 Depart. Time: 16:45

Well secure upon arrival? (Yes) No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 4.90 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 12:30 End 15:50

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	12:48	4.95	7.08	163.1	891	10.56	0.86	366	400
Final Reading	15:44	5.03	6.63	-5.1	777	10.58	0.18	141	360

Sample Collection: Time Start: 15:55 End: 16:30 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	(slightly) turbid	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? No Length? test papers negative Floating or Sinking or Other? —

Comments Had problems with pump possibly due to sand clogging pump. Pressure was increased but then bladder collapsed. Pulled pump + fixed. Started w/ YSI #2 initially but then DO jumped around. was going to change DO membrane + recalibrate but will used another YSI (J. Meunier has finished).

Refer to page _____ of the corresponding field log book.

used: YSI #5, Turb. meter 0103

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: MW-212B Date Sampled: 12/20/05

	±0.1	±10 mV	±3%	±3%	±10%	≤5 ±10%
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
14:29	5.02	7.11	31.0	870	10.25	6.22	234	240
14:32	5.02	7.10	21.7	870	10.26	2.72	169	280
14:35	5.02	7.08	10.7	862	10.33	2.63	154	280
14:53	5.03	6.83	5.6	925	10.29	0.37	12.9	320
14:56	5.03	6.86	0.1	922	10.42	0.30	16	320
14:59	5.03	6.86	-3.8	918	10.51	0.28	14	320
15:02	5.03	6.86	-6.6	911	10.50	0.26	14	320
15:06	5.03	6.85	-10.7	905	10.55	0.25	12	320
15:09	5.03	6.84	-11.7	900	10.57	0.23	8.2	325
15:12	5.03	6.82	-12.1	892	10.54	0.23	16	330
15:15	5.03	6.80	-11.0	876	10.57	0.22	7.57	340
15:18	5.03	6.76	-10.2	864	10.57	0.21	15.9	345
15:25	5.03	6.73	-10.1	846	10.53	0.25	7.09	345
15:29	5.03	6.71	-9.4	828	10.58	0.20	13.9	345
15:32	5.03	6.69	-8.7	820	10.58	0.19	11.6	360
15:38	5.03	6.67	-7.0	799	10.59	0.19	10.71	360
15:40	5.03	6.64	-6.3	784	10.57	0.18	7.22	360
15:44	5.03	6.63	-5.1	777	10.58	0.18	14.1	360

→ changed YSIs

Turbidity is fluctuating between 7 and 16 professional judgement is to sample

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW-1 Date Sampled: 12/20/05 Arrival Time: 1030 Depart. Time: 1315

YSI# 3 TurbII 4815-5203

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 Breathing Zone 0.0 Well Headspace

Well Diameter: 1.5" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. 4 ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 4.25 ft Depth of water from T.O.PVC 4.0 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Small bladder Purge: Time Start 11.12 End 1259

	Time	Water Level (feet)	pH	~~Eh~~ ORP (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1130	4.35	7.52	133	621	7.31	3.86	13.3	140
Final Reading	1222	4.35	6.96	215.4	630	8.5	0.30	2.04	140

Sample Collection: Time Start: 1230 End: 1259 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? No Length? _____ Floating or Sinking or Other? _____

Comments due to low flow rate could not fill VOA vials in 1 sq. in to dc 1.5.

Refer to page _____ of the corresponding field log book.

Potassium Iodine None Lead acetate None

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW-1 Date Sampled: 12/20/05

	TOC	±0.1	±10MV	±3%		±3%	±10%	<5 ±10%	
Time (military)	Water Level (feet) TOC	pH	ORP Eh (mv)	Specific Conductivity (µs/cm)		Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1135	4.35	7.66	159.6	620		7.70	1.91	7.04	140
1138	4.35	7.06	190.0	620		7.98	0.77	7.13	140
1145	4.35	7.06	196.4	618		8.22	0.50	5.76	140
1151	4.35	7.01	204.8	621		8.25	0.42	4.62	140
1157	4.35	6.97	208.7	623		8.35	0.39	3.43	140
1202	4.35	6.97	211.0	626		8.48	0.36	2.86	140
1207	4.35	6.96	213.0	628		8.38	0.35	2.45	140
1212	4.35	6.96	214.0	628		8.35	0.34	2.14	140
1217	4.35	6.96	215.0	629		8.40	0.36	2.13	140
1222	4.35	6.96	215.4	630		8.5	0.30	2.04	140

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 1
TURB: 2002

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: OW-2 Date Sampled: 12/20/05 Arrival Time: 10:30 Depart. Time: 14:00

Well secure upon arrival? (Yes) No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 3.10 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDAR Purge: Time Start 11:15 End 12:58

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	11:27	3.11	7.22	166.0	654	8.59	6.09	16.2	136
Final Reading	12:58	3.11	6.39	96.4	610	9.20	0.54	3.38	164

Sample Collection: Time Start: 13:05 End: 13:35 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	(floaters)	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments -ve with Test papers. Black floaters seen in the Samplers.
Bubbles seen in the tubing initially but disappeared after purging. Some times

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park out Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: OW-2 Date Sampled: 12/20/05

Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
		±0.1	±10mv	±3%	±3%	±10%	<5 ±10%	
11:37	3.11	6.64	160.4	613	8.75	1.55	15.1	124
11:48	3.11	6.59	121.0	608	8.89	0.82	10.40	124
12:00	3.11	6.47	115.8	609	8.87	0.74	8.29	160
12:07	3.11	6.45	114.0	609	8.84	0.71	7.06	164
12:15	3.11	6.44	107.4	608	8.92	0.67	5.13	164
12:23	3.11	6.42	103.1	609	8.93	0.63	5.45	164
12:30	3.11	6.42	101.1	609	9.05	0.60	4.35	164
12:37	3.11	6.40	99.9	611	9.11	0.64	4.67	164
12:44	3.11	6.40	98.0	611	9.14	0.61	4.22	164
12:51	3.11	6.39	96.7	611	9.15	0.58	3.20	164
12:58	3.11	6.39	96.4	610	9.20	0.54	3.38	164

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: BAD

Well ID: OW-20 Date Sampled: 12/21/05 Arrival Time: 1030 Depart. Time: 13:45

Well secure upon arrival? Yes / No PID Readings (ppm) 0 (Breathing Zone) 5.5 (Well Headspace)

Turb 4703
YSI #3

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. ~46? site see recon ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 5.45 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method B LADDER Purge: Time Start 1120 End 1215

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1127	5.47	6.13	17.5	879	10.19	1.06	38.0	336
Final Reading	1208	5.46	5.94	22.6	883	10.45	0.51	2.76	348

Sample Collection: Time Start: 1215 End: 13:15 Samples Preserved: Yes / No

Pb ~~lodide~~ acetate Neg
K lodide Neg

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

few white floaters - slightly silver

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments Initial issue w/ air line leak corrected. Prior to hooking up air line drops of water were rising thru air tube and out.
Stopped readings to help sushil w/ wire and air line issues
~45 GAL purge

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Out Job No.: 36800321.00003 Samplers: WHO

Well ID: OW-20 Date Sampled: 12/21/05

		±0.1	±10mV	±3%	±3%	±10%	<5 ±10%	
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1148	5.46	5.94	23.3	885	10.47	0.56	10.71	348
1156	5.46	5.94	23.3	884	10.41	~~0.48~~ 0.55	4.37	348
1203	5.46	5.94	22.7	883	10.43	0.50	3.40	348
1208	5.46	5.94	22.6	883	10.45	0.51	2.76	348

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: OW-35 Date Sampled: 12/21/5 Arrival Time: 1030 Depart. Time: 1350

Well secure upon arrival? Yes / No PID Readings (ppm) _____ Breathing Zone _____ Well Headspace

YSI # 1 TURB # 3263-2002

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 3.85 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method portable bladder 1.5" Purge: Time Start 1130 End 1315

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1138	3.85→4.38	7.14	107.2	492	10.98	1.91	90	20.4 80 ml/min
Final Reading	1315	4.47	7.28	29.9	500	12.52	0.21	4.8	170

Sample Collection: Time Start: 1320 End: 1345 Samples Preserved: Yes / No

potassium iodide paper: — lead acetate paper. —

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	clear	multiphase	foaming	slimy	algae		

Organic Layer? NO Length? NO Floating or Sinking or Other? _____

Comments Set Tent up. Couldn't get 1.5" pump beyond ≈ 5', thought it was well problem but Laurie O. thought tubing issue, she came over + I fished tubing out w/ decomed lite cable + book. Seeing drawdown ≈ .3' at low flow ≈ 150 ml/min. Turbid obvious at first. Surrounded by train tracks here, some inactive, clear + cold today ≈ 25°F

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ext Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: OW-35 Date Sampled: 12/21/05

		±0.1	±10mV	±3%		±3%	±10%	<5 ±10%
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1138	3.85	7.14	107.2	492	10.98	1.91	90	80
1143	4.41	7.17	87.2	506	11.47	1.40	62	30.4 120
1155	4.47	7.22	65.1	513	11.94	0.74	50	55.4 220
1202	flow increased on its own ? 1 shot 20, 2, 3, 4th shot = 50 ml/							
	for a total flow of 175 ml/min ?							
1205	4.50	7.25	64.2	505	12.11	0.60	50	175
1227	4.70	7.26	49.6	510	12.32	0.40	14	214
(I'm in tent from begin of mob. My head is in sun and warm								
along w/ controller; YSI, discharge tubing in shade of Tent.)								
1239	4.47	7.27	43.6	512	12.36	0.33	10	(varys. 150)
1304	4.47	7.28	33.2	507	12.45	0.23	5.5	220
1309	4.47	7.28	32.3	506	12.49	0.22	5.2	200
1315	4.47	7.28	29.9	500	12.52	0.21	4.8	170
1320	— will Sample Here.							

took to well head

just waiting

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: OW-37 Date Sampled: 12/21/05 Arrival Time: 10:40 Depart. Time: 15:15

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 (Breathing Zone) 0.0 (Well Headspace)

Well Diameter: 1.5 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 3.70 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bladder Purge: Time Start 1120 End 1357

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	~~12:00~~ 12:03	4.45	6.82	53.0	872	9.54	2.24	45	120
Final Reading	1355	4.45	6.31	14.5	1217	9.95	1.50	50	120

Sample Collection: Time Start: 1400 End: 15:00 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	(orangish brown)	orange	red	
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? No Length? _____ Floating or Sinking or Other? _____

Comments YSI #5 - not working - connection broken - will use N. Hendrson's YSI while he samples. A lot of iron floc in purge elevating turbidity - could not get turb below 45 Sampled @ turb 50 rest of parameters stable. ~~DO~~ Suspect that DO readings are affected by high iron YSI #2, Turb 1501

Refer to page _____ of the corresponding field log book.

Lead acetate None Potassium Iodine None

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: L. O'Connor

Well ID: ~~AW~~ OW-37 Date Sampled: 12/21/05

Time (military)	Water Level (feet)	pH ±0.1	Eh (mv) ±10mV	Specific Conductivity (µs/cm) ±3%	Temp (°C) ±3%	DO (mg/l) ±10%	Turbidity (NTU) <5 ±10%	Flow Rate (ml/min)
12:06	4.45	6.18	26.8	901	9.69	0.96	65	120
12:09	4.45	6.23	23.2	918	9.83	0.74	80	120
12:14	4.45	6.24	20.3	929	10.05	0.60	110	120
12:18	4.45	6.19	21.3	958	8.65	0.93	110	120
12:21	4.45	6.28	21.0	970	8.93	4.59	110	120
12:29	4.45	6.27	17.9	1010	9.60	2.70	108.9	120
12:32	4.45	6.29	16.8	1021	9.62	0.85	98.4	120
12:35	4.45	6.29	16.7	1027	9.50	0.67	107.8	120
12:38	4.45	6.28	16.9	1039	9.26	0.49	113	120
12:41	4.45	6.28	17.0	1046	9.31	0.48	83.1	120
12:44	4.45	6.28	16.3	1064	9.34	0.59	94.7	120
12:47	4.45	6.29	16.0	1077	9.43	0.67	81.2	120
12:50	4.45	6.30	16.1	1087	9.31	0.68	80.8	120
12:53	4.45	6.29	15.4	1099	~~9.44~~ 9.55	4.45	83.9	120
12:56	4.45	6.31	14.9	1108	9.67	4.45	76.2	120
12:59	4.45	6.30	14.7	1116	9.56	4.47	85.8	120
13:04	4.45	6.30	14.6	1129	9.72	3.85	78.9	120
13:11 ~~13:09~~	4.45	6.31	13.0	1144	9.76	3.41	65	120
13:16	4.45	6.31	13.7	1156	9.71	3.10	60	120
13:21	4.45	6.31	13.9	1168	9.61	3.00	55	120
13:26	4.45	6.31	13.9	1177	9.75	2.63	50	120
13:34	4.45	6.31	13.3	1188	9.80	2.14	50	120
1342	4.45	6.31	14.0	1200	9.78	2.13	45	120
1355	4.45	6.31	14.5	1217	9.85	1.50	50	120

air in flow thru cell because of turb. Y

connector

00008

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: Hardison

Well ID: OW-38 Date Sampled: 12/2/05 Arrival Time: 1040 Depart. Time: 1230

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2" inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. 3.8 ft Depth of water from T.O.PVC 3.5 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method lg bladder Purge: Time Start 1100 End 1215

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1108	3.8	6.68	250.4	298	11.75	1.26	149	300
Final Reading	1152	3.9	6.04	101.4	290	11.69	0.36	1.40	300

Sample Collection: Time Start: 1200 End: 1215 Samples Preserved: ~~Yes~~ / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? _____ Length? _____ Floating or Sinking or Other? _____

Comments

YSI #2, Turb 1501

Refer to page _____ of the corresponding field log book.

Potassium Iodide Trunk Lead acetate ___ None

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Asst Job No.: 36800321.00003 Samplers: Henderson

Well ID: OW 38 Date Sampled: 12/20/05

	±0.1	±10mV	±3%	±3%	±10%	<5 ±10%
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1111	3.8	6.31	258.9	291	11.75	0.78	9.84	300
1124	3.8	6.07	[illegible]	295	11.97	0.47	4.38	300
1129	3.8	6.06	144.2	295	11.95	0.49	2.48	300
1134	3.8	6.05	120.1	294	11.87	0.42	2.63	300
1138	3.8	6.05	113.3	293	11.88	0.42	2.40	300
1143	3.8	6.05	105.7	292	11.84	0.39	1.66	300
1147	3.8	6.04	103.3	292	11.72	0.38	1.44	300
1152	3.8	6.04	101.4	290	11.69	0.36	1.40	300

Turb # 2510-1501
YSI # 2

MONITORING WELL SAMPLING WORKSHEET

YSI ID: 4
TURB: 0103

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-209B Date Sampled: 12/21/05 Arrival Time: 10:30 Depart. Time: 1610

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0.0 Breathing Zone 5.0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC 5.56 ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method BLADDAR Purge: Time Start 11:35 End 14:35

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	11:45	6.28	7.06	-36.0	645	9.64	5.10	55.6	264
Final Reading	14:35	6.17	6.88	-49.9	646	10.29	3.94	2.78	152

Sample Collection: Time Start: 14:45 End: 15:50 Samples Preserved: (Yes) / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	Very Slightly yellow
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	(clear)	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? N/A Floating or Sinking or Other? NO

Comments Throttle knob in Controller was leaking. Ran out of Gas (nitrogen). Change the cylinder and also controller.
DO readings were erratic. Took the reading just after pumping each time for the consistency (readings were varying within the range of 0.50 mg/L)

Refer to page -ve with Test Papers (Lead Acetate and Potassium Iodide) of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name: Iron Horse Park Ont Job No.: 36800321.00003 Samplers: SUSHIL P.

Well ID: MW-209B Date Sampled: 12/21/05

		±0.1	±10 mV	±3%		±3%	±10%	±10% (<5)
Time (military)	Water Level (feet)	pH	Eh (mv)	Specific Conductivity (µs/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
11:55	6.10	6.93	-62.5	641	9.57	2.60	13.2	148
12:08	6.15	6.93	-66.9	644	9.77	2.69	7.01	164
12:10	6.17	6.94	-69.2	643	9.86	2.38	7.85	176
12:18	6.17	6.94	-66.8	640	9.77	2.35	6.37	176
12:25	6.17	6.93	-63.8	637	9.84	2.58	8.62	176
12:32	6.17	6.92	-60.9	637	9.73	2.48	10.70	176
12:40	6.17	6.92	-59.0	637	9.78	2.51	11.60	176
12:47	6.17	6.91	-57.7	636	9.80	2.56	16.20	176
12:57	6.17	6.91	-56.3	637	9.78	2.62	14.0	176
13:05	6.17	6.91	-54.8	638	9.80	2.74	12.50	176
13:15 (Ran out of Gas)	6.17	6.90	-52.0	639	9.72	2.86	10.27	176
13:25	6.17	6.90	-49.1	637	9.65	2.99	8.82	164
13:33	6.17	6.89	-49.4	639	9.72	3.10	7.18	164
13:40 (Changed Controller)	6.17	6.89	-50.2	638	9.79	3.25	10.56	136
13:48	6.17	6.89	-49.4	641	9.78	3.40	6.97	144
13:56	6.17	6.89	-48.0	640	9.83	3.50	4.38	152
14:03	6.17	6.89	-47.6	637	9.91	3.52	4.45	152
14:10	6.17	6.89	-47.0	640	9.97	3.58	3.67	152
14:18	6.17	6.89	-46.4	642	10.10	3.69	3.97	152
14:28	6.17	6.88	-45.1	646	10.20	3.82	3.22	152
14:35	6.17	6.88	-44.9	646	10.29	3.94	2.78	152

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-1 Date Sampled: 12/14/5 → 12/21/05 Arrival Time: 1330 Depart. Time: 0900

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: Barcad inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Barcad / Nitrogen Purge: Time Start 1330 End 1415

Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading								
~~12/15~~ 0830 12/16/5 Final Reading	X	7.03	241.8	182	9.48	6.41	<5.0	

Sample Collection: Time Start: _____ End: _____ Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheen	
	(clear)	multiphase	foaming	slimy	algae		

Organic Layer? NO Length? _____ Floating or Sinking or Other? _____

Comments: ~~1330~~ 1415 aprox 1.5 l @ 250 ml/min purged, @ 25 psi.
1500 " 1.5 l for 3 vocs preperserved
1.5 l
1515 1 l
1525 1 l metals

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-01A Date Sampled: 12/14 → 12/21/5 Arrival Time: 1330 Depart. Time: _____

Well secure upon arrival? (Yes) / No PID Readings (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: Bored inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Bored/Nitrogen Purge: Time Start _____ End _____

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading									
Final Reading	12/16/5		6.72 ~~6.43~~	258.4 ~~120.2~~	230 207	9.82	8.73 ~~11.4~~	<5.0	

Sample Collection: Time Start: _____ End: _____ Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	~~black~~	brown	(orange)	red iron floc.	
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? No Length? NO Floating or Sinking or Other? _____

Comments
1330 12/14 No flow @ 40 psi.
12/15 0825 cleaned tubing 45' @ 40 psi got dripping: 450 mls.
12/16/5 new ferrels, dripping few more's, 5 more
12/21/5 0830 new ferrels, re-tightened: 1 l/m 500 @ 25 psi.

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING WORKSHEET

Job Name: Iron Horse Park OU4 Job No.: 36800321.00003 Samplers: S. Hatfield

Well ID: MW-01B Date Sampled: 12/14/5 - 12/21/5 Arrival Time: _____ Depart. Time: _____

Well secure upon arrival? (Yes) No PID Readings (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: Barcad inches ÷ 12 = _____ ft (dia)

Depth of well from T.O.C. _____ ft Depth of well from T.O.PVC. _____ ft

Depth of water from T.O.C. _____ ft Depth of water from T.O.PVC _____ ft

Feet of standing water _____ ft Feet of standing water _____ ft

Volume of standing water _____ gal Volume of standing water _____ gal

Purging Method Barcad / Nitrogen Purge: Time Start 1330 End 1430

	Time	Water Level (feet)	pH	Eh (mV)	Sp. Cond. (us/cm)	Temp (°C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading									
Final Reading		—	6.43	120.7	267	9.62	11.4		

Sample Collection: Time Start: 1600 End: _____ Samples Preserved: Yes / No

Sample Characteristics (circle all applicable)

Describe odor:	none	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheen
	clear	multiphase	foaming	slimy	algae	

Organic Layer? NO Length? NO Floating or Sinking or Other? _____

Comments 12/14/5 1330 dripping for 5 min followed by 200 ml spirt @ 35 psi
1600 sampling
12/15/5 0823 dripping then spirt for 850 mls sample @ 35 psi
12/16/5 New barrels @ 25 psi : 2.2 liters, 2 l amber, ½ of metals (metals later dumped.) (UN preserved)
12/21/5 w/ brass barrel 25 psi – 60 psi : very frozen just dripping poly discharge line deteriorating filled 850 ml for metals, 100 ml for

Refer to page _____ of the corresponding field log book.

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: J. ATHEY

Well ID: 301S Date Sampled: 2/23/06 Arival Time: 0930 Depart. Time: 1240

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0.7 Breathing Zone 2.0 Well Headspace

Well Diameter: 2 inches ÷ 12 = 0.16 ft(dia)

Depth of water from T.O. PVC. 9.07 ft
Depth of well from T.O. PVC. [illegible] ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: LARGE BLADDER Purge Time Start: 1005 End: 1130

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1020	9.17	6.51	-6.5	473	6.04	0.57	18.5	196
Final Reading	1130	9.17	6.58	-15.0	478	6.24	0.27	1.98	200

YSI ID Number: 5 Turbidity ID Number: 3193-1702

Sample Collection : Time Start 1135 End: 1215 Sample Preserved: (Yes) / No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum	_____
Describe color:	(colorless)	black	brown	orange	red	_____
Describe appearance:	turbid	silty	sand	clay	floaters sheeen	_____
	(clear)	multiphas	foaming	slimy	algae	_____

Organic Layer? N Length _____ Floating or Sinking or Other? _____

Comments: _____

Test papers
Lead Acetate: NO RXN Potassium Iodide: NO RXN

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: J. ATHEY

Well ID: 3015 Date Sampled: 2/23/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1020	9.17	6.51	-6.5	473	6.04	0.57	18.5	196	
1025	9.17	6.52	-8.5	476	6.12	0.51	12.3	198	
1030	9.17	6.53	-9.2	477	6.13	0.53	11.5	198	
1035	9.17	6.52	-9.7	475	6.16	0.47	8.13	188	
1040	9.17	6.54	-10.6	476	6.15	0.45	7.39	202	
1045	9.17	6.54	-11.7	477	6.19	0.38	6.13	192	
1050	9.17	6.55	-12.8	478	6.30	0.36	4.75	196	
1055	9.17	6.56	-13.4	478	6.22	0.34	4.47	192	
1100	9.17	6.56	-13.5	478	6.23	0.33	3.65	196	
1105	9.17	6.56	-13.6	478	6.22	0.31	3.04	196	
1110	9.17	6.57	-14.0	478	6.25	0.29	2.5	196	
1115	9.17	6.57	-14.3	478	6.22	0.29	2.36	196	
1120	9.17	6.58	-14.9	478	6.22	0.28	2.07	200	
1125	9.17	6.58	-15.1	478	6.23	0.27	1.77	200	
1130	9.17	658	-15.0	478	6.24	0.27	1.98	200	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: BAD

Well ID: MW-3010 Date Sampled: 2/23/06 Arival Time: 0945 Depart. Time: 1445

Well Secure upon Arrival? (Yes) No (NO LOCK) PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. 9.08 ft
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. 9.33 ft

Purging Method: Bladder Purge Time Start: 1115 End: 1332

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU) (ERT >1100)	Flow Rate (ml/min)
Initial Reading	1117	10.35	7.72	-93.7	232	9.53	2.96	off Scale	184
Final Reading	1326	12.22	7.69	-199.8	173	9.17	0.67	635	132

YSI ID Number: 6 Turbidity ID Number: Y703

Sample Collection : Time Start 1333 End: 1426 Sample Preserved: (Yes) / No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		grey
Describe appearance:	~~turbid~~	silty	sand	clay	floaters	sheeen	
	clear	multiphas	foaming	slimy	algae		

Organic Layer? — Length — Floating or Sinking or Other? —

Comments: Initial problems include dead batteries in MDS650, YSI, and QED. Replaced all then discovered leak in pump. pulled pump to find missing o-ring under catch plate, Replaced started pumping. Drawdown was high. Back pump off as much as possible. Seems to be recovering.

Test papers
Lead Acetate: N/A Potassium Iodide: N/A

Refer to page _____

Pump has become too silted for form good seals w/ check balls. Back flow has become very high. combined w/ low flow controllability w/ controller well has started to draw down again. cannot stop- moved to sampling.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: BAD

Well ID: MW-3010 Date Sampled: 2/23/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1125	11.30	7.70	-110.9	227	8.37	1.96	ER2	104	
1139	11.10	7.68	-116.8	219	7.21	1.52	ER2	37	
1143	11.08	7.68	-115.1	215	6.75	1.49	ER2	54	
1154	11.05	7.68	-112.9	207	6.87	1.37	>1100	52	
1208	11.05	7.68	-107.3	199	7.11	1.28	1079	80	
1212	11.21	7.68	-108.2	197	7.44	1.23	>1100	60	
1217	11.20	7.68	-106.9	196	7.33	1.21	1019	60	
1234	11.10	7.68	-104.2	188	7.32	1.06	842	54	TROUBLE KEEPING
1244	11.07	7.68	-105.0	183	7.86	1.00	943	68	flow stable.
1254	11.62	7.69	-142.2	184	8.71	0.84	821	80	WL, ORP, T seem to
1309	11.62	7.69	-151.6	181	8.47	0.82	738	64	be most affected
1326	12.22	7.69	-199.8	173	9.19	0.67	635	132	by Δ's in flow
1426	12.65	END	METALS	SAMPLE			330		
		Turb dropped due to higher flow							
		rate.							

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: S. Hatfield

Well ID: MW301B Date Sampled: 2/23/16 Arival Time: 0930 Depart. Time: ____

Well Secure upon Arrival? (Yes) No PID Reading (ppm) 0.0 Breathing Zone 0.3 Well Headspace

Well Diameter: 2 inches ÷ 12 = ____ ft(dia) new well

Depth of water from T.O. PVC. ____ ft
Depth of well from T.O. PVC. ____ ft
Depth of well from T.O.C. ____ ft
Depth of water from T.O.C. 8.95 ft

Purging Method: pot bladder Purge Time Start: 10:40 End: 1330

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1100	7.96	7.57	-98.4	157	9.14	1.23	149	78
Final Reading	1320	11.07 11.32	7.54	-257.5	151	9.77	0.78	112	64

YSI ID Number: 2 Turbidity ID Number: 2002

Sample Collection : Time Start 1340 End: ____ Sample Preserved: Yes / No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	colorless	black	brown	orange	red	grey/milky.
Describe appearance:	(turbid)	silty	sand	clay	floaters	sheeen
	clear	multiphas	foaming	slimy	algae	

Organic Layer? NO Length NO Floating or Sinking or Other? NO

Comments: parked on the berm next to drainage ditch next to well. Set up shelter: cloudy 35°F. Placed pump WL: 7.96. Turn pump on 10:40, WL continually dropped 1.5', pump was filling up returned and bypassed initial WL by .5'. Lowered flow rate to 78 ml/min (1100)

Test papers v. turbid.

Lead Acetate: ____ Potassium Iodide: ____

Refer to page ____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: S. Hatfield

Well ID: MW 301 B Date Sampled: 2/23/6

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1100	11.07	7.57	-98.4	157	9.14	1.23	149	78	
1105	11.33	7.57	-116.1	155	8.98	1.17	130	72	
1109	11.50	7.56	-119.0	155	8.83	1.10			
	I am preparing to sample, but wait a minute								
1116	(11.50)	7.56	-145.2	155	8.51	1.11	123	~35	
	flow dropped off by itself. and wl seemed to stabilize								
1121	(11.3)	so I'll take a break here - maybe go get filters.							
1149	11.20	7.53	-182.5	154	8.33	1.16	117	32	
1154	11.06	7.54	-182.5	153	8.50	1.14			
1217	10.97	7.54	-200.3	153	9.02	1.07	114	42	
1232	10.95	7.54	-209.8	153	9.44	1.06	~~10~~	60	
1252	11.15	7.54	-226.1	152	9.87	0.95	110	61	
1310	11.20	7.53	-261.2	151	9.78	0.82	112	64	
1320	11.32	7.54	-257.5	151	9.77	0.78	112	64	
Coming up on 3 hrs (10:40 → 13:40) turb not dropping, flow rate fluctuating and twice shut off - press drop by itself, wl dropping with flow > 60 ml/min so: will sample 1340 hrs - discuss w/ BHO.									
Stabilization Criteria	**±0.1**	**±10 mv**		**±3%**	**±3%**	**±10%**	**<5 ±10%**		

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: BAD

Well ID: MW-3025 Date Sampled: 2/20/06 Arival Time: 1315 Depart. Time: 1540

Well Secure upon Arrival? (Yes) No PID Reading (ppm) — Breathing Zone — Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. 4.76 ft (Ref. pt. 4.95)
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: Bladder Purge Time Start: 1348 End: 1500

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1350	4.95 Ref. pt.	6.55	101.1	220	5.47	4.63	254	366
Final Reading	1456	4.95	6.44	76.9	241	6.13	1.05	4.29	368

YSI ID Number: 5 Turbidity ID Number: SN 3253-2002

Sample Collection : Time Start 1500 End: 1525 Sample Preserved: (Yes) / No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum	
Describe color:	(colorless)	black	brown	orange	red	
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen
	(clear)	multiphas	foaming	slimy	algae	

Organic Layer? — Length — Floating or Sinking or Other? —

Comments: Initial purge full of iron bact.
Batteries dying in Turb meter.

Test papers
Lead Acetate: Neg Potassium Iodide: Neg

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: BAD

Well ID: MW-302S Date Sampled: 2/20/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1400	4.95	6.40	82.6	231	5.49	1.22	86.4	372	getting some bubbles w/purge
1408	4.95	6.39	82.9	233	5.68	1.36	87.9	376	
1412	4.95	6.40	84.8	234	5.75	1.31	48.8	368	
1416	4.95	6.41	82.3	235	5.72	1.26	33.8	368	
1422	4.95	6.41	83.6	237	5.87	1.19	20.5	364	
1426	4.95	6.42	80.3	238	5.90	1.30	19.7	364	
1430	4.95	6.42	82.3	238	5.96	1.25	12.5	364	Still getting few bubbles w/ purge
1434	4.95	6.42	79.6	239	5.98	1.25	9.91	364	
1440	4.95	6.42	79.1	242	5.97	1.25	6.45	364	~~Dying battery on [illegible] ORP~~
1444	4.95	6.43	80.3	241	6.05	1.20	5.85	368	Battery dying in turb meter. Replacement
1448	4.95	6.43	79.2	241	6.04	1.15	4.59	368	also dying.
1452	4.95	6.44	78.3	242	6.10	1.07	4.19	368	
1456	4.95	6.44	76.9	241	6.13	1.05	4.29	368	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: S. Hatfield

Well ID: 303S Date Sampled: 2/20/16 Arival Time: 1030 Depart. Time: 1500

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Flush mount. (not locked.)

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. _____ ft
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. 2.80 ft

Purging Method: portable bladder 1.5" Purge Time Start: 1100 End: 1425

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm)	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	about: 1215 / 1100	2.85 / 2.80	6.14	-26.6	340	7.43	1.79	127	360
Final Reading	initial 1315 / 1422	2.90 / 2.90	6.12 / 6.18	-31.5 / -60.9	315 / 287	6.99 / 6.96	1.74 / 0.15	2.65	360

YSI ID Number: # 3 Turbidity ID Number: 3477-3102

Sample Collection : Time Start 1430 End: 1505 Sample Preserved: (Yes) No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum		_____
Describe color:	(colorless)	black	brown	orange	red		_____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	_____
	(clear)	multiphas	foaming	slimy	algae		_____

Organic Layer? NO Length ~~Floating or Sinking or Other?~~

Comments: set up shelter! 1320
From 1100 to ~~1415~~ tried to get water out of well. 2 - "Bad" pumps + X4 bad gaskets. Finally. bladder clamps seem to do it. Some start and stops because lots of air in discharge line.

Test papers
Lead Acetate: _____ Potassium Iodide: _____

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: S. Hatfield

Well ID: 303-S Date Sampled: 2/20/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1315	2.90	6.12	-31.5	315	6.99	1.74	127	90.4 = 360	
1330	2.90	6.14	-48.1	317	7.00	0.54	67.5	360	WL - 2.85 - 2.95
1352	2.85	6.19	-60.1	296	6.95	0.20	7.38	360	
1408	2.85	6.19	-61.2	290	6.96	0.16	3.2	360	
1414	2.90	6.18	-61.2	288	6.97	0.16	284	360	
1418	2.90	6.18	-60.7	286	6.96	0.16	2.70	360	
1422	2.90	6.18	-60.9	287	6.96	0.15	2.65	360	
1430	Sample. Done.								
Stabilization Criteria		**±0.1**	**±10 mv**	**±3%**	**±3%**	**±10%**	**<5 ±10%**		

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: S. Hetfield (start)

Well ID: MW304S Date Sampled: 2/21/06 Arival Time: 1000 Depart. Time: 1230

Well Secure upon Arrival? (Yes) No PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. _____ ft
~~Depth of well from T.O. PVC.~~ _____ ft
~~Depth of well from T.O.C.~~ _____ ft
Depth of water from T.O.C. 6.05 ft

Purging Method: port bladder Purge Time Start: 1030 End: 1135

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1030	6.05	7.6	90.3	109	7.41	10.78	2.58	240
Final Reading	1130	6.08	6.51	214.4	77	6.99	10.13	0.31	210

YSI ID Number: 4 Turbidity ID Number: 3477-3102

Sample Collection : Time Start 1140 End: 1200 Sample Preserved: Yes / No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum		_____
Describe color:	(colorless)	black	brown	orange	red		_____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	_____
	(clear)	multiphas	foaming	slimy	algae		_____

Organic Layer? No Length _____ Floating or Sinking or Other? _____

Comments: Set up, took initial reading and left to help Walton set-up ow 305-D
Cloudy, cool. No tent set up, aprox 35°F

Test papers
Lead Acetate: — Potassium Iodide: —

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: S. Hatfield

Well ID: MW304 S Date Sampled: 2/21/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1030	6.05	7.60	90.3	109	7.41	10.78	2.38	240	
1115	6.08	6.56	213.4	76	6.96	10.14	0.38	55.4 = 220	15 psi
1120	6.08	6.56	214.2	77	6.98	10.13	0.34	59.4 = 236	+36
1125	6.08	6.53	213.1	77	7.00	10.13	0.32	51 = 204	
1130	6.08	6.51	219.4	77	6.99	10.13	0.31	= 210	
1140	Sample Here								

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: JCM

Well ID: MW-304D Date Sampled: 2/21/06 Arival Time: 1030 Depart. Time: 1415

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2 11 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. ~~6.14~~ 5cm ft 6.00
Depth of well from T.O. PVC. ~~27.45~~ ft
Depth of well from T.O.C. ~~27.11~~ ft
Depth of water from T.O.C. 27.59 ft

Purging Method: BLADDER Purge Time Start: 1105 End: 1240

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1105	6.15	6.82	177.9	214	10.27	1.27	74.8	320
Final Reading	1240	6.16	6.22	198.5	202	9.19	1.71	4.83	100

YSI ID Number: 2 Turbidity ID Number: 3263-2002

Sample Collection : Time Start 1245 End: 1350 Sample Preserved: (Yes)/No

Sample Characteristics ***(circle all that apply)***

Describe odor:	none	sulfide	fishy	musty	petroleum		
Describe color:	~~colorless~~	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	
	(clear)	multiphasfoaming		slimy	algae		

Organic Layer? N Length N/A Floating or Sinking or Other? N/A

Comments: SHEEN OBSVD ON WATER IN TURBIDITY VIAL.

Test papers
Lead Acetate: NR Potassium Iodide: NR

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: JCM

Well ID: MW 304D Date Sampled: 2/21/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1115	6.15	6.73	189.0	211	9.07	1.40	68.7	100	
1120	6.16	6.69	195.3	208	10.03	1.26	45.1	100	
1125	6.16	6.67	196.7	207	10.09	1.33	29.5	100	
1130	6.16	6.65	197.9	208	10.28	1.44	18.2	100	
1135	6.16	6.65	198.3	207	10.30	1.44	15.4	100	
1140	6.16	6.64	198.2	206	10.35	1.43	14.7	100	
1145	6.16	6.64	197.7	206	10.30	1.51	12.5	100	
1150	6.16	6.63	198.0	205	10.32	1.52	10.41	100	
1155	6.16	6.63	198.0	203	10.27	1.50	3.65	100	SHEEN OBSVD ON TURB VIAL
1200	6.16	6.62	198.0	204	10.33	1.54	7.65	100	
1205	6.16	6.62	197.4	201	10.34	1.68	7.97	100	
1210	6.16	6.62	196.9	204	10.36	1.65	6.98	100	
1215	6.16	6.62	196.5	201	10.46	1.69	6.74	100	
1220	6.16	6.62	196.8	201	9.97	1.72	6.91	100	
1225	6.16	6.62	197.0	202	9.42	1.75	5.58	100	
1230	6.16	6.62	199.6	202	9.38	1.78	5.34	100	
1235	6.16	6.62	198.7	203	9.26	1.70	5.12	100	
1240	6.16	6.62	198.5	202	9.29	1.71	4.83	100	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: J. ATHEY

Well ID: 3043 Date Sampled: 2/21/06 Arival Time: 10:00 Depart. Time: 1240

Well Secure upon Arrival? (Yes) No PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = 1.33 ft(dia)

Depth of water from T.O. PVC. 5.74 ft
Depth of well from T.O. PVC. ~~20.27~~ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: LARGE BLADDER Purge Time Start: 10:28 End: 1120

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	10:33	6.3	7.41	~~-120.9~~	1143	8.78	3.43	107.2	140
Final Reading	1120	6.3	7.27	-167.3	1399	10.27	0.35	1.98	216

YSI ID Number: 3 Turbidity ID Number: 4815-5203

Sample Collection : Time Start 1135 End: 1220 Sample Preserved: Yes / No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	
	(clear)	multiphas	foaming	slimy	algae		

Organic Layer? N Length _____ Floating or Sinking or Other? _____

Comments: _____

Test papers
Lead Acetate: N/R Potassium Iodide: N/R

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: J. ATNEY

Well ID: 304B Date Sampled: 2/21/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1033	6.3	7.41	-120.9	1143	8.78	3.43	107.2	140	
1040	6.25	7.37	-178.4	1137	9.30	0.95	519	200	
1045	6.25	7.39	-210.7	1136	9.56	0.61	68.2	212	
1050	6.3	7.43	-244.3	1144	9.92	0.45	72.2	196	
1055	6.3	7.43	-256.2	1148	9.78	0.43	4.61	212	
1100	6.3	7.35	-223.9	1254	10.01	0.39	3.25	212	
1105	6.3	7.31	-197.0	1331	10.03	0.37	2.56	216	
1110	6.3	7.28	-173.9	1389	10.10	0.39	2.17	212	
1115	6.3	7.28	-171.2	1390	10.17	0.36	2.19	216	
1120	6.3	7.27	-167.3	1399	10.27	0.35	1.98	216	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: J. ATHEY

Well ID: MW-305S Date Sampled: 2/21/06 Arival Time: 1345 Depart. Time: 1535

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = 1.33 ft(dia)

Depth of water from T.O. PVC. 8.38 ft
Depth of well from T.O. PVC. ~~8.31~~ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: LARGE BLADDER Purge Time Start: 1410 End: 1510

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1420	8.38	6.83	83.7	589	6.22	0.59	15.1	356
Final Reading	1510	8.38	6.78	84.3	589	6.14	0.57	1.07	360

YSI ID Number: 5 Turbidity ID Number: 5293-350

Sample Collection : Time Start 1515 End: 1540 Sample Preserved: Yes / No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum		_____
Describe color:	(colorless)	black	brown	orange	red		_____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	_____
	(clear)	multiphas	foaming	slimy	algae		_____

Organic Layer? N Length _____ Floating or Sinking or Other? _____

Comments: _____

Test papers
Lead Acetate: No RXN Potassium Iodide: No RXN

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: J. ATNEY

Well ID: MW-305S Date Sampled: 2/21/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1420	8.38	6.83	83.7	589	6.22	0.59	15.1	356	
1425	8.38	6.82	82.4	588	6.25	0.57	8.62	356	
1430	8.38	6.83	82.6	586	6.23	0.58	6.99	356	
1435	8.38	6.82	82.7	588	6.21	0.60	6.50	356	
1440	8.38	6.81	83.0	588	6.21	0.58	6.14	356	
1445	8.38	6.80	82.0	588	6.22	0.57	2.99	356	
1450	8.38	6.80	83.4	588	6.23	0.60	1.99	356	
1455	8.38	6.79	82.7	588	6.18	0.59	1.95	360	
1500	8.38	6.79	83.8	588	6.16	0.59	1.03	360	
1505	8.38	6.79	84.0	588	6.15	0.59	1.04	360	
1510	8.38	6.78	84.3	589	6.14	0.57	1.07	360	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: N Hudson

Well ID: MW305D Date Sampled: 2/2/16 Arival Time: 1050 Depart. Time: 1440

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0.0 Breathing Zone 0.3 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. _____ ft
~~Depth of well from T.O. PVC.~~ _____ ft
~~Depth of well from T.O.C.~~ _____ ft
Depth of water from T.O.C. 8.49 ft

Purging Method: Port bladder Purge Time Start: 1050 End: 1420

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1054	8.55	7.18	139.4	1109	7.71	1.91	1.42	320
Final Reading	1202	8.55	7.62	92.5	1316	8.30	0.22	1.24	240

YSI ID Number: 5 Turbidity ID Number: 5293-3504

Sample Collection : Time Start 1215 End: 1420 Sample Preserved: (Yes) / No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum		_____
Describe color:	(colorless)	black	brown	orange	red		_____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	_____
	(clear)	multiphas	foaming	slimy	algae		_____

Organic Layer? None Length — Floating or Sinking or Other? —

Comments: _____

Test papers
Lead Acetate: None Potassium Iodide: None

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: Henderson

Well ID: 305 D Date Sampled: 2-21-08

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1100	8.55	7.38	137.0	1251	8.14	1.11	1.40	320	
1105	8.55	7.48	129.4	1303	8.38	0.60	1.89	320	
1110	8.55	7.51	117.1	1297	8.37	0.36	3.72	320	
1115	8.55	7.55	121.6	1326	8.31	0.45	4.74	240	
1122	8.55	7.55	126.9	1325	8.40	0.34	3.63	240	
1132	8.55	7.56	118.0	1324	8.38	0.22	2.59	240	
1138	8.55	7.58	110.0	1321	8.38	0.21	1.86	240	
1145	8.55	7.61	98.2	1319	8.37	0.19	1.34	240	
1155	8.55	7.62	95.4	1317	8.36	0.21	1.19	240	
1202	8.55	7.62	92.5	1316	8.30	0.22	1.24	240	
Stabilization Criteria		±0.1	±10 mv	±3%	±3%	±10%	<5 ±10%		

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: J. ATHEY

Well ID: MW-306S Date Sampled: 2/23/06 Arival Time: 1320 Depart. Time: 1535

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) _____ Breathing Zone _____ Well Headspace

Well Diameter: 2" inches ÷ 12 = 0.16 ft(dia)

Depth of water from T.O. PVC. 7.28 ft
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. 7.88 ft

Purging Method: LARGE BLADDER Purge Time Start: 1340 End: 1455

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1350	7.91	7.34	-70.6	370	7.87	1.69	17.5	200
Final Reading	1455	7.91	7.37	-72.6	369	7.82	1.77	0.43	236

YSI ID Number: 5 Turbidity ID Number: 3193-1702

Sample Collection : Time Start 1505 End: 1523 Sample Preserved: (Yes)/ No

Sample Characteristics *(circle all that apply)*

Describe odor:	none	sulfide	fishy	musty	(petroleum)	_____
Describe color:	(colorless)	black	brown	orange	red	_____
Describe appearance:	turbid	silty	sand	clay	floaters sheeen	_____
	(clear)	multiphas	foaming	slimy	algae	_____

Organic Layer? N Length _____ Floating or Sinking or Other? _____

Comments: NOTE THAT ALL TIME RECORDINGS ON THIS SAMPLING SHEET ARE 30 MINUTES BEHIND THE ACTUAL TIME (MY WATCH WAS 30 MINUTES SLOW) THE CORRECTED SAMPLE TIME WAS PROVIDED TO THE LAB.

Test papers
Lead Acetate: NO RXN Potassium Iodide: NO RXN

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: J. AMEY

Well ID: 306S Date Sampled: 2/23/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1350	7.91	7.34	-70.6	370	7.87	1.69	17.5	200	
1355	7.91	7.35	-70.8	374	7.86	1.70	14.8	240	
1400	7.91	7.35	-70.9	387	7.87	1.69	14.39	236	
1420	7.91	7.36	-70.6	369	7.87	1.75	5.79	236	TIME LAPSE B/C IT STARTED RAINING
1430	7.91	7.36	-71.9	371	7.87	1.80	3.43	236	
1435	7.91	7.36	-71.2	369	7.87	1.80	1.75	232	
1440	7.91	7.36	-72.2	370	7.81	1.77	0.47	232	
1445	7.91	7.36	-72.3	371	7.84	1.77	0.44	236	
1450	7.91	7.37	-72.4	370	7.86	1.76	0.42	240	
1455	7.91	7.37	-72.6	369	7.82	1.77	0.43	236	
Stabilization Criteria		**±0.1**	**±10 mv**	**±3%**	**±3%**	**±10%**	**<5 ±10%**		

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: JCM

Well ID: MW-3025 Date Sampled: 2/22/06 Arival Time: 0930 Depart. Time: ____

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0 (Breathing Zone) 0 (Well Headspace)

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. ~~8.95~~ JCM ft 8.78'
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. 8.95 ft
Depth of water from T.O.C. _____ ft

Purging Method: Bladder Purge Time Start: 1050 End: _____

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1050	9.05	7.50	-69.0	328	6.48	6.34	23.2	80
Final Reading	1240	9.06	7.33	-25.1	321	8.22	0.79	1.84	95

YSI ID Number: 1 Turbidity ID Number: 3263-2502

Sample Collection : Time Start _____ End: _____ Sample Preserved: (Yes) No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum	_____
Describe color:	(colorless)	black	brown	orange	red	_____
Describe appearance:	(turbid)	silty	sand	clay	floaters sheeen	_____
	(clear)	multiphas	foaming	slimy	algae	_____

Organic Layer? N Length N/A Floating or Sinking or Other? N/A

Comments: _____

Test papers
Lead Acetate: _____ Potassium Iodide: _____

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: JCM

Well ID: MW-307S Date Sampled: 2/22/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1100	9.06	7.49	-73.6	330	6.87	3.58	19.5	100	
1105	9.06	7.45	-56.4	316	7.57	1.29	8.89	100	
1120	9.06	7.41	-49.5	316	7.63	1.01	5.47	100	
1125	9.06	7.41	-46.0	317	7.75	0.96	5.32	95	
1130	9.06	7.39	-41.1	318	7.79	1.01	5.40	95	
1135	9.06	7.39	-38.1	319	7.72	1.04	5.28	90	
1140	9.06	7.38	-37.1	322	7.89	1.06	5.08	100	
1145	9.06	7.38	-37.5	322	8.01	.082	4.68	100	
1150	9.06	7.37	-36.7	323	8.10	0.76	4.61	100	
1155	9.06	7.36	-36.1	324	8.20	0.91	4.65	100	
1200	9.06	7.35	-34.8	324	8.08	0.78	4.27	100	
1205	9.06	7.35	-34.2	323	8.05	0.74	4.09	100	
1210	9.06	7.35	-33.1	322	8.02	0.82	3.66	100	
1215	9.06	7.34	-32.3	321	7.94	0.69	3.28	100	
1220	9.06	7.35	-30.4	320	7.98	0.80	2.82	100	
1225	9.06	7.34	-29.1	320	8.04	0.81	2.51	100	
1230	9.06	7.34	-27.8	320	8.09	0.82	2.25	95	
1235	9.06	7.34	-26.5	321	8.15	0.80	2.14	95	
1240	9.06	7.33	-25.1	321	8.22	0.79	1.84	95	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: Henderson

Well ID: 307 D Date Sampled: 2-22-06 Arival Time: 930 Depart. Time: ____

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0.0 Breathing Zone 0.0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. _____ ft
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. ~~5.45~~ ft
Depth of water from T.O.C. 5.45 ft

Purging Method: Large bladder Purge Time Start: 1009 End: _____

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1013	5.45	7.05	8.3	942	9.02	2.85	257	320
Final Reading	1257	5.45	7.12	-298.1	924	9.52	0.81	229	220

YSI ID Number: 2 Turbidity ID Number: 393-1702

Sample Collection : Time Start 1300 End: _____ Sample Preserved: Yes / No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum		_____
Describe color:	(colorless)	black	brown	orange	red		_____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	_____
	(clear)	multiphas	foaming	slimy	algae		_____

Organic Layer? ____ Length _____ Floating or Sinking or Other? _____

Comments: _____

Test papers
Lead Acetate: None Potassium Iodide: None

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: Henderson

Well ID: 307 D Date Sampled: 2-22-06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1020	5.45	7.04	-126.1	957	8.93	1.65	156	200	
1027	5.45	7.06	-149.1	939	8.88	1.40	64.1	220	
1035	5.45	7.08	-159.7	928	9.02	1.31	44.3	220	
1047	5.45	7.09	-175.4	923	8.95	1.14	23.4	220	
1100	5.45	7.10	-198.2	920	9.08	1.11	9.18	220	
1112	5.45	7.10	-223.0	922	9.11	1.02	7.18	220	
1124	5.45	7.11	-216.0	923	9.25	0.77	5.71	220	
1135	5.45	7.11	-226.7	923	9.42	1.11	3.95	220	
1146	5.45	7.11	-241.1	925	9.59	0.61	2.74	220	
1156	5.45	7.11	-284.4	926	9.48	1.03	2.76	220	
1203	5.45	7.11	-270.4	924	9.51	1.04	2.38	220	ORP still Dancing
1208	5.45	7.11	-249.0	925	9.64	1.04	2.72	220	
1218	5.45	7.12	-269.0	921	9.52	0.92	2.70	220	
1225	5.45	7.12	-277.0	921	9.55	0.61	2.48	220	
1242	5.45	7.12	-309.8	924	9.67	0.60	2.36	220	
1247	5.45	7.12	-280.9	926	9.64	0.88	2.25	220	
1253	5.45	7.12	-248.4	923	9.61	0.93	2.36	220	
1257	5.45	7.12	-288.1	924	9.52	0.81	2.28	220	ORP all over - Still Skyrocketing.
Stabilization Criteria		**±0.1**	**±10 mv**	**±3%**	**±3%**	**±10%**	**<5 ±10%**		

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: S. Hatfield

Well ID: MW307B Date Sampled: 2/22/6 Arival Time: 0915 Depart. Time: 1300

Well Secure upon Arrival? (Yes)/No PID Reading (ppm) 0.0 Breathing Zone 0.0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. _____ ft
~~Depth of well from T.O.PVC~~ _____ ft
~~Depth of well from T.O.C~~ _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: portable bladder Purge Time Start: 1000 End: 1205

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	~~8.30~~ 1010	8.30	7.37	-156.4	259	8.83	1.43	21.5	~~65.2~~ -130
Final Reading	1205	8.95	7.77	-315.0	254	9.75	0.32	2.82	220

YSI ID Number: #3 Turbidity ID Number: 3102

Sample Collection : Time Start 1215 End: 1230 Sample Preserved: (Yes)/ No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum		
Describe color:	(colorless)	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	v.v. little turbidity
	(clear)	multiphasfoaming		slimy	algae		

Organic Layer? ND Length ND Floating or Sinking or Other? _____

Comments: 2" PVC is loose in casing.
WL dropped to 9.1 initially - just to get water out of ground. lowered psi to 42 from 50.
WL recovered to 8.9 w/ lowered psi.
Hard time regulating flow - too much psi = drawdown, a little less = no flow. GW always a little cloudy.

Test papers
Lead Acetate: _____ Potassium Iodide: _____

Refer to page _____

Sample: no diff.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: S. Hatfield

Well ID: MW 307 B Date Sampled: 2/22/6

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1010	8.3	7.37	-156.4	259	8.83	1.43	21.5	130	
1018	8.9	7.42	-179.9	258	9.07	0.91	19.2	84.2 168	160.
1035	8.9	7.52	-287.8	260	9.49	0.48	9.79	168	← Nathan took the reading.
1047	8.9	7.61	-264.1	263	9.40	0.81	8.23	65.2 = 130	
1115	8.9	7.54	-236.1	258	9.70	0.72	4.31	140	← took lunch
1120	8.6	7.56	-273.3	255	9.71	0.57	3.94	140	← flow interrupted low ? psi.
1136	8.8	7.62	-266.7	252	9.73	0.44	3.88	160	
1142	8.91	7.63	-271.2	253	9.78	0.44	3.13	42.4 168	
1148	8.93	7.68	-292.5	255	9.82	0.42	2.96	72.4 = 288	
1155	8.93	7.74	-305.5	254	9.82	0.34	2.98	240	
1200	8.95	7.76	-311.8	253	9.79	0.32	2.89	240	
1205	8.95	7.77	-315.0	254	9.75	0.32	2.82	220	
1215	Sample time.								

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: J. ATIEH

Well ID: OW-7 Date Sampled: 2/22/06 Arival Time: 0930 Depart. Time: 1300

Well Secure upon Arrival? Yes/No PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = 1.33 ft(dia)

Depth of water from T.O. PVC. 6.18 ft
Depth of well from T.O. PVC. ~~9.15~~ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: LARGE BLADDER Purge Time Start: 1005 End: 1130

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1005	6.25	6.2	82.0	445	9.47	1.85	37.7	240
Final Reading	1135	6.25	6.24	~~78.7~~	520	9.30	~~0.48~~ 0.49 JWA	~~3.03~~ 3.31 JWA	240

YSI ID Number: 5 Turbidity ID Number: 4815-5203

Sample Collection : Time Start ~~1135~~ 1145 JWA End: 1215 Sample Preserved: Yes / No

Sample Characteristics ***(circle all that apply)***

Describe odor:	none	sulfide	fishy	musty	petroleum	_____
Describe color:	colorless	black	brown	orange	red	_____
Describe appearance:	turbid	silty	sand	clay	floaters sheeen	_____
	clear	multiphas	foaming	slimy	algae	_____

Organic Layer? N Length _____ Floating or Sinking or Other? _____

Comments: _____

Test papers
Lead Acetate: NR Potassium Iodide: NR

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: J. AINEY

Well ID: OW-7 Date Sampled: 2/22/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1005	6.25	6.2	82.0	445	9.47	1.85	37.7	240	
1010	6.25	6.24	73.2	458	9.26	0.75	32.7	240	
1015	6.25	6.23	72.2	460	9.27	0.71	31.1	240	
1020	6.25	6.23	70.7	465	9.26	0.67	23.6	240	
1025	6.25	6.23	69.7	467	9.28	0.66	22.8	240	
1030	6.25	6.23	69.2	471	9.24	0.62	19.1	240	
1035	6.25	6.24	70.7	485	9.26	0.66	12.4	240	
1040	6.25	6.24	71.0	498	9.35	0.58	9.3	240	
1045	6.25	6.23	71.4	500	9.38	0.64	8.55	240	
1050	6.25	6.24	72.2	503	9.34	0.61	6.80	240	
1055	6.25	6.24	71.9	508	9.32	0.56	6.65	240	
1100	6.25	6.25	73.9	509	9.31	0.56	6.24	240	
1105	6.25	6.24	74.0	513	9.26	0.54	6.34	240	
1110	6.25	6.25	76.6	514	9.27	0.55	5.51	240	
1115	6.25	6.24	77.0	515	9.17	0.55	5.42	240	
1120	6.25	6.24	78.7	518	9.30	0.56	3.76	240	
1125	6.25	6.24	77.6	520	9.32	0.52	3.08	240	
1130	6.25	6.24	77.2	521	9.35	0.48	3.63	240	
1135	6.25	6.24	78.4	520	9.30	0.49	3.31	240	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: BAD

Well ID: OW-8 Date Sampled: 2/22/06 Arival Time: 0930 Depart. Time: 1145

Well Secure upon Arrival? Yes/No PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. 6.25 ft (Ref. 6.53')
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: Bladder Purge Time Start: 0958 End: 1104

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1000	6.53	7.07	-64.0	428	8.77	2.28	28.4	280
Final Reading	1104	6.53	6.60	-58.6	406	9.37	0.24	2.94	260

YSI ID Number: 4 Turbidity ID Number: SN 5293-3504

Sample Collection : Time Start 1105 End: 1140 Sample Preserved: Yes / No

Sample Characteristics *(circle all that apply)*

Describe odor:	none (BAD)	sulfide (slight)	fishy	musty	petroleum		
Describe color:	colorless	black	brown	orange	red		
Describe appearance:	turbid	silty	sand	clay	floaters (few white)	sheeen	
	clear	multiphasfoaming		slimy	algae		

Organic Layer? _____ Length _____ Floating or Sinking or Other? _____

Comments: No problems, pumping smooth no drawdown for shallow well Alkalynity seems high - 4 drops HCl per VOA typ. 2-3.

Test papers
Lead Acetate: Neg Potassium Iodide: Neg

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: BAD

Well ID: OW-8 Date Sampled: 2/22/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1008	6.53	6.65	-59.0	412	9.12	0.66	15.7	288	
1014	6.53	6.62	-59.9	410	9.13	0.53	16.2	292	
1022	6.53	6.60	-59.2	408	9.20	0.38	12.3	288	
1028	6.53	6.59	-59.2	407	9.26	0.34	8.59	288	
1032	6.53	6.59	-58.9	407	9.28	0.32	6.85	300	
1036	6.53	6.60	-58.6	407	9.30	0.31	5.56	268	
1053	6.53	6.58	-57.5	405	9.43	0.26	4.17	264	
1100	6.53	6.59	-57.8	406	9.41	0.25	3.21	272	
1104	6.53	6.60	-58.6	406	9.37	0.24	2.94	260	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: BAN

Well ID MW-308R Date Sampled: 2/22/06 Arival Time: 1145 Depart. Time: 1525

Well Secure upon Arrival? (Yes/No) PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. 6.52 ft
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. _____ ft
Depth of water from T.O.C. _____ ft

Purging Method: Bladder Purge Time Start: 1235 End: 1413

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	~~1210~~ 1241	6.69	7.35	60.6	730	8.54	6.65	82.8	160
Final Reading	1412	6.73	7.03	-32.5	805	8.43	0.74	4.14	94

YSI ID Number: 4 Turbidity ID Number: SN 5293-3504

Sample Collection : Time Start 1415 End: 1510 Sample Preserved: (Yes) / No

Sample Characteristics *(circle all that apply)*

Describe odor:	(none)	sulfide	fishy	musty	petroleum		_____
Describe color:	(colorless)	black	brown	orange	red		_____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	_____
	(clear)	multiphas	foaming	slimy	algae		_____

Organic Layer? _____ Length _____ Floating or Sinking or Other? _____

Comments: Initial water table recovery after pump insertion lower than pre-insert level. Battery died on meter replaced found WL higher by ~0.09'. Flow rate ever so often jumps up or down. Thought recorded (because of disbelief) one purge ~80ml when previous was 40ml. When remeasured @ 20ml.

Test papers
Lead Acetate: Neg Potassium Iodide: Neg

Refer to page _____

Fine bubbles in tubing and turb vial - possibly off-gassing /effervescence.

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: BAD

Well ID: MW-308B Date Sampled: 2/22/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1246	6.80	7.03	34.5	771	8.85	1.57	85.8	160	
1255	6.80	6.92	18.9	773	8.73	1.02	41.5	84	(1st try 320ml/min)
1307	6.73	6.91	8.0	774	8.32	0.97	31.1	96	
1312	6.73	6.93	1.0	772	8.80	0.94	29.4	96	
1318	6.73	6.93	-6.5	775	8.46	0.96	20.1	92	
1325	6.73	6.96	-10.0	778	8.59	1.01	11.9	92	
1330	6.73	6.98	-12.5	783	8.63	1.03	10.54	92	
1334	6.73	7.00	-15.8	789	8.64	1.03	7.53	92	
1337	6.73	7.00	-17.6	794	8.56	1.03	7.83	92	
1347	6.73	7.01	-22.3	803	8.56	0.97	7.77	88	(1st try 240ml/min
1353	6.73	7.02	-27.6	798	8.95	0.83	5.89	94	controller is not
1356	6.73	7.02	-28.1	806	8.62	0.80	5.78	88	Consistantly discharging
1359	6.73	7.03	-26.9	807	8.46	0.78	5.85	80	
1402	6.73	7.03	-28.4	808	8.36	0.77	5.61	88	
1405	6.73	7.03	-29.2	806	8.36	0.76	4.98	94	
1408	6.73	7.03	-30.3	805	8.38	0.76	4.38	90	
1412	6.73	7.03	-32.5	805	8.43	0.74	4.14	~~92~~ 94	

DAD 6.73 Not 7.73

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: JCM

Well ID: 225 Date Sampled: 2/20/06 Arival Time: 1015 Depart. Time: 1535

Well Secure upon Arrival? Yes/(No) PID Reading (ppm) 0 Breathing Zone 0 Well Headspace

NO BOLTS ON RB
NO LOCK ON well plug

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. 2.25 ft
Depth of well from T.O. PVC. 16.23 ft
Depth of well from T.O.C. 2.46 ft
Depth of water from T.O.C. 16.44 ft

Purging Method: BAILER Purge Time Start: 1132 End: 1345

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1132	2.29	6.14	-42.8	277	8.85	0.86	13.5	205
Final Reading	1345	2.27	6.11	-57.3	262	8.97	0.26	4.87	90

YSI ID Number: 2 Turbidity ID Number: 4815-5203

Sample Collection : Time Start 1400 End: 1510 Sample Preserved: (Yes) / No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum	_____
Describe color:	(colorless)	black	brown	orange	red	_____
Describe appearance:	turbid	silty	sand	clay	floaters sheeen	_____
	(clear)	multiphas	foaming	slimy	(algae) ?	_____

Organic Layer? N/A Length _____ Floating or Sinking or Other? _____

Comments: _____

Test papers
Lead Acetate: NR Potassium Iodide: NR

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: JCM

Well ID: 202 S Date Sampled: 2/20/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1042	2.27	6.11	-51.2	276	9.73	0.65	10.2	205	
1048	2.27	6.12	-57.7	274	9.87	0.43	10.17	215	
1054	2.27	6.11	-62.1	272	9.88	0.31	10.10	210	
1201	2.27	6.11	-64.5	271	9.90	0.26	10.68	210	
1205	2.27	6.10	-66.0	270	9.92	0.24	10.42	210	
1210	2.27	6.10	-67.6	268	9.93	0.27	10.35	210	
1215	2.27	6.10	-67.6	267	9.80	0.24	10.20	210	
1220	2.27	6.10	-65.7	267	9.70	0.24	10.39	210	
1225	2.28	6.10	-65.0	268	9.42	0.25	10.03	210	
1230	2.25	6.10	-62.2	267	9.31	0.26	10.14	150	
1235	2.25	6.10	-59.7	266	9.38	0.27	9.28	90	
1240	2.25	6.10	-54.4	265	9.19	0.28	9.08	90	
1245	2.25	6.10	-54.9	265	9.17	0.28	8.25	90	
1250	2.26	6.10	-53.0	265	8.96	0.28	8.44	90	
1255	2.26	6.10	-50.3	263	8.91	0.28	8.36	90	
1300	2.26	6.11	-49.5	264	9.02	0.28	7.19	90	
1305	2.26	6.11	-51.9	264	9.17	0.28	6.76	90	
1310	2.26	6.10	-53.1	264	9.27	0.27	6.86	90	
1315	2.27	6.10	-56.4	264	9.09	0.27	5.95	90	
1320	2.27	6.11	-56.3	263	9.09	0.27	5.64	90	
1325	2.27	6.11	-56.8	262	9.08	0.27	5.61	90	
1330	2.27	6.11	-57.0	262	9.08	0.26	5.37	90	
1335	2.27	6.11	-58.3	262	9.06	0.27	5.17	90	
1340	2.27	6.11	-58.0	262	9.01	0.27	4.92	90	
1345	2.27	6.11	-57.3	262	8.97	0.26	4.87	90	
Stabilization Criteria		**±0.1**	**±10 mv**	**±3%**	**±3%**	**±10%**	**<5 ±10%**		

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: Henderson

Well ID: 2029 Date Sampled: 2-20-06 Arival Time: 1015 Depart. Time: ____

Well Secure upon Arrival? (Yes) No PID Reading (ppm) 0.0 Breathing Zone 0.0 Well Headspace

Well Diameter: 2 inches ÷ 12 = ____ ft(dia)

Depth of water from T.O. PVC. 2.1 ft
Depth of well from T.O. PVC. ____ ft
Depth of well from T.O.C. 22 ft
Depth of water from T.O.C. 2.4 ft

Purging Method: Bladder Purge Time Start: 1030 End: ____

	Time	Water Level (ft) TOC	pH	ORP (mv)	Sp. Cond (µs/cm	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (mi/min)
Initial Reading	1041	2.4	6.34	135.2	226	11.4	3.2	12.5	300
Final Reading	1134	2.4	5.52	178.1	224	11.29	1.44	275	240

YSI ID Number: 5 Turbidity ID Number: 4815-5203

Sample Collection : Time Start 1140 End: ____ Sample Preserved: (Yes) No

Sample Characteristics ***(circle all that apply)***

Describe odor:	(none)	sulfide	fishy	musty	petroleum		____
Describe color:	(colorless)	black	brown	orange	red		____
Describe appearance:	turbid	silty	sand	clay	floaters	sheeen	____
	(clear)	multiphas	foaming	slimy	algae		____

Organic Layer? — Length — Floating or Sinking or Other? —

Comments: ____

Test papers
Lead Acetate: None Potassium Iodide: None

Refer to page ____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: Henderson

Well ID: 202D Date Sampled: 2-20-06

Time Military	TOC Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1050	2.4	5.59	151.6	220	11.28	2.31	9.28	240	
1055	2.4	5.55	155.7	220	11.24	2.10	6.55	240	
1101	2.4	5.56	162.9	222	11.24	1.77	4.84	240	
1105	2.4	5.55	165.4	223	11.31	1.64	4.20	240	
1112	2.4	5.54	168.4	224	11.31	1.53	3.27	240	
1117	2.4	5.55	173.3	225	11.42	1.49	3.46	240	
1122	2.4	5.54	174.1	224	11.03	1.44	2.72	240	
1129	2.4	5.53	177.6	224	11.28	1.42	2.81	240	
1134	2.4	5.52	178.1	224	11.29	1.44	2.75	240	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

MONITORING WELL SAMPLING SHEET

Job Name: Iron Horse Park OU4 **JobNo:** 36800321.00003 Samplers: BAD

Well ID: MW-202B Date Sampled: 2/20/06 Arival Time: 1030 Depart. Time: 1400

Well Secure upon Arrival? Yes/No (No Lock) PID Reading 0 (ppm) 0 Breathing Zone 0 Well Headspace

Well Diameter: 2 inches ÷ 12 = _____ ft(dia)

Depth of water from T.O. PVC. 1.97 ft
Depth of well from T.O. PVC. _____ ft
Depth of well from T.O.C. ~~2.67~~ ft
Depth of water from T.O.C. 2.15 ft

Purging Method: Micro Bladder Purge Time Start: 1213 End: _____

	Time	Water Level (ft)	pH	ORP (mv)	Sp. Cond (µs/cm)	Temp (0C)	DO (mg/l	Turbidity (NTU)	Flow Rate (ml/min)
Initial Reading	1217	2.00	8.26	-22.5	226	9.69	7.28	41	70
Final Reading	1522	2.4	7.98	7.7	164	9.44	0.32	16.9	99

YSI ID Number: 4 Turbidity ID Number: 5293-3504

Sample Collection : Time Start 1530 End: 1400 Sample Preserved: Yes / No

Sample Characteristics *(circle all that apply)*

Describe odor:	~~none~~	sulfide	fishy	musty	petroleum	_____
Describe color:	colorless	black	brown	orange	red	_____
Describe appearance:	turbid	silty	sand	clay	floaters sheeen	_____
	clear	multiphas	foaming	slimy	algae	_____

Organic Layer? — Length — Floating or Sinking or Other? _____

Comments: 1½" bladder jammed @ ~20 ft. Had to switch to Micro bladder

Test papers
Lead Acetate: None Potassium Iodide: None

Refer to page _____

MONITORING WELL SAMPLING WORKSHEET (ADDITIONAL PAGES)

Job Name : Iron Horse Park OU4 Job No: 036800321.00003 Samplers: JAO / Henderson

Well ID: MW-202B Date Sampled: 2/20/06

Time Military	Water Level (feet)	pH	ORP (mV)	Specific Conductivity (µs/ccm)	Temp (0C)	DO (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)	Comments
1221	2.40	7.97	15.6	204	9.66	4.62	45.8	66	
1230	2.40	7.91	23.6	188	9.25	2.26	39.5	60	
1237	2.40	7.90	23.7	186	9.05	2.09	40.7	66	
1242	2.40	7.92	19.3	185	9.28	1.71	42.9	99	
1247	2.40	7.94	9.2	184	9.8	1.27	45.7	99	
1252	2.4	7.96	7.0	185	9.85	1.08	45.1	99	
1305	2.4	7.94	6.1	183	9.90	0.89	45.0	99	
1315	2.4	7.96	4.5	182	9.99	0.82	46.0	99	
1325	2.4	7.97	2.0	180	10.05	0.74	36.7	99	
1334	2.4	7.96	1.3	180	9.82	0.71	39.7	99	
1344	2.4	7.98	1.0	178	9.99	0.65	37.7	99	
1352	2.4	7.97	0.7	177	9.92	0.62	38.6	99	
1359	2.4	7.97	0.2	177	9.53	0.59	40.5	99	
1411	2.4	7.99	0.3	175	9.94	0.56	38.9	99	
1425	2.4	7.98	1.0	172	9.89	0.50	21.1	99	
1441	2.4	7.98	2.8	167	9.69	0.44	18.4	99	
1447	2.4	7.98	2.7	167	9.68	0.43	15.6	99	
1454	2.4	7.99	0.7	166	9.71	0.41	15.9	99	
1502	2.4	7.98	2.9	166	9.47	0.37	13.9	99	
1512	2.4	7.98	6.8	165	9.29	0.34	13.3	99	
1522	2.4	7.98	7.7	164	9.24	0.32	16.9	99	

Stabilization Criteria ±0.1 ±10 mv ±3% ±3% ±10% <5 ±10%

APPENDIX A.4

Groundwater Sampling Instrument Calibration Logs

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** ysi

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20/6 - 2/24/6 **ID No.:** # 6

Date of Calibration: 2/23/6 **Calibration:** **Initials** [illegible]

Last date of temperature calibration: 2/22/6 **Time** 0700

Air Temperature **am:** **pm:**

Sol'n Temperatur **am:** **pm:** **Cal Check:** **Initials**

Atmos. Pressure: **am:** 756.3 **pm:** 756.3 **Time :**

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	19.70	NA	999												
DO	mg/L	--	—	9.2	9.01		0.0	18.88	NA	0.14	NA						
pH	--	7.0			7.02		4.0			4.0		10.0	10.0		7.0	7.02	
ORP	mV	231	19.75	238	242												
cond.	us/cm	998	20.05	910	920		100.7	20.0	90.3	94							
sp. Cond.	us/°cm	998	20.05	NA	1017		102.7	20.0	NA	104							

END OF DAY CALIBRATION CHECK

DO	% sat	100	11.80	NA		
DO	mg/L			10.7	10.5	
pH	--	7.0	—		7.02	
ORP	mV	231	20.40	237.5	243	
cond.	us/cm	100.7	18.94	88.3	102	
sp. Cond.	us/°cm	100.7	"	NA	~~122.9~~ 115	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	8.501 0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20 - 2/24/6 **ID No.:** 111 # 5

Date of Calibration: 2/23/6 **Calibration:** **Initials** [illegible]

Last date of temperature calibration: 2/22/6 **Time** 0700

Air Temperature am: 20.13 **pm:**

Sol'n Temperatur am: **pm:** **Cal Check:** **Initials**

Atmos. Pressure: am: 758 **pm:** ~~756.3~~ **Time :**

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	20.13	NA	99.9												
DO	mg/L	--		9.04	9.05		0.0	16.0	NA	0.05	NA						
pH	--	7.0			~~7.08~~		4.0			3.99		10.0	10.0		7.0	7.05	
ORP	mV	231	19.7	238	232.3												
cond.	us/cm	998	20.09	910	~~1047~~		1002.7	20.09	903	101							
sp. Cond.	us/°cm	998	20.09	NA	1011		1002.7	20.09	NA	111							

9/6

END OF DAY CALIBRATION CHECK

DO	% sat	100	~~6.07~~	NA	99.7	
DO	mg/L		6.36	12.3	12.24	
pH	--	7.0	-		6.96	
ORP	mV	231	19.50	238.3	237.0	
cond.	us/cm	100.7	17.50	85.8	112	
sp. Cond.	us/°cm	100.7		NA	107	

RECALIBRATE

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	9.5at ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

	STAND	TEMP	CORR	READ	DIFF	STAN. Val	TEMP	CORR	READ	DIFF ERROR
COND	998	20.46	918	922		100.7	20.21	90.6	103	
SP-COND	998	20.46	NA	1010		100.7	20.21	NA	113	

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20 - 2/24/6 **ID No.:** 2

Date of Calibration: 2/23/6 **Calibration:** **Initials** KH

Last date of temperature calibration: 2/22/6 **Time** 0700

Air Temperature am: **pm:**

Sol'n Temperaturam: **pm:** **Cal Check:** **Initials**

Atmos. Pressure: **am:** 759.6 **pm:** 757 **Time :**

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	20.0	NA	99.9												
DO	mg/L	--	—	9.08[6]	9.08		0.0	19.5	NA	0.50	NA						
pH	--	7.0			6.99		4.0			4.0		10.0	10.0		7.0	6.99	
ORP	mV	231	19.80	238	227.9												
cond.	us/cm	998	20.06	910	915		100.7	20.05	90.3	94							
sp. Cond.	us/cm	998	20.04	NA	1010		100.7	20.05	NA	104							

END OF DAY CALIBRATION CHECK

DO	% sat	100	7.92	NA	100	
DO	mg/L		"	11.6	11.9	
pH	--	7.00	[illegible]		7.03	
ORP	mV	231	21.82	235	232.8	
cond.	us/cm	100.7	19.38	89.2	97	
sp. Cond.	us/cm	100.7		NA	109	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	~~0.0~~ 2.501	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820-03

Fieldwork Dates: 2-20-06 **ID No.:** 2

Date of Calibration: 2-20-06 **Calibration:** Initials JWH

Last date of temperature calibration: Time 0830

Air Temperature am: 19.27 pm:

Sol'n Temperature am: 19.9 pm: **Cal Check:** Initials

Atmos. Pressure: am: 764.5 pm: 761.5 Time : 1000

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	19.27	NA	101.0												
DO	mg/L	--	19.27	9.24	9.31		0.0	20.3	NA	0.3	NA						
pH	--	7.0			7.0		4.0			3.99		10.0	10.03		7.0	6.94	
ORP	mV	231	19.5	237.5	237.7												
cond.	us/cm	1006	19.9	893	896		96.6	19.9	88.7	89.4							
sp. Cond.	us/cm	1006	19.9	NA	1006		99.6	19.9	NA	114							

END OF DAY CALIBRATION CHECK

DO	% sat	100	16.35	NA	105.1	
DO	mg/L		~~10.8~~	9.73	10.29	
pH	--	7.0	—		6.94	
ORP	mV	231	18.9°	239	230.5	
cond.	us/cm	99.6	19.6°	89.6	106	
sp. Cond.	us/cm			NA	118	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	O_2 Sol) ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20/6 - 2/24/6 **ID No.:** #3

Date of Calibration: 2/20/6 **Calibration: Initials** [illegible]

Last date of temperature calibration: Palm **Time** 0800

Air Temperature am: 18.32 **pm:**

Sol'n Temperatura m: **pm:** **Cal Check: Initials** [illegible]

Atmos. Pressure: am: 761 **pm:** **Time :** 1600

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	18.32	NA	100.2												
DO	mg/L	--		9.3	9.37		0.0	19.0	NA	0.50	NA						
pH	--	7.0			7.0		4.0			4.0		10.0	10.01		7.0	6.95	
ORP	mV	231	19.38	238.5	243.6												
cond.	us/cm	1006	19.0	891	920		99.6	18.90	88.1	101							
sp. Cond.	us/°cm			NA	1045				NA	114							

END OF DAY CALIBRATION CHECK

DO	% sat	100	10665	NA	93.7	changed membrane
DO	mg/L	new	18.49	9.3	8.69	
pH	--	7.0	—		7.03	
ORP	mV	231	19.0	239	241.6	
cond.	us/cm	99.6	19.79	89.9	119	
sp. Cond.	us/°cm			NA	132	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	O_2 Sol 0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820-03

Fieldwork Dates: 2-20-06 **ID No.:** 5

Date of Calibration: 2-20-06 **Calibration:** Initials JNH

Last date of temperature calibration: — Time 0830

Air Temperature am: 19.4 pm:

Sol'n Temperature am: 18.45 pm: 19.12 **Cal Check:** Initials JNH

Atmos. Pressure: am: 763.5 pm: 760.0 Time : 1700

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	16.6	NA	101.7												
DO	mg/L	--	16.6	9.83	9.83	—	0.0	20.3	NA	0.4	NA						
pH	--	7.0			7.0		4.0			4.0		10.0	10.01		7.0	6.99	
ORP	mV	231	19.8	237.5	237.4												
cond.	us/cm	~~1006~~	19.9	893	~~1005~~ 896		99.6	19.9	88.7	89.4							
sp. Cond.	us/°cm	1006	19.9	NA	~~893~~ 1006		99.6	19.9	NA	116							

END OF DAY CALIBRATION CHECK

DO	% sat	100	5.81	NA	100.8	
DO	mg/L		5.81	12.74	12.54	
pH	--	7.0	—		7.05	
ORP	mV	231	19.6	237.5	235.1	
19.6 cond.	us/cm	~~1006~~	19.4	89.6	102	
99.6 sp. Cond.	us/°cm	~~1006~~	19.4	NA	130	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	@ Sal ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20/16 - 2/24/16 **ID No.:** #4

Date of Calibration: 2/20/16 **Calibration:** **Initials** AH

Last date of temperature calibration: Palm **Time** 0800

Air Temperature am: 15.1 **pm:** 6.5

Sol'n Temperaturam: 19.6 **pm:** 19.6 **Cal Check:** **Initials** JNH

Atmos. Pressure: am: 763 **pm:** 759 **Time :** 700

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	18.64	NA	100.7												
DO	mg/L	--		9.3	9.37		0.0	19.1	NA	<.05	NA						
pH	--	7.0			7.01		4.0			4.0		10.0	10.0		7.0	7.04	
ORP	mV	231	19.24	239	241.5												
cond.	us/cm	1006	19.0	891	1005		99.6	18.81	88.1	91							
sp. Cond.	us/°cm			NA	890				NA	104							

END OF DAY CALIBRATION CHECK

DO	% sat	100	5.89	NA	1043	
DO	mg/L		5.89	12.74	12.90	
pH	--	7.0	—		6.95	
ORP	mV	231	19.6	237.5	237.2	
cond.	us/cm	~~1006~~ 99.6	19.6	89.6	100	
sp. Cond.	us/°cm	~~1006~~ 99.6	19.6	NA	123	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	9.01 ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2-20-06 - **ID No.:** 1

Date of Calibration: 2-20-06 **Calibration:** **Initials** JNH

Last date of temperature calibration: **Time** 0830

Air Temperature am: 18.6 pm: 0800

Sol'n Temperature am: pm: **Cal Check:** **Initials**

Atmos. Pressure: am: 755 pm: 0800 **Time :**

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	18.6	NA													
DO	mg/L	--	18.6	9.43			0.0		NA		NA						
pH	--	7.0					4.0					10.0			7.0		
ORP	mV			NOT USED													
cond.	us/cm																
sp. Cond.	us/°cm			NA					NA								

END OF DAY CALIBRATION CHECK

DO	% sat	100		NA		
DO	mg/L					
pH	--					
ORP	mV					
cond.	us/cm					
sp. Cond.	us/°cm			NA		

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	O_2 Sol 0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2-21-06 **ID No.:** 4

Date of Calibration: 2-21-06 **Calibration:** Initials JNH

Last date of temperature calibration: 2-2006 **Time** 0730

Air Temperature am: 12.45 pm:

Sol'n Temperaturam: 18.69 pm: **Cal Check:** Initials J. ATIYEH

Atmos. Pressure: am: 760.1 pm: **Time :** 1626

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	17.0	NA	100												
DO	mg/L	--	17.0	7.43	9.48		0.0	18.91	NA	0.08	NA						
pH	--	7.0			7.0		4.0			4.0		10.0	10.01		7.0		
ORP	mV	231	18.69	237.5	238.5												
cond.	us/cm	1000	19.3	893	1002	890	99.6	19.45	89.4	91							
sp. Cond.	us/cm	1000	19.3	NA	890	1002	99.6	19.45	NA	100.1							

1002

1002

END OF DAY CALIBRATION CHECK

DO	% sat	100	8.0	NA	97.3	-2.7
DO	mg/L		8.0	11.8	11.53	-0.27
pH	--	7.0	20.3		6.99	-0.01
ORP	mV	231	20.19	2375	233.5	-4.0
cond.	us/cm	1002	20.36	916	882	-34
sp. Cond.	us/°cm	1002	20.36	NA	963	-39

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	Q Sol 8.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2-20-06 – **ID No.:** 5

Date of Calibration: 2-21-06 **Calibration:** **Initials** JNH

Last date of temperature calibration: 2-20-06 **Time** 0730

Air Temperature am: 13.34 pm:

Sol'n Temperature am: 19.03 pm: **Cal Check:** **Initials** JAYNEY

Atmos. Pressure: am: 759.8 pm: **Time :** 1626

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	17.0	NA	100												
DO	mg/L	--	17.0	9.63	9.53		0.0	19.8	NA	0.05	NA						
pH	--	7.0			7.0		4.0			4.0		10.0	10.04		7.0		
ORP	mV	231	19.03	-37.5	234.2												
cond.	us/cm	1002	19.3	893	1002	892	99.6	19.45	59.4	96.7							
sp. Cond.	us/°cm	1002	19.3	NA	1002	1002	99.6	19.45	NA	100							

1002

1002

END OF DAY CALIBRATION CHECK

DO	% sat	100	7.0	NA	97.4	-2.6
DO	mg/L		7.0	12.1	11.8	-0.3
pH	--	7.0	20.34		6.94	-0.06
ORP	mV	231	20.54	237.5	235.2	-2.3
cond.	us/cm	1002	19.9	908	889	-19
sp. Cond.	us/°cm	1002	19.9	NA	982	-20

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	9.501 ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2-20-06 – **ID No.:** 2

Date of Calibration: 2-21-06 **Calibration:** Initials JNH

Last date of temperature calibration: 2-20-06 Time 0730

Air Temperature am: 18.93 pm: 10.73

Sol'n Temperaturam: 19.57 pm: 20.85 **Cal Check:** Initials JNH

Atmos. Pressure: am: 760.6 pm: 757 Time : 1628

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	19.0	NA	100.1	+0.1											
DO	mg/L	--	19.0	9.34	9.27	-0.07	0.0	19.4	NA	0.5	NA						
pH	--	7.0			7.0	0	4.0			3.88	-0.12	10.0	10.02	+0.02	7.0		
ORP	mV	231	19.5	238	239.5	+1.5											
cond.	us/cm	1000	19.84	906	909	+3	99.6	19.45	89.6	93	+4						
sp. Cond.	us/°cm	1000	19.84	NA	1005	+3	99.6	19.45	NA	103	+3.4						

END OF DAY CALIBRATION CHECK

DO	% sat	100	16.5	NA	100.6	
DO	mg/L		16.5	9.03	7.93	
pH	--	7.0	~~-0.6~~		6.99	
ORP	mV	231	~~153~~	237.5	239.1	
cond.	us/cm	1000	20.85	925	927	
sp. Cond.	us/°cm	1000	~~927~~	NA	997	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	9.501 ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4
Field Activities: Groundwater Sampling
Fieldwork Dates: 2-20-06-
Date of Calibration: 2-21-06
Last date of temperature calibration: 2-20-06
Air Temperature am: 17.71 **pm:** 8.0
Sol'n Temperaturam: 20.16 **pm:** 20.85
Atmos. Pressure: am: 757.4 **pm:** 755

Instrument: YSI
Model No.: 6820
ID No.: 3
Calibration: **Initials** JNH
Time 0730
Cal Check: **Initials** JNH
Time : 1628

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	18.47	NA	99.6	-0.4											
DO	mg/L	--	18.66	9.4	9.2	-0.2	0.0	18.91	NA	0.5	NA						
pH	--	7.0			7.01	+0.01	4.0			3.99	-0.01	10.0	9.97	-0.03	7.0		
ORP	mV	231	18.93	239.0	230.0	-9											
cond.	us/cm	~~1000~~	~~19.15~~	~~1006~~	~~1003~~	~~-1~~	~~99.6~~	~~20.80~~	~~90.7~~	SEE BELOW							
sp. Cond.	us/cm	~~1002~~	~~19.15~~	~~NA~~	~~993~~	~~-3~~	~~99.6~~	~~20.85~~	NA	SEE BELOW							

JWA

207

END OF DAY CALIBRATION CHECK 1006 ~~993~~ JWA

DO	% sat	100	7.35	NA	91.3	
DO	mg/L		9.35	10.73	10.77	
pH	--	7.0	—		7.01	
ORP	mV	231	20.6	237.5	227.0	
cond.	us/cm	1002	20.85	925	909	
sp. Cond.	us/cm	1002	20.85	NA	986	

-1

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	O_2 Sol ~~0.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

COND	1002	20.88	925	929	+4	99.6	19.95	90.1	100	+8.9
SP COND	1002	20.88	NA	1003	+1	99.6	19.95	NA	111	+11.4

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** ysi

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20 - 2/24/6 **ID No.:** #2

Date of Calibration: 2/22/6 **Calibration:** Initials LL

Last date of temperature calibration: 2/21/6 **Time** 0720

Air Temperature am: 21.25 pm: 12.91

Sol'n Temperatur am: 21.01 pm: 20.1 **Cal Check:** Initials JNH

Atmos. Pressure: am: 763.5 pm: 760.5 **Time :** 1500

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	21.30	NA	100.5	+0.3											
DO	mg/L	--	—	8.95	8.90	-0.05	0.0	20.59	NA	0.5	NA						
pH	--	7.0			7.02	+0.02	4.0			4.0	0	10.0	10.01	+0.01	7.0		
ORP	mV	231	18.35	240	242.6	+2.6											
cond.	us/cm	998	21.47	937	931	-6	100.7	20.84	91.7	93	+1.3						
sp. Cond.	us/°cm	998	21.47	NA	998	0	100.7	20.84	NA	101	+0.3						

END OF DAY CALIBRATION CHECK

DO	% sat	100	13.14	NA	102.7	
DO	mg/L		13.14	10.50	10.76	
pH	--	7.0	20.4		7.04	
ORP	mV	231	20.1	237.5	227.9	
cond.	us/cm	998	20.65	918	891	
sp. Cond.	us/°cm	998	20.65	NA	983	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	0.501 0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2/20 – 2/24/6 **ID No.:** #3

Date of Calibration: 2/22/6 **Calibration:** **Initials** JWA

Last date of temperature calibration: 2/21/6 **Time** 0720

Air Temperature **am:** 20.93 **pm:** 12.55

Sol'n Temperature **am:** 20.83 **pm:** 21.4 **Cal Check:** **Initials** JWA

Atmos. Pressure: **am:** 760.4 **pm:** 758.3 **Time :** 2/22/06

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	20.96	NA	100.1	+0.1											
DO	mg/L	--	—	8.88	8.93	+0.05	0.0	20.27	NA	0.21	NA						
pH	--	7.0			7.0	0	4.0			3.99	-0.01	10.0	10.02	+0.02	7.0		
ORP	mV	231	18.17	240	232.9	-7.1											
cond.	us/cm	998	21.26	933	920	-63	100.7	20.27									
sp. Cond.	us/°cm	998	21.26	NA	998	0	100.7	20.27	NA								

SEE BELOW

END OF DAY CALIBRATION CHECK

DO	% sat	100	13.1	NA	102.4	+2.4
DO	mg/L		13.1	10.50	10.76	+0.26
pH	--	7.0	20.68		7.17	+0.17
ORP	mV	231	20.51	237.5	237	-0.5
cond.	us/cm	998	21.14	929	888	-41
sp. Cond.	us/°cm	998	21.14	NA	959	-39

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

JWA

COND	998	20.67	922	916	-6	100.7	20.75	91.6	107	+15.4
SP. COND	998	20.67	NA	998	0	100.7	20.75	NA	112	+11.3

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2-20-06 – **ID No.:** 4

Date of Calibration: 2-22-06 **Calibration:** Initials JWH

Last date of temperature calibration: 2-21-06 Time 0730

Air Temperature am: 16.48 pm: 10.75

Sol'n Temperature am: 21.6 pm: 20.86 **Cal Check:** Initials JWA

Atmos. Pressure: am: 762.8 pm: 759.9 Time: 2/22/06

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	16.48	NA	100.1												
DO	mg/L	--	16.48	9.83	9.78		0.0	19.83	NA	0.12	NA						
pH	--	7.0			7.0		4.0			3.97		10.0	10.01		7.0	7.01	
ORP	mV	231	190	239	237												
cond.	us/cm	999	21.16	929	924		100.7	20.42	91.0	93.0							
sp. Cond.	us/cm	998	21.16	NA	979		100.2	20.42	NA	103							

END OF DAY CALIBRATION CHECK

DO	% sat	100	10.88	NA	101.0	+1
DO	mg/L		10.88	11.28	11.11	-0.17
pH	--	7.0	20.81		6.99	+0.01
ORP	mV	231	20.11	237.5	233.2	-4.3
cond.	us/cm	998	20.86	925	899	-26
sp. Cond.	us/cm	998	20.86	NA	979	-19

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 2-20-06 – **ID No.:** 5

Date of Calibration: 2-22-06 **Calibration:** Initials JNH

Last date of temperature calibration: 2-21-06 Time 0736

Air Temperature am: 21.48 pm: 14.35

Sol'n Temperaturam: 20.6 pm: 20.98 **Cal Check:** Initials JNH

Atmos. Pressure: am: 762.8 pm: 760.5 Time : 1500

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	21.48	NA	100.6												
DO	mg/L	--	21.48	8.98	8.96		0.0	19.6	NA	0.31	NA						
pH	--	7.0			7.01		4.0			4.0		10.0	10.0		7.0	7.0	
ORP	mV	231	20.1	237.5	235.5												
cond.	us/cm	998	20.6	922	919		100.7	20.6	91.4	93.1							
sp. Cond.	us/°cm	994	20.6	NA	998		100.7	20.6	NA	103							

END OF DAY CALIBRATION CHECK

DO	% sat	100	14.6	NA	99.5	
DO	mg/L		14.6	10.27	10.12	
pH	--	7.0	20.60		7.01	
ORP	mV	231	20.25	233.1	237.5	
cond.	us/cm	998	20.65	918	882	
sp. Cond.	us/°cm	998	20.65	NA	958	

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	0.0	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 2-20-06 **ID No.:** 6

Date of Calibration: 2-22-06 **Calibration:** Initials JNH

Last date of temperature calibration: ~~2-22-06~~ — **Time** 0730

Air Temperature am: 21.45 pm: 9.35

Sol'n Temperaturam: 20.4 pm: 20.1 **Cal Check:** Initials JNH

Atmos. Pressure: am: 762.7 pm: 758.9 **Time :** 1500

CALIBRATION

		Standard #1					Standard #2					Standard #3			Check		
Parameter	Units	Standard Value	Solution or air temp (°C)	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Standard Value	Solution temp (°C)	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	21.45	NA	100.3												
DO	mg/L	--	21.45	8.88	8.86		0.0	19.26	NA	0.19	NA						
pH	--	7.0			7.0		4.0			3.98		10.0	1203		7.0	6.98	
ORP	mV	231	19.2	239	2483												
cond.	us/cm	999	20.4	919	910		101.7	20.9	91.9	91.9							
sp. Cond.	us/°cm	998	20.4	NA	999		101.7		NA	101							

END OF DAY CALIBRATION CHECK

DO	% sat	100	9.78	NA	101	
DO	mg/L		9.78	11.19	11.43	
pH	--	7.0	20.1		6.94	
ORP	mV	231	21.4	237.5	2423	
cond.	us/cm	998	20.6	918	897	897
sp. Cond.	us/°cm	998	20.6	NA	973	973

CALIBRATION REQUIREMENTS

Parameter	Units	Standard	Reqmnt.	Action
DO	mg/L	O_2 Soluability	±0.2	change DO membrane
DO	mg/L	0.0	≤0.50	change DO membrane
pH	--	7.0	±0.05	recalibrate
ORP	mV	ORP solution	±10.0	calibrate*
sp. Cond.	us/°cm	specific standard	±5%	recalibrate

*ORP is operated in the run mode if not within criteria then run in calibrate mode

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard	Reqmnt.
DO	mg/L	9.01 ~~8.0~~	≤0.50
pH	--	7.0	±0.3
sp. Cond.	us/°cm	specific standard	±20%

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

PID Calibration Log

Site Name: IHP

Field Activities: Groundwater Sampling

Fieldwork Dates: 2/20/06 –

Instrument: MINIRAE

Model No.: 2000

ID No.: 2245

Calibration (Span) Gas:

Gas: ISOBUTYLENE

Manufacturer: SCOTTY

Lot No.: 52230SD

Zero Gas: Ambient Air

Date	Time	Initials	Calib. Or Check	Zero Reading	Calibration (Span) Gas Conc.	Calibration (Span) Gas Reading	Comments
10/5/93	14:10	DS	Cal	0.0	100.0	101.0	
2/20/06	0840	JCM	"	0.0	100.0	100.0	
"	1736	check	"	"	"	100	
2/21/06	0720	"	"	0.0	100	100	
"	1720	JCM	check	0.0	100	99.5	
2/22/06	0730	JCM	cal	0.0	100	100	
2/23/06	1730	EAD	check	0.0	100	~~8~~ EAD 90.4	ID No. 8705

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.

PID Calibration Log

Site Name: IHP
Field Activities: Groundwater Sampling
Fieldwork Dates: 2/20/06
Instrument: MINIRAE
Model No.: 2000
ID No.: 2245

Calibration (Span) Gas:
Gas: ISOBUTYLENE
Manufacturer: SCOTT
Lot No.: 522305D

Zero Gas: Ambient Air

Date	Time	Initials	Calib. Or Check	Zero Reading	Calibration (Span) Gas		Comments
					Conc.	Reading	
10/5/93	14:10	DS	Cal	0.0	100.0	101.0	
2/20/06	0826	SCM	"	0.0	100.0	100.0	
"	1728	"	CHECK	"	"	100	
2/21/06	0715	"	CAL	"	"	100	
"	1710	JM	check	0.0	100	98.2	
2/22/06	0740	JM	ck	0.0	100	100	
2/23/06	17:30	SAD	Check	0.0	100	109	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.

PID Calibration Log

Site Name: Iron Horse Park
Field Activities: Groundwater Sampling
Fieldwork Dates: 12/13 - 12/20/05

Instrument: PID
Model No.: MiniRAE 2000
ID No.: 8558

Calibration (Span) Gas:
Gas: 100 ISOBUTYLENE
Manufacturer: GASCO
Lot No.: LAF-248-3

Zero Gas: Ambient Air

Date	Time	Initials	Calib. Or Check	Zero Reading	Calibration (Span) Gas Conc.	Calibration (Span) Gas Reading	Comments
10/5/93	14:10	DS	Cal	0.0	100.0	101.0	
12/13/05	10:55	SP	Cal	0.0	100.0	104	
12/13/05	18:10	SP	Chk	0.0	100.0	101	
12/15/05	8:15	SP	Cal	0.0	100.0	98.8	
12/15/05	17:30	SP	Chk	0.0	100.0	104.0	
12/16/05	8:10	SP	Cal	0.0	100.0	100.0	
Not	used					#	Excessive moisture
12/19/05	8:00	SP	Cal	0.0	100.0	99.1	
12/19/05	18:40	SP	Chk	0.0	100.0	114.0	
12/20/05	7:50	SP	Cal	0.0	100.0	101.0	
12/20/05	18:30	SP	Chk	0.0	100.0	98.7	
12/21/05	8:20	SP	Cal	0.0	100.0	100.0	
12/21/05	16:05	SP	Chk	0.0	100.0	114.0	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.

PID Calibration Log

Site Name: Iron Horse Park
Field Activities: Groundwater Sampling
Fieldwork Dates: 12/13 - 12/20/05

Instrument: PID
Model No.: Mini RAE 2000
ID No.: 8709

Calibration (Span) Gas:
Gas: 100 ISOBUTYLENE
Manufacturer: GASCO
Lot No.: LAF-248-3

Zero Gas: Ambient Air

Date	Time	Initials	Calib. Or Check	Zero Reading	Calibration (Span) Gas Conc.	Calibration (Span) Gas Reading	Comments
10/5/93	14:10	DS	Cal	0.0	100.0	101.0	
12/13/05	10:55	SP	Cal	0.0	100.0	100.0	
12/13/05	18:10	SP	Chk	0.0	100.0	100.0	
12/15/05	8:[illegible]	SP	Cal	0.0	100.0	109.0	
12/15	17:30	SP	Chk	0.0	100.0	111.0	
12/19/05	8:00	SP	Cal	0.0	100.0	100.0	
12/19/05	18:40	SP	Chk	0.0	100.0	107.0	
12/20/05	7:50	SP	Cal	0.0	100.0	100.0	
12/20/05	18:30	SP	Chk	0.0	100.0	113.0	
12/21/05	8:20	SP	Cal	0.0	100.0	100.0	
12/21/05	16:05	SP	Chk	0.0	100.0	102	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.

Turbidity Meter Calibration Log

Site Name: IHP
Field Activities: CW SAMP
Fieldwork Dates: 2/20/06

Instrument: LA MOTTE
Model No.: 2020
ID No.: 5293-3504

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
2/20/06	0805	JCM	"				1.0	1.11	10.0	10.00	
2/20/06	1711	JCM	check				1.0	1.42	10.0	10.10	
2/21/06	0775	JCM	cal				1.0	1.02	10.0	10.00	
2/21/06	1700	JWH	check				1.0	0.37	10.0	10.18	
2/22/06	0720	JCM	cal				1.0	1.00	10.00	10.11	
2/22/06	0345	JCM	check				1.0	1.25	10.0	7.58	
2/23/6	0800	MH	cal				1.0	~~1.18~~ 1.12	10.0	10.0	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: THP
Field Activities: GW Sampling
Fieldwork Dates: 2/21/06

Instrument: LA Motte
Model No.: 2020
ID No.: 3193-1702

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
2/21/06	0900	JCM	lc	—	—	—	1.0	1.00	10.	10.25	
2/21/06	1520	JCM	check	—	—	—	1.0	1.11	10.0	7.99	
2/23/06	0810	MB	cal	—	—	—	1.0	1.18	10.0	10.0	
2/23/06	17:30	JAD	Check	—	—	—	1.0	1.17	10.0	9.66	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: DHP
Field Activities: GW Samp
Fieldwork Dates: 2/20/06 -

Instrument: LA Motte
Model No.: 2020
ID No.: 3263-2002

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
2/20/06	815	JCM	CAL				1.0	1.07	10.0	10.10	
2/20/06	1717	JCM	check				1.0	0.84	10.0	9.77	2 BATT. DIED IN FIELD
2/21/06	0730	JCM	CAL				1.0	1.05	10.0	10.30	
2/21/06	1700	JCM	check				1.0	0.94	10.0	10.17	
2/22/06	0725	JCM	CAL				1.0	1.00	10.0	10.12	
2/22/06			Check				1.0	1.23	10.0	10.01	
2/23/06	0800	JCM	cal				1.0	0.8	10.0	10.0	
2/23/06	1730	JCM	Check				1.0	1.0	10.0	9.73	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: IHP
Field Activities: GW sampling
Fieldwork Dates: 2/20/06

Instrument: LaMotte
Model No.: 2020
ID No.: 4720 - 4703

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
2/22/06	0845	JCM	"	—	—	—	1.0	1.00	10.0	10.07	
2/22/06	1600	JCM	Check	—	—	—	1.0	0.95	10.0	9.29	
2/23/06	0820	AD	cal	—	—	—	1.0	0.84	10.0	10.0	
2/23/06	1730	EAD	check	—	—	—	1.0	0.89	10.0	9.96	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: ZHP
Field Activities: GW SAMP.
Fieldwork Dates: 2/20/06 -

Instrument: LA MOTTE
Model No.: 2020
ID No.: 4815-5203

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Standard #1 Reading	Standard #2 Value	Standard #2 Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
2/20/06	0757	JCM	V				1.0	1.04	10	10.00	
2/20/06	1515	JCM	check				1.0	1.07	10	10.08	
	1715 JCM										
2/21/06	0725	JCM	CAL				1.0	1.00	10.0	10.04	
2/21/06	1700	JWH	check				1.0	0.96	10.0	10.19	
2/22/06	0710	JCM	CAL				1.0	1.00	10.0	10.21	
2/22/06	0330	JCM	CHECK				1.0	1.33	10.0	7.53	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: I&P
Field Activities: GW SAMP
Fieldwork Dates: 2/20/06

Instrument: LaMotte
Model No.: 2020
ID No.: 3477-3102

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
2/20/06	0749	JCM	IC	—	—	—	1	1.21	10	10.00	
2/20/06	1709	JCM	check	—	—	—	1	0.88	10	10.44	
2/22/06	0747	JCM	CAL	—	—	—	1	1.00	10	10.04	
2/22/06	1100	JMH	check	—	—	—	1.0	0.89	10.0	10.29	
2/22/06	0715	JCM	CAL	—	—	—	1.0	1.00	10.0	9.89	
2/22/06	0340	JCM	check				1.0	1.60	10.0	9.10	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name:	Iron Horse Park	**Instrument:**	Turbidimeter
Field Activities:	GW Sampling	**Model No.:**	2020
Fieldwork Dates:	12/13 - 12/20/05	**ID No.:**	3263-2002

			Cal.or	Zero Reading at Ranges			Standard #1		Standard #2		
Date	Time	Initials	Check	1	10	100	Value	Reading	Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
12/13/05	10:25	SP	Cal				1.0	0.95	10.0	9.89	
—	—	—	chk				—	—	—	—	not used (extra)
12/14/05	7:45	SP	Cal				1.0	0.77	10.0	10.3	
	Not used										
12/15/05	8:00	SP	Cal				1.0	0.83	10.0	9.88	
	NOT USED		chk								
12/19/05	7:30	SP	Cal				1.0	0.84	10.0	9.69	
	Not	used									
12/20/05	7:30	SP	Cal				1.0	0.80	10.0	9.98	
~~12/20/05~~	~~7:50~~	~~SP~~						8			
11	1835	JCM	check				1.0	1.10	10.0	9.94	
12/21/05	8:12	SP	Cal				1.0	0.88	10.0	10.08	
	Not	used									

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: Iron Horse Park
Field Activities: GW Sampling
Fieldwork Dates: 12/13 - 12/20/05

Instrument: Turbidimeter
Model No.: 2020
ID No.: 4815-5203

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Standard #1 Reading	Standard #2 Value	Standard #2 Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
12/13/05	10:30	SP	Cal				1.0	1.03	10.0	9.59	
12/13/05	17:50	SP	Check				1.0	1.5	10.0	9.4	
12/14/05	7:45	SP	Cal				1.0	1.6	10.0	9.6	
12/14/05	1635	JWH	Check				1.0	1.62	10.0	9.75	
12/15/05	8:00	SP	Cal				1.0	1.61	10.0	9.52	
12/15/05	17:10	SP	Chk				1.0	1.55	10.0	9.19	
12/16/05	7:45	SP	Cal				1.0	1.63	10.0	9.38	
12/16/05	14:35	SP	Check				1.0	1.56	10.0	9.29	Cal check
12/19/05	7:30	SP	Cal				1.0	1.77	10.0	9.36	
12/19/05	18:25	SP	Chk				1.0	1.56	10.0	9.27	
12/20/05	7:30	SP	cal				1.0	1.61	10.0	9.41	
"	1838	JCM	Check				1.0	1.7	10.0	9.5	
12/21/05	8:08	SP	cal				1.0	1.6	10.0	9.3	
12/21/05	1515	JWH	Check				1.0	1.63	10.0	9.44	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: Iron Horse Park
Field Activities: GW Sampling
Fieldwork Dates: 12/13 - 12/20/05

Instrument: Turbidimeter
Model No.: 2020
ID No.: 4720-4703

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
12/13/05	10:32	SP	Cal				1.0	1.67	10.0	9.70	
12/13/05	17:50	SP	Chk				1.0	0.95	10.0	9.1	Cal check
12/14/05	7:45	SP	Cal				1.0	1.3	10.0	10.0	
12/14/05	15:45	SP	Chk				1.0	1.0	10.0	9.17	
~~12/14/05~~	~~16:35~~	~~JWH~~	~~Check~~								
12/15/05	8:00	SP	Cal				1.0	1.0	10.0	9.5	
12/15/05	17:20	SP	chk				1.0	0.95	10.0	9.4	
12/16/05	7:45	SP	Cal				1.0	1.0	10.0	10.0	
12/16/05	14:35	SP	chk				1.0	0.98	10.0	9.64	
12/19/05	7:30	SP	Cal				1.0	0.96	10.0	9.55	
12/19/05	18:20	SP	chk				1.0	1.0	10.0	9.40	
12/20/05	7:30	SP	Cal				1.0	1.1	10.0	10	
12/20/05	1824	JEM	check				1.0	1.14	10.0	9.66	
12/21/05	8:05	SP	Cal				1.0	1.09	10.0	9.42	
12/21/05	1500	JWH	check				1.0	1.12	10.0	9.46	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name:	Iron Horse Park	**Instrument:**	Turbidimeter
Field Activities:	GW Sampling	**Model No.:**	2020
Fieldwork Dates:	12/13 - 12/20/05	**ID No.:**	2510-1501

			Cal.or	Zero Reading at Ranges			Standard #1		Standard #2		
Date	Time	Initials	Check	1	10	100	Value	Reading	Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
12/13/05	10:18	SP	Cal				1.0	0.90	10.0	10.04	
12/13/05	17:50	SP	Chk				1.0	0.68	10.0	10.20	
12/14/05	7:45	SP	Cal				1.0	0.81	10.0	10.70	
12/14/05	1635	JML	Check				1.0	1.03	10.0	10.51	
12/15/05	8:00	SP	Cal				1.0	0.81	10.0	10.16	
12/15/05	17:10	SP	Chk				1.0	0.86	10.0	10.13	
12/19/05	7:30	SP	Cal				1.0	0.78	10.0	10.02	
12/19/05	18:25	SP	Chk				1.0	0.80	10.0	10.14	
12/20/05	7:30	SP	Cal				1.0	0.86	10.0	10.05	
11	1824	JCM	check				1.0	1.05	10.0	10.06	
12/21/05	8:00	SP	Cal				1.0	0.83	10.0	11.5	
12/21/05	1500	JML	Check				1.0	0.9	10.0	10.0	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: Iron Horse Park
Field Activities: GW SAMPLING
Fieldwork Dates: 12/13 - 12/20/05

Instrument: TURBIDIMETER
Model No.: 2020
ID No.: 0315-0103

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Reading	Standard #2 Value	Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
12/13/05	10:15	SP	Cal	~~1.3~~	~~8.37~~	—	1.0	1.13	10.0	8.37	
12/13/05	17:50	SP	Chk				1.0	1.1	10.0	12.0	
12/14/05	7:45	SP	Cal				1.0	1.4	10.0	18.0	
"	17:20	SP	Chk				1.0	1.33	10.0	10.72	
12/15/05	8:00	SP	Cal				1.0	1.06	10.0	10.01	
12/15/05	17:10	SP	Chk				1.0	1.1	10.0	10.0	
12/16/05	7:45	SP	Cal				1.0	1.1	10.0	10.0	
12/16/05	14:35	SP	Chk				1.0	0.99	10.0	10.76	
12/19/05	7:30	SP	Cal				1.0	0.92	10.0	9.64	
12/19/05	18:25	SP	Chk				1.0	1.14	10.0	9.68	
12/20/05	7:30	SP	Cal				1.0	0.99	10.0	9.98	
"	1831	SM	check				1.0	1.59	10.0	12.2	
12/21/05	7:55	SP	Cal				1.0	1.22	10.0	10.94	
12/21/05	1530	JNH	check				1.0	1.20	10.0	10.78	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

Turbidity Meter Calibration Log

Site Name: Iron Horse Park
Field Activities: GW Sampling
Fieldwork Dates: 12/13 - 12/20/05
Instrument: Turbidimeter
Model No.: 2020
ID No.: 5293-3504

Date	Time	Initials	Cal.or Check	Zero Reading at Ranges 1	10	100	Standard #1 Value	Standard #1 Reading	Standard #2 Value	Standard #2 Reading	Comments
10/5/93	14:10	BW	Cal	0	0.5	1.5	0.2	0.3	100	105	Example: DI used for zeroing
12/13/05	10:20	SP	Cal				1.0	1.06	10.0	9.92	
12/13/05	17:50	SP	Chk				1.0	0.84	10.0	10.07	
12/14/05	7:45	SP	Cal				1.0	0.77	10.0	10.11	
Not used											
12/15/05	8:00	SP	Cal				1.0	1.02	10.0	10.19	
12/15/05	17:10	SP	Chk				1.0	0.92	10.0	10.36	
12/16/05	7:45	SP	Cal				1.0	1.38	10.0	9.43	
NOT USED											
12/19/05	7:30	SP	Cal				1.0	1.01	10.0	10.13	
12/19/05	18:25	SP	Chk				1.0	0.95	10.0	9.96	
12/20/05	7:30	SP	Cal				1.0	1.10	10.0	10.13	
〃	1833	JCM	check				1.0	1.07	10.0	10.27	
12/21/05	7:55	SP	Cal				1.0	0.88	10.0	9.95	
12/21/05	1500	JNH	check				1.0	1.1	10.0	10.0	

Record information for one instrument per sheet.
One sheet can be used on multiple days on the same site.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4
Field Activities: Groundwater Sampling
Fieldwork Dates: 12/13/05-
Date of Calibration: 12/13/05
Last date of temperature calibration:
Air Temperature: am: 12.59 pm: 8.42
Sol'n Temperature: am: 8.66 pm: 9.30
Atmos. Pressure: am: 762.7 pm: 765.9

Instrument: YSI
Model No.: 6820-10
ID No.: 1 SN - Sonde 02M0284 Keypad 01A1432 AA
Calibration: Initials LO Time 10:15
Cal Check: Initials [signature] Time : 1830

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	100.4	0.4											
DO	mg/L	–	10.6	~~0.04~~		0.0	NA	0.04	NA							
pH	–	7.0		7.00	–	4.0		4.00	–	10.0		10.05	0.05			
ORP	mV	231	254	254.1	~~0.3~~ 0.1											
cond.	us/cm	993	709	709	–	100.9	<82	82	–							
sp. Cond.	us/cm		NA	1001	8		NA	116	15.1							

CALIBRATION CHECK

DO	% sat	100	NA	95.1	4.9											
DO	mg/L	–	11.6													
pH	–	7.00		6.77	.23											
ORP	mV	231	251	254.3	3.3											
cond.	us/cm	993	718	1036	~~43~~ 8											
sp. Cond.	us/cm		NA	710	~~783~~ 43											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 2 SN - Sonde 01B0148AA

Date of Calibration: 12/13/05 **Calibration:** Initials LO Keypad 04H14733AF

Last date of temperature calibration: Time 10:15

Air Temperature: am: 11.75 pm: 6.25

Sol'n Temperature: am: 7.03 pm: 7.81 **Cal Check:** Initials JMH

Atmos. Pressure: am: 761.6 pm: 764.1 Time : 1745

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	~~100.6~~ 103.9	3.9											
DO	mg/L	–	10.8	~~0.13~~		0.0	NA	0.13	NA							
pH	–	7.0	7	7.00	–	4.0		4.00	–	10.0		10.02	0.02			
ORP	mV	231	254	253.7	0.3											
cond.	us/cm	993	709	709	–	100.9	<82	77	~5							
sp. Cond.	us/cm		NA	1002	9		NA	109	9.9							

CALIBRATION CHECK

DO	% sat	100	NA	108.9	8.9											
DO	mg/L	–	12.3													
pH	–	7.0		6.97	0.03											
ORP	mV	231	254	252	2											
cond.	us/cm	993	709	716	7											
sp. Cond.	us/cm	993	NA	1076	83											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 3 SN sonde - 0150118 keypad - 00L1208AD

Date of Calibration: 12/13/05 **Calibration:** Initials JWH

Last date of temperature calibration: – Time 10:15

Air Temperature: am: 6.46 pm: 8.42

cond **Sol'n Temperature:** am: ~~8.74~~ 8.79 pm: 9.02 **Cal Check:** Initials

Atmos. Pressure: am: 762.5 pm: 765.2 Time: 1830

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	100.3	.3											
DO	mg/L	–	12.2	~~0.2~~		0.0	NA	0.2 3.73	NA							
pH	–	7.0		~~7.09~~	7.37 ← .37	4.0		~~3.44~~	.27	10.0		10.07	0.07			
ORP	mV	231	254	254.1	.1											
cond.	us/cm	993	709	709	0	100.9	C82	85	~3							
sp. Cond.	us/cm	~~1000~~ 993	NA	1035	42	100.9	NA	114	14.9							

CALIBRATION CHECK

DO	% sat	100	NA	144	~~44~~											
DO	mg/L	–	11.65													
pH	–	7.00		6.85	.15											
ORP	mV	231	6505	255.3	~~44.3~~ 5.2											
cond.	us/cm	~~1000~~ 993	712	953	~~705~~ 40											
sp. Cond.	us/cm		NA	1654	~~339~~											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 4 SN Sonde 01F1101AA Keypad 03E0207A]

Date of Calibration: 12/13/05 **Calibration:** Initials JRH

Last date of temperature calibration: ~ Time 10:15

Air Temperature: am: 6.18 pm: 6.82

Sol'n Temperature: am: 8.74 pm: 7.96 Cond **Cal Check:** Initials JRH

Atmos. Pressure: am: 738.6 pm: 759 Time: 1745

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	97.2	2.8											
DO	mg/L	–	11.9	~~0.7~~		0.0	NA	0.7	NA							
pH	–	7.0		7.14	.14	4.0		3.79	.21	10		10.1	.1			
ORP	mV	231	254	254.1	0.1											
cond.	us/cm	993	709	709	0	100.9	682	100	~18							
sp. Cond.	us/cm	~~1000~~ 993	NA	1087	94	100.9	NA	114	14.9							

CALIBRATION CHECK

DO	% sat	100	NA	120	20											
DO	mg/L	–	12.2													
pH	–	7.0	–	7.02	0.02	4.0	–									
ORP	mV	231	254	255	1											
cond.	us/cm	993	709	710	1											
sp. Cond.	us/cm	993	NA	1052	59											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4
Field Activities: Groundwater Sampling
Fieldwork Dates: 12/13/05-
Date of Calibration: ~~12/15/05~~ 12/13/05
Last date of temperature calibration: –
Air Temperature: am: 6.46 pm: 8.24
cond **Sol'n Temperature:** JNH am: ~~6.18~~ 8.89 pm: 7.33
Atmos. Pressure: am: 763.1 pm: 766.5

Instrument: YSI
Model No.: 6920
ID No.: 5 SN Sonde - 04F10262AD
Keypad - 04H14733 AE
Calibration: Initials JNH
Time 10:15
Cal Check: Initials JNH
Time : 1745

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	100.4	~~100.4~~											
DO	mg/L	–	12.2	~~0.7~~		0.0	NA	0.7	NA							
pH	–	7.0		6.94	0.06	4.0		3.97	0.03	10.0		10.04	0.04			
ORP	mV	231	254	254	0											
cond.	us/cm	993	709	709	0	100.9	<82	~~100~~ 83	1							
sp. Cond.	us/cm	~~100.9~~ 993	NA	1010	17	100.9	NA	122	22.9							

CALIBRATION CHECK

DO	% sat	100	NA	98.8	1.2											
DO	mg/L	–	11.7													
pH	–	7.0	–	6.97	0.03											
ORP	mV	231	254	256	2											
cond.	us/cm	993	709	697	12											
sp. Cond.	us/cm	993	NA	1013	20											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 1

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** **Initials** JNH

Last date of temperature calibration: 12/13/05 **Time** 8:30

Air Temperature: am: -3.80 pm: 8.82

pH2 **Sol'n Temperature:** am: 5.76 pm: 16.8 **Cal Check:** **Initials** JNH

Atmos. Pressure: am: 769 pm: 768 **Time:** 1600

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	93%	7											
DO	mg/L	-	14.6	14.59	0.01	0.0	NA	0.11	NA							
pH	-	7.0	-	7.01	0.01	4.0	-	3.99	0.01	10.0	-	10.07	.07			
ORP	mV	231	260	260	0											
cond.	us/cm	993	700	~~700~~ 866	0	100.9	<82	~~958~~ 866	~16							
sp. Cond.	us/cm	993	NA	1246	253	100.9	NA	~~+59~~ 113 JNH	117.9							

CALIBRATION CHECK

DO	% sat	100	NA	96.3	3.7											
DO	mg/L	-	10.8	11.2	0.4											
pH	-	7.0		7.02	0.02											
ORP	mV	231	230	227	2.3											
cond.	us/cm	993	835	843	8											
sp. Cond.	us/cm	993	NA	1029	36											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 2

Date of Calibration: 12/13/05 **Calibration:** Initials [illegible]

Last date of temperature calibration: 12/13/05 Time 0800

Air Temperature: am: 2.84 pm:

Sol'n Temperature: am: 5.12 pm: **Cal Check:** Initials [illegible]

Atmos. Pressure: am: 768.6 pm: Time: 10:15

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	106.9	6.9											
DO	mg/L	–	14.7	~~13.9~~ 14.75	0.05	0.0	NA	0.43	NA							
pH	–	7.00	—	7.02	0.02	4.00	—	3.98	0.02	10.00	—	10.04	0.04			
ORP	mV	231	260	259.5	0.5											
cond.	us/cm	993	700	707	7	100.9		76	24.9							
sp. Cond.	us/cm	993	NA	1240	247	100.9	NA	124	24.1							

CALIBRATION CHECK

DO	% sat	100	NA													
DO	mg/L	–														
pH	–															
ORP	mV															
cond.	us/cm															
sp. Cond.	us/cm		NA													

Not used

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 3

Date of Calibration: 12/14/05 **Calibration:** Initials [illegible]

Last date of temperature calibration: 12/13/05 Time 0800

Air Temperature: am: 1.09 pm: 6.93

Sol'n Temperature: am: ~5 pm: 16.8 **Cal Check:** Initials JNH

Atmos. Pressure: am: 767.5 pm: 768 Time: 1600

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	95.2	4.8											
DO	mg/L	–	14.7	~~13.9~~ 14.75	0.8	0.0	NA	0.111	NA							
pH	–	7.00	—	6.99	0.01	4.00	—	3.99	0.01	10.00	—	10.02	0.02			
ORP	mV	231	260.0	260.0	~~29.0~~ 0.0											
cond.	us/cm	~~998~~ 993	700	701	01	1009		76	76.9							
sp. Cond.	us/cm	993	NA	1235	242	1009	NA	124	24.9							

CALIBRATION CHECK

DO	% sat	100	NA	102.9	2.9											
DO	mg/L	–	12.44	12.22	~~0.22~~ 0.11											
pH	–	7.0		6.86	0.14											
ORP	mV	231	230	229.0	1.0											
cond.	us/cm	993	835	825	10											
sp. Cond.	us/cm	993	NA	1025	32											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05 - 12/14/05 12/15/05 **ID No.:** 4

Date of Calibration: ~~12/14/05~~ 12/14/05 **Calibration:** **Initials** JNH

Last date of temperature calibration: 12/13/05 **Time** 8:30

Air Temperature: am: 1.56 pm: 14.0

9147 **Sol'n Temperature:** am: 4.88 pm: 16.8 **Cal Check:** **Initials** JNH

Atmos. Pressure: am: 756.1 pm: 789 **Time :** 1600

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	106.9	6.9											
DO	mg/L	–	14.7	14.68	0.02	0.0	NA	0.50	NA							
pH	–	7.0	–	7.0	0	4.0		3.99	0.01	10.0	–	10.04	0.04			
ORP	mV	231	260	260	0											
cond.	us/cm	993	700	699	1	100.6	< 82	64	~ 18							
sp. Cond.	us/cm	993	NA	1142	149	100.6	NA	111	10.4							

CALIBRATION CHECK

DO	% sat	100	NA	110	10											
DO	mg/L	–	10.8	11.4	0.6											
pH	–	7.0		6.96	0.04											
ORP	mV	231	237	225	12											
cond.	us/cm	993	985	952	15											
sp. Cond.	us/cm	993	NA	1030	37											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- 12/14/05 **ID No.:** 5

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** Initials SMH

Last date of temperature calibration: 12/13/05 Time 8:30

Air Temperature: am: -1.58 pm: 18.1

Sol'n Temperature: am: 25 pm: 17.6 **Cal Check:** Initials

Atmos. Pressure: am: pm: 769 Time: 1740 1240

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	106.0	6.0											
DO	mg/L	–	14.7	14.76	0.08	0.0	NA	0.42	NA							
pH	–	7.0		6.99	0.01	4.0		4.01	0.01	10.0		10.01	0.01			
ORP	mV	231	260	260	0											
cond.	us/cm	993	700	704	4	100.6	1982	59	~93							
sp. Cond.	us/cm	993	NA	1243	280	100.6	NA	102	1.4							

CALIBRATION CHECK

DO	% sat	100	NA	111.8	11.8											
DO	mg/L	–	9.50	12.19	2.69											
pH	–	7.00		6.93	0.07											
ORP	mV	231	240	226	14											
cond.	us/cm	993	863	1258	395											cond way off?
sp. Cond.	us/cm	993	NA	1142	149											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 1

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** Initials JNH

Last date of temperature calibration: Time 0745

Air Temperature: am: 25.04 pm: 5.91

ORP **Sol'n Temperature:** am: 21.53 pm: **Cal Check:** Initials JNH

Atmos. Pressure: am: 769.5 pm: 765 Time: 1615

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	99.4	0.6											
DO	mg/L	–	8.24	8.24	0	0.0	NA	0.09	NA							
pH	–	7.0	–	7.0	0	4.0	–	4.0	0	10.0	–	10.00	0			
ORP	mV	231	234	233.9	0.1											
cond.	us/cm	993	915	915	0	100.9	100.9	106	~~5.9~~							
sp. Cond.	us/cm	993	NA	939	54	100.9	NA	105	~~5.9~~ 1.9							

CALIBRATION CHECK

DO	% sat	100	NA	102.1	2.1											
DO	mg/L	–	12.74	12.79	0.05											
pH	–	7.0	—	6.84	.16											
ORP	mV	231	250	250.7	.7											
cond.	us/cm	993	840	831	9											
sp. Cond.	us/cm	993	NA	984	9											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 2

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** Initials LO

Last date of temperature calibration: Time 08:30

Air Temperature: am: ~~50~~ ~25 pm: 12.0

Sol'n Temperature: am: 21.33 pm: 9.5 **Cal Check:** Initials JNH

Atmos. Pressure: am: 768.3 pm: 764 Time : 1605

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	101.1	1.1											
DO	mg/L	–	8.24	8.82	0.58	0.0	NA	0.11	NA							
pH	–	7.0		7.00	–	4.0		4.00	–	10.0		10.02	0.02	7.0	6.96	
ORP	mV	231	235	235	–											
cond.	us/cm	993	923	923	–	1009	93.9	106	12.1							
sp. Cond.	us/cm		NA	990	3		NA	113	112.1							

CALIBRATION CHECK

DO	% sat	100	NA	108.3	8.3											
DO	mg/L	–	10.74	11.6	0.86											
pH	–	7.0		6.89	.11											
ORP	mV	231	250	216	34											
cond.	us/cm	993	845	864	19											
sp. Cond.	us/cm	993	NA	1020	27											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 3

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** Initials LO

Last date of temperature calibration: Time 08:30

Air Temperature: am: ~25 pm: 10.6

Sol'n Temperature: am: ~~20.8~~ 20.9 pm: 9.5 **Cal Check:** Initials JNH

Atmos. Pressure: am: ~~760.7~~ 769.1 pm: 764 Time: 1615

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	101.1	1.1											
DO	mg/L	–	~~9.0~~ 8.24	9.8	~~1.56~~	0.0	NA	0.07	NA							
pH	–	7.0		7.00	–	4.0		4.00	–	10.0		10.01	0.01	7.0	6.91	
ORP	mV	231	235	235.1	0.1											
cond.	us/cm	993	913	913	–	100.9	929	115	92.1							
sp. Cond.	us/cm		NA	990	3		NA	124	83.9							

CALIBRATION CHECK

DO	% sat	100	NA	91.5	8.5											changed membrane
DO	mg/L	–	11.28	10.17	1.11											
pH	–	7.0		7.0	0											
ORP	mV	231	250	245	5											
cond.	us/cm	993	845	857	12											
sp. Cond.	us/cm	993	NA	1007	14											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 4

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** **Initials** JNH

Last date of temperature calibration: **Time** 0745

Air Temperature: am: 25.12 pm: 8.15

Sol'n Temperature: am: 22.1 pm: 17.5 **Cal Check:** **Initials** JNH

Atmos. Pressure: am: 754 pm: 728 **Time :** ~~15~~ 14

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	98.8	1.2											
DO	mg/L	–	8.18	8.18	0	0.0	NA	2.07	NA							
pH	–	7.0	–	7.0	0	4.0	–	4.0	0	10.0	–	10.02	0.02			
ORP	mV	231	234	233	1											
cond.	us/cm	993	915	915	0	100.9	1009	104	3.1							
sp. Cond.	us/cm	993	NA	994	1	100.9	NA	103	2.1							

CALIBRATION CHECK

DO	% sat	100	NA	95.3	4.7											
DO	mg/L	–	11.3	10.96	0.34											
pH	–	7.00		6.84	.16											
ORP	mV	231	244	242.5	1.5											
cond.	us/cm	993	860	893	~~38~~ 100	23										
sp. Cond.	us/cm	993	NA	1041	48											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 5

Date of Calibration: ~~12/14/05~~ 12/15/05 **Calibration:** Initials JNH

Last date of temperature calibration: Time 0745

Air Temperature: am: 27.15 pm: ~7°C

ORP **Sol'n Temperature:** am: 22.29 pm: 14.8 **Cal Check:** Initials

Atmos. Pressure: am: 768.5 pm: 730 Time: 1615

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	94.7	5.3											
DO	mg/L	–	7.80	7.60	0.2	0.0	NA	0.09	NA							
pH	–	7.0	–	7.0	0	4.0	–	3.99	0.01	10.0	–	10.02	0.02			
ORP	mV	231	234	234	0											
cond.	us/cm	993	915	915	0	1000	100.9	103	2.1							
sp. Cond.	us/cm	993	NA	991	2	100.0	NA	103	2.1							

CALIBRATION CHECK

DO	% sat	100	NA	94.3	5.7											
DO	mg/L	–	11.83	10.28	1.55											
pH	–	7.00		7.04	0.04											
ORP	mV	231	244	239.1	4.9											
cond.	us/cm	993	850	835	15											
sp. Cond.	us/cm	993	NA	932	61											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 1

Date of Calibration: ~~12/15/05~~ 12/16/05 **Calibration:** **Initials** JNH

Last date of temperature calibration: **Time** 08:00

Air Temperature: am: 24.6 pm: 9.31

Sol'n Temperature: am: 21.4 pm: 19.14 **Cal Check:** **Initials** JNH

Atmos. Pressure: am: 757 pm: 733 **Time :** 1428

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	98.1	1.9											
DO	mg/L	–	8.24	824	0	0.0	NA	0.03	NA							
pH	–	7.0		7.0	0	4.0		3.99	0.01	10.0		10.0	0			
ORP	mV	231	234	233.8	0.2											
cond.	us/cm	993	934	917	17	100.4	94.4	94	0.04							
sp. Cond.	us/cm	993	NA	994	1	100.9	NA	100	0.9							

CALIBRATION CHECK

DO	% sat	100	NA	101.3	1.3											
DO	mg/L	–	11.3	11.5	0.2											
pH	–	7.0		6.98	0.02											
ORP	mV	231	237	239.6	0.4											
cond.	us/cm	993	999	897	8											
sp. Cond.	us/cm	993	NA	995	8											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 3

Date of Calibration: 12/15/05 12/16/05 **Calibration:** **Initials** JWH

Last date of temperature calibration: **Time** 08:00

Air Temperature: am: 23.98 pm:

Sol'n Temperature: am: 21.42 pm: **Cal Check:** **Initials** Not used

Atmos. Pressure: am: 757.1 pm: **Time :**

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	97.8	2.2											
DO	mg/L	–	8.24	8.24	0	0.0	NA	0.03	NA							
pH	–	7.0		6.99	0.01	4.0		4.0	0	10.0		10.02	0.02			
ORP	mV	231	234	234	0											
cond.	us/cm	993		917	~~76~~	1019	99.4	99	0.4							
sp. Cond.	us/cm	993	NA	981	12	100.9	NA	100	0.9							

CALIBRATION CHECK

Not used

DO	% sat	100	NA													
DO	mg/L	–														
pH	–															
ORP	mV															
cond.	us/cm															
sp. Cond.	us/cm		NA													

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 4

Date of Calibration: ~~12/15/05~~ 12/16/05 **Calibration:** **Initials** JNH

Time 08:00

Last date of temperature calibration:

Air Temperature: am: 25.60 pm: 9.46

Sol'n Temperature: am: 22.2 pm: 19.24 **Cal Check:** **Initials** JNH

Atmos. Pressure: am: 771 pm: 768 **Time :** 1428

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	99.8	0.2											
DO	mg/L	–	8.24	8.24	0	0.0	NA	5.08	NA							
pH	–	7.0		7.0	0	4.0		4.0	0	10.0		10.02	0.02			
ORP	mV	231	234	234.1	0.1											
cond.	us/cm	993	917	918	1	100.9	94.4	92	2.4							
sp. Cond.	us/cm	993	NA	981	12	100.9	NA	98.0	2.9							

CALIBRATION CHECK

DO	% sat	100	NA	102.6	2.6											
DO	mg/L	–	11.3	11.7	.4											
pH	–	7.0	–	6.84	.16											
ORP	mV	231	237	237.1	.1											
cond.	us/cm	993	885	880	5											
sp. Cond.	us/cm	993	NA	971	22											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 5

Date of Calibration: ~~12/15/05~~ 12/16/05 **Calibration:** **Initials** JNH

Last date of temperature calibration: **Time** 08:00

Air Temperature: am: 23.96 pm:

Sol'n Temperature: am: 21.4 pm: **Cal Check:** **Initials** Not used

Atmos. Pressure: am: 756.0 pm: **Time :**

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	101.4	.4											
DO	mg/L	–	8.55	8.5	0.05	0.0	NA	0.07	NA							
pH	–	7.0		7.0	0	4.0		4.0	0	10.0		10.0	0			
ORP	mV	231	234	234	0											
cond.	us/cm	993	917	917	0	100.9	94.4	93	1.4							
sp. Cond.	us/cm	993	NA	974	19	100.9	NA	99	2.9							

CALIBRATION CHECK

DO	% sat	100	NA													
DO	mg/L	–														
pH	–															
ORP	mV															
cond.	us/cm															
sp. Cond.	us/cm		NA													

Not used

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4
Field Activities: Groundwater Sampling
Fieldwork Dates: 12/13/05-
Date of Calibration: 12/19/5
Last date of temperature calibration: 12/16/5
Air Temperature: am: 17.96 pm: ~~7.02~~ 8.62
Sol'n Temperature: am: 17.1 pm: 17.10
Atmos. Pressure: am: 762.0 pm: 757.2

Instrument: ysi
Model No.: 6820
ID No.: 1
Calibration: Initials [illegible] Time 0830
Cal Check: Initials CO Time : 18:15

NOTES.
cond 993 umhos/cm A# 3458 9/06
" 100.7 " A# 3442 8/06
pH 7 L# 041617-24 5/06
pH 4 L# 042580-24 6/06
pH 10 L# 042578-24 6/06

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	10~~3.0~~ 0.3	0.3											
DO	mg/L	–	9.43	9.~~76~~ 51	.08	0.0	NA	0.42	NA							
pH	–	7.00		7.00		4.00		3.99		10.00		10.02		7.00	6.96	
ORP	mV	231	241	244.1	0.1											checked
cond.	us/cm	993	8~~84~~ 52	8~~84~~ 52	0	100.7	86.2	93								
sp. Cond.	us/cm	—	NA	~~1035~~ 956	37	—	NA	109	8.3							

CALIBRATION CHECK

DO	% sat	100	NA	102.2	2.2											
DO	mg/L	–	11.5	~~12.37~~ 11.90	0.40											
pH	–	7.0		6.95	0.05											
ORP	mV	231	242	244	2											
cond.	us/cm	993	844	823	21											
sp. Cond.	us/cm		NA	970	23											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** ysi

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 2

Date of Calibration: 12/19/5 **Calibration:** **Initials** [illegible] / LO

Last date of temperature calibration: 12/16/5 **Time** 0830

Air Temperature: am: 18.26 pm: 3.75

Sol'n Temperature: am: 17.84 pm: 16.39 **Cal Check:** **Initials** LO

Atmos. Pressure: am: 760.9 pm: 758.1 **Time :** 18:15

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	100.3												
DO	mg/L	–	9.43	9.46	0.03	0.0	NA	0.09	NA							
pH	–	7.0		7.00	–	4.0		3.99	0.01	10.0		9.98	0.02	7.0	6.99	
ORP	mV	231	242	246.4	4.4											
cond.	us/cm	993	858	858	–	100.7	87.3	90	2.7							
sp. Cond.	us/cm		NA	991	2		NA	104	3.3							

CALIBRATION CHECK

DO	% sat	100	NA	100.6	0.6											
DO	mg/L	–	13.2	13.38	0.18											
pH	–	7.0		6.97	0.03											
ORP	mV	231	242	243.9	1.9											
cond.	us/cm	993	848	802	46											
sp. Cond.	us/cm		NA	942	51											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4
Field Activities: Groundwater Sampling
Fieldwork Dates: 12/13/05-
Date of Calibration: 12/19/5
Last date of temperature calibration: 12/16/5
Air Temperature: am: 15.17 pm: 11.46 → 12.90
Sol'n Temperature: am: 17.90 pm:
Atmos. Pressure: am: 761.7 pm: 758

Instrument: YSI
Model No.: 6820
ID No.: 3
Calibration: Initials [illegible] Time 0830
Cal Check: Initials [illegible] Time: 1807

NOTE: temp increased to 16.75 during cal/warm up.
. changed O_2 membrane after initial cal.

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	10 ~~100~~	~~NA~~	~~100.3~~	~~0.3~~	100	NA	97.5	2.5							2nd cal failed (.34)
DO	mg/L	10 ~~10.07~~	~~9.65~~ 30	~~0.77~~		~~0.0~~	9.93 NA	9.59	NA .34	0.0	NA	0.09	NA			
pH	–	7.00		7.00		4.00		3.99		10.00		10.03		7.00	6.95	
ORP	mV	231	241	243.3	2.3											chked
cond.	us/cm	993	859	830	29	100.7	~~86.2~~ 87.0	~~89~~ 93	5							
sp. Cond.	us/cm	–	NA	957	36	–	NA	104	3.3							

CALIBRATION CHECK

DO	% sat	100	NA	94.9	5.1											
DO	mg/L	–	10.50	10.29	.21											
pH	–	7.00		6.92	0.08											
ORP	mV	231	240	236.7	3.3											
cond.	us/cm	993	[illegible]	813	31											
sp. Cond.	us/cm	–	NA	956	< 20% 63											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI
Field Activities: Groundwater Sampling **Model No.:** 6820
Fieldwork Dates: 12/13/05- **ID No.:** 4
Date of Calibration: 12/19/5 **Calibration:** **Initials** [signature]
Last date of temperature calibration: 12/16/5 **Time** 0830
Air Temperature: am: 18.17 pm: 8.66 → 10.92
Sol'n Temperature: am: 19.1 pm: 16.49 Cond 17.4°C **Cal Check:** **Initials** [signature]
Atmos. Pressure: am: 762.1 pm: 761.4 **Time :** 1807

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	100.3	0.3											
DO	mg/L	–	9.45	9.50	.05	0.0	NA	0.38	NA							
pH	–	7.00	—	7.00		4.00		3.99		10.00		10.03		7.00	6.99	
ORP	mV	231	241	243.5	2.5											check
cond.	us/cm	993	884	884	0	100.7	86.4	89								
sp. Cond.	us/cm	—	NA	1035	42	—	NA	105	43							

CALIBRATION CHECK

DO	% sat	100	NA	103.7	3.7											
DO	mg/L	–	11.09	11.42	0.33											
pH	–	7.00		6.97	0.03											
ORP	mV	231	240	241.8	1.8											
cond.	us/cm	993	8.50	888	38											
sp. Cond.	us/cm	—	NA	1036	< 20%											

43

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 5

Date of Calibration: 12/19/5 **Calibration:** **Initials** ~~SD~~ / LO

Last date of temperature calibration: 12/16/5 **Time** 0830

note: temp increased

Air Temperature: am: 14.11 ~~16.86~~ pm: ~~7.66~~ 9.48

Sol'n Temperature: am: 17.98 pm: 17.27 **Cal Check:** **Initials** LO

Atmos. Pressure: am: ~~761.8~~ 760.6 pm: 760.4 **Time :** 18:15

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	100.1	0.1											DO membrane changed
DO	mg/L	–	~~9.63~~ ~~10.29~~	9.81 ~~10.27~~	0.18	0.0	NA	0.08 ~~0.04~~	NA			~~10.03~~ ~~9.48~~				
pH	–	7.0		7.00	–	4.0		3.99	0.01	10.0			0.03	7.0	6.95	
ORP	mV	231	242	243.1	1.1											
cond.	us/cm	993	861	861	–	100.7	87.8	86	1.8							
sp. Cond.	us/cm		NA	998	5		NA	100	0.7							

CALIBRATION CHECK 97.3 2.7

DO	% sat	100	NA	~~96.7~~	~~3.3~~ 0											
DO	mg/L	–	11.40	~~11.52~~ 11.10	0.30											
pH	–	7.0		7.04	0.04											
ORP	mV	231	241	242.1	1.1											
cond.	us/cm	993	846	850	4											
sp. Cond.	us/cm		NA	998	5											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05 - 12/2 **ID No.:**

Date of Calibration: 12/20/05 **Calibration:** **Initials** [illegible]

Last date of temperature calibration: 12/19/05 **Time** 0800

Air Temperature: am: 23.54 pm: 29.24

#47 **Sol'n Temperature:** am: 24.88 pm: 14.90 **Cal Check:** **Initials** SNH

Atmos. Pressure: am: 759.7 pm: 759 **Time :** 1730

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	99.3	0.7											
DO	mg/L	–	8.59	8.55	0	0.0	NA	5.07	NA							
pH	–	7.0	–	7.0	–	4.0	–	4.0	–	10.0	–	10.01	0.01	7.0	6.96	
ORP	mV	231	237.5	236.9	0.6											
cond.	us/cm	993	915	915	–	100.9	92.6	96.4								
sp. Cond.	us/cm	993	NA	985	8	100.9	NA	107								

CALIBRATION CHECK

DO	% sat	100	NA	107.5	7.6											
DO	mg/L	–	13.08	13.4	0.32											
pH	–	7.0	–	6.99	0.11											
ORP	mV	231	244	246	2											
cond.	us/cm	993	857	845	12											
sp. Cond.	us/cm	993	NA	977	16											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 2

Date of Calibration: 12/20/05 **Calibration:** **Initials** JM

Last date of temperature calibration: 12/19/05 **Time** 0800

Air Temperature: am: 23.9 pm: 8.42

Sol'n Temperature: am: 24.3 pm: 14.44 **Cal Check:** **Initials** JMH

Atmos. Pressure: am: 759.7 pm: 758.5 **Time :** 1730

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	99.3	0.7											
DO	mg/L	–	8.55	8.57	0.02	0.0	NA	0.08	NA							
pH	–	7.0	–	7.0	–	4.0	–	4.0	–	10.0	–	10.01	0.01	7.0	6.97	
ORP	mV	231	236	236.1	0.1											
JMH cond.	us/cm	993	~~915~~ 915	~~915~~ 915	0	100.9	92.6	96.1								
sp. Cond.	us/cm	993	NA	~~990~~ 990	~~3~~ 3	101.9	NA	110								

CALIBRATION CHECK

DO	% sat	100	NA	101.7	
DO	mg/L	–	13.04	13.20	
pH	–				
ORP	mV				
cond.	us/cm				
sp. Cond.	us/cm		NA		

Not used 1

1 Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** ysi

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 3

Date of Calibration: 12/20/05 **Calibration:** **Initials** [illegible]

Last date of temperature calibration: 12/19/05 **Time** 0800

Air Temperature: am: 23.05 pm: 8.42

Sol'n Temperature: am: 22.9 pm: 14.36 **Cal Check:** **Initials** JM

Atmos. Pressure: am: 759.7 pm: 757.4 **Time :** 1730

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	99.5	0.5											
DO	mg/L	–	8.55	8.55	0.0	0.0	NA	0.31	NA							
pH	–	7.0	–	7.0	–	4.0	–	4.0	—	10.0	–	10.01	0.1	7.0	6.97	
ORP	mV	231	238	241	3											
cond.	us/cm	993	904	904	0	1000	92.6	92								
sp. Cond.	us/cm	993	NA	993	0	100.0	NA	103								

CALIBRATION CHECK

DO	% sat	100	NA	100.5	0.5											
DO	mg/L	–	13.08	13.24	0.16											
pH	–	7.0	–	6.98	0.02											
ORP	mV	231	244	247.5	2.5											
cond.	us/cm	993	807	799	8											
sp. Cond.	us/cm	993	NA	1002	9											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** ysi
Field Activities: Groundwater Sampling **Model No.:** 6820
Fieldwork Dates: 12/13/05- **ID No.:** 4
Date of Calibration: 12/20/05 **Calibration:** **Initials** JdS
Cond T° **Last date of temperature calibration:** 12/13/05 **Time** 0800
Air Temperature: am: 24.22 pm: 9.76
(993) 20.32 **Sol'n Temperature:** am: 18.50 pm: 14.47 **Cal Check:** **Initials** JMH
Atmos. Pressure: am: 757 pm: 704 **Time :** 1730

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	99.9	0.1											
DO	mg/L	–	8.53	8.55	0.02	0.0	NA		NA							
pH	–	7.00		7.00	–	4.00		4.00	–	10.00		10.03	0.03	7.00	6.99	
ORP	mV	231	239	230.3	8.7											
cond.	us/cm	993	904	904	0	100.7	88.7	91								
sp. Cond.	us/cm	993	NA	1016	23	18.5	NA	103								

CALIBRATION CHECK

DO	% sat	100	NA	101.1	1.1											
DO	mg/L	–	13.43	13.60	0.17											
pH	–	7.0		6.95	0.05											
ORP	mV	231	244	245	1											
cond.	us/cm	993	807	809	2											
sp. Cond.	us/cm	993	NA	1007	14											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** ysi

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 5

Date of Calibration: 12/20/05 **Calibration:** **Initials** [illegible]

Last date of temperature calibration: **Time** 0800

Cond. (1000) 20.18

Air Temperature: am: 22.73 pm: ~~7.80~~ 9.85

Sol'n Temperature: am: 18.16 pm: **Cal Check:** **Initials** [illegible]

Atmos. Pressure: am: 759.8 pm: 761.1 **Time :** 1811

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	96.5	3.5											
DO	mg/L	–	8.58	8.38	0.2	0.0	NA		NA							
pH	–	7.00		7.00	–	4.00		4.00	–	10.00		10.02	0.02	7.00	6.99	
ORP	mV	231	239	239.6	0.6											
cond.	us/cm	993	902	904	2	100.7	88.9	90								
sp. Cond.	us/cm	993	NA	1023	30	18.5°	NA	102	1.3							

CALIBRATION CHECK

DO	% sat	100	NA 20	96.4	3.6											
DO	mg/L	–	11.98	10.90	0.38											
pH	–	7.00		7.02	.02											
ORP	mV	231	16.2° 242	241.8	0.2											
cond.	us/cm	993	15.8° 809	835	26											
sp. Cond.	us/cm		NA	1015	22											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820 6920

Fieldwork Dates: 12/13/05- **ID No.:** 6 SN - Sonde - 04F10754AA Keypad - 04F11462AC

Date of Calibration: 12/20/05 **Calibration:** **Initials** JDS

cond t° **Last date of temperature calibration:** **Time** 0800

Air Temperature: am: 18.47 pm: ~~8.94~~ 10.20

(99%) 19.85 **Sol'n Temperature:** am: 18.74 pm: **Cal Check:** **Initials** JDS

Atmos. Pressure: am: 759.6 pm: 762.3 **Time :** 1811

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	98.7	0.3											
DO	mg/L	–	9.34	9.25	009	0.0	NA		NA							
pH	–	7.00		7.00	–	4.00		4.00	–	10.00		10.00	–	7.00	6.99	
ORP	mV	231	239	240.0	1											
cond.	us/cm	993	897	879	20	100.9	88.6	87								
sp. Cond.	us/cm		NA	1006	13	18.4	NA	99								

CALIBRATION CHECK

DO	% sat	100	NA	101.4	1.4											
DO	mg/L	–	11.30	11.35	005											
pH	–	7.00		7.06	0.06											
ORP	mV	231	16.5 240	235	7											
cond.	us/cm	993	15.5 814	833	19											
sp. Cond.	us/cm	–	NA	1015	22											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 1

Date of Calibration: 12/28/05 **Calibration:** Initials JNH

Last date of temperature calibration: 12/20/05 Time 07:30

Air Temperature: am: 5.91 pm: 12.36

Sol'n Temperature: am: 10.38 pm: 18.64 **Cal Check:** Initials JNH

Atmos. Pressure: am: 764 pm: 762 Time : 1450

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	100.5	0.5											
DO	mg/L	–	12.11	12.11	0	0.0	NA	0.09	NA							
pH	–	7.0		7.02	0.02	4.0		4.03	0.03	10.0		10.04	0.04	7.0	7.03	
ORP	mV	231	250.5	251.5	1.0											
cond.	us/cm	993	709	709	0	100.9	82	76								
sp. Cond.	us/cm	993	NA	1086	63	100.9	NA	117								

CALIBRATION CHECK

DO	% sat	100	NA	99.9	0.1											
DO	mg/L	–	10.50	10.54	0.04											
pH	–	7.0	—	7.10	1.0											
ORP	mV	231	240	237.7	2.3											
cond.	us/cm	993	874	895	21											
sp. Cond.	us/cm	993	NA	1005	12											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 2

Date of Calibration: 12/21/05 **Calibration:** Initials JNH

Last date of temperature calibration: 12/20/05 Time 0730

Air Temperature: am: 19.03 pm: 9.59

Sol'n Temperature: am: 15.04 pm: 18.45 **Cal Check:** Initials JNH

Atmos. Pressure: am: 763.7 pm: 762.5 Time : 1450

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	96.6	3.4											
DO	mg/L	–	9.06	9.06	0	0.0	NA	0.09	NA							
pH	–	7.0	—	7.0	0	4.0	—	3.99	0.01	10.0	—	10.02	0.02	7.0	7.04	
ORP	mV	231	244	244.1	0.1											
cond.	us/cm	993	773	774	1	100.9	792	76								
sp. Cond.	us/cm	993	NA	1005	12	1009	NA	1010.5								

CALIBRATION CHECK

DO	% sat	100	NA	97.1	2.9											
DO	mg/L	–	11.28	11.09	0.19											
pH	–	7.0		6.99	0.01											
ORP	mV	231	240	238.4	2.6											
cond.	us/cm	993	874	871	2											
sp. Cond.	us/cm	993	NA	1017	24											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park out **Instrument:** YSI
Field Activities: Groundwater Sampling **Model No.:** 6820-C-M
Fieldwork Dates: 12/13/05- **ID No.:** 3 01J0118
Date of Calibration: 12/21/05 **Calibration:** Initials SNH
Last date of temperature calibration: 12/20/05 Time 0730
Air Temperature: am: 7.03 pm: 6.47
Sol'n Temperature: am: 9.04 pm: see below. **Cal Check:** Initials JNH + KH
Atmos. Pressure: am: 764.5 pm: 771 Time: 1450

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	99.2	0.8											
DO	mg/L	–	12.11	12.11		0.0	NA	0.08	NA							
pH	–	7.0	–	6.99	0.01	4.0	–	4.0	0	10.0	–	10.0	0	7.0	6.99	
ORP	mV	231	250.5	253.4	2.9											
cond.	us/cm	993	709	708	1	100.6	<82	72								
sp. Cond.	us/cm	993	NA	1023	30	100.6	NA	107								

CALIBRATION CHECK

DO	% sat	100	NA	93.0	7.0											
DO	mg/L	–	12.11	11.96	0.15											
pH	–	7.00		7.01	0.01											
ORP	mV	231	18.2°C 240	244	4											
cond.	us/cm	993	18.4°C 968	968	0											
sp. Cond.	us/cm	—	NA	1110	1110											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park 004 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6820

Fieldwork Dates: 12/13/05- **ID No.:** 4

Date of Calibration: 12/21/05 **Calibration:** Initials SNH

Last date of temperature calibration: 12/20/05 Time 0730

Air Temperature: am: 7.41 pm: 4.01

Sol'n Temperature: am: 9.86 pm: 18.47 **Cal Check:** Initials SNH

Atmos. Pressure: am: 766.2 pm: 747 Time : 1510

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	Units	Value	Standard temp/pres. correction	Reading	Difference (correction vs.reading)	Value	Standard temp/pres. correction	Reading	Difference	Value	Standard temp/pres. correction	Reading	Difference	Standard Value	Reading	Comments
DO	% sat	100	NA	100.8	0.8											
DO	mg/L	–	12.11	12.11	0	0.0	NA	0.04	NA							
pH	–	7.0		6.94	0.01	4.0	–	4.0		10.0	–	10.06		7.0	7.06	
ORP	mV	231	250.5	250.4	0.1											
cond.	us/cm	993	709	708	1	100.9	C92	70								
sp. Cond.	us/cm	993	NA	1054	61	100.4	NA	104								

CALIBRATION CHECK

DO	% sat	100	NA	107.9	107.9											
DO	mg/L	–	13.43	13.78	0.35											
pH	–	7.0	–	7.08	0.08											
ORP	mV	231	240	243.4	3.4											
cond.	us/cm	993	893	899	5											
sp. Cond.	us/cm	993	NA	1061	68											

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

YSI Water Quality Calibration Log

Site Name: Iron Horse Park OU4 **Instrument:** YSI

Field Activities: Groundwater Sampling **Model No.:** 6920

Fieldwork Dates: 12/13/05- **ID No.:** 5

Date of Calibration: 12/21/05 **Calibration:** Initials SNH

Last date of temperature calibration: 12/20/05 Time 0730

Air Temperature: am: 15.9 pm:

Sol'n Temperature: am: 15.4 pm: **Cal Check:** Initials

Atmos. Pressure: am: 766.1 pm: Time :

CALIBRATION

		Standard #1				Standard #2				Standard #3				Check		
Parameter	**Units**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference (correction vs.reading)**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Value**	**Standard temp/pres. correction**	**Reading**	**Difference**	**Standard Value**	**Reading**	**Comments**
DO	% sat	100	NA	99.9	0.1											
DO	mg/L	–	9.93	9.93	0	0.0	NA	0.08	NA							
pH	–	7.0	–	7.0	–	4.0	–	4.0	–	10.0	–	10.04	0.04	7.0	6.96	
ORP	mV	231	244	245	0.5											
cond.	us/cm	693	773	774	3	100.9	80	67								
sp. Cond.	us/°cm	993	NA	1005	12	100.9	NA	95								

CALIBRATION CHECK

DO	% sat	100	NA													
DO	mg/L	–														
pH	–															
ORP	mV															
cond.	us/cm															
sp. Cond.	us/°cm		NA													

P.d 10/13 OSE

Record information for one instrument per sheet.
Use pen only, cross out with a single line.

APPENDIX B

Chain-of-Custody Documentation

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: ~~0266M~~ SD 12/13/05 R
Client No: ~~34958~~ 0266M

Region:	1	**Date Shipped:**	12/13/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	838301930236	1 Elizabeth DeCola 12/13/05 17:00	
CERCLIS ID:		**Shipped to:**	Columbia Analytical Services Kelso 1317 South 13th Ave Kelso WA 98626 (366) 577-7222	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park DAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06743	PE Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	PE-1206-04-02	S: 12/13/2005 15:30	PE
D06745	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-207B	S: 12/13/2005 15:45	FD 1
D06746	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-206D	S: 12/13/2005 15:45	–
D06754	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-207B-CS	S: 12/13/2005 15:50	FD 1

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
D-122.1 = D-122.1 (1,4-dioxane)			

TR Number: 1-502446878-121305-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION COPY

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

34958
Case No: 0266M
DAS No:
12/13/05
R

Region:	1	Date Shipped:	12/13/2005	Chain of Custody Record	Sampler Signature:
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:		Airbill:	838301930247	1 17:00	
CERCLIS ID:		Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA1Z44	PE Water/ Elizabeth DeCola	L/G	ILM05.3MS (21)	521210385 (Ice Only) (1)	PE-MS02173	S: 12/13/2005 15:30		PE
MA1Z45	PE Water/ Elizabeth DeCola	L/G	ILM05.3AES (21)	521210386 (Ice Only) (1)	PE-IS1825	S: 12/13/2005 15:30		PE
MA1Z46	PE Water/ Elizabeth DeCola	L/G	ILM05.3 Hg (21)	521210387 (Ice Only) (1)	PE-HG3926	S: 12/13/2005 15:30		PE
MA1Z67	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210563 (HNO3) (1)	OW-25	S: 12/13/2005 16:00	A1Z67	--
MA1Z68	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210564 (HNO3) (1)	OW-26	S: 12/13/2005 16:10	A1Z68	--
MA1Z69	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210539 (HNO3) (1)	MW-207B	S: 12/13/2005 15:45	A1Z69	FD 1
MA1Z70	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210540 (HNO3) (1)	MW-207B-CS	S: 12/13/2005 15:50	A1Z70	FD 1
MA1Z71	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210538 (HNO3) (1)	MW-206S	S: 12/13/2005 15:30	A1Z71	--
MA1Z72	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210537 (HNO3) (1)	MW-206D	S: 12/13/2005 15:45	A1Z72	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment iced?

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES, ILM05.3 Hg = ILM05.3 Hg (Mod. 1329.0), ILM05.3AES = ILM05.3 ICP AES, ILM05.3MS = ILM05.3 MS (Mod. No. 1329.0)

TR Number: 1-502446878-121305-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: ~~0288M~~ 12/13/05 SD
DAS No: 34958

R

Region:	1	Date Shipped:	12/13/2005
Project Code:		Carrier Name:	FedEx
Account Code:	,	Airbill:	838301930258
CERCLIS ID:		Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	12/13/05 16:20		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z41	PE Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210382 (Ice Only) (1)	PE-V05575	S: 12/13/2005 15:30		PE
A1Z42	PE Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210403 (Ice Only) (1)	PE-S80857	S: 12/13/2005 15:30		PE
A1Z43	PE Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	521210384 (Ice Only) (1)	PE-0018791	S: 12/13/2005 15:30		PE
A1Z58	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210025 (HCL), 521210026 (HCL), 521210027 (HCL) (3)	TB-01	S: 12/13/2005 16:15		Trip Blank
A1Z67	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	521210043 (HCL), 521210044 (HCL), 521210045 (HCL), 521210505 (Ice Only), 521210506 (Ice Only) (5)	OW-25	S: 12/13/2005 16:00	MA1Z67	--
A1Z68	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	521210051 (HCL), 521210052 (HCL), 521210053 (HCL), 521210507 (Ice Only), 521210508 (Ice Only) (5)	OW-26	S: 12/13/2005 16:10	MA1Z68	--
A1Z69	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210059 (HCL), 521210060 (HCL), 521210061 (HCL) (3)	MW-207B	S: 12/13/2005 15:45	MA1Z69	FD 1
A1Z70	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210067 (HCL), 521210068 (HCL), 521210069 (HCL) (3)	MW-207B-CS	S: 12/13/2005 15:50	MA1Z70	FD 1

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-121305-0004

REGION COPY

'R provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819: Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

31958

Case No: ~~0266M~~ SD 12/13/05 R

DAS No:

Region:	1	**Date Shipped:**	12/13/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	838301930258	1 12/13/05 1120	
CERCLIS ID:		**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A1Z71	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210075 (HCL), 521210076 (HCL), 521210077 (HCL) (3)	MW-206S	S: 12/13/2005	15:30	MA1Z71	–
A1Z72	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210081 (HCL), 521210082 (HCL), 521210083 (HCL) (3)	MW-206D	S: 12/13/2005	15:45	MA1Z72	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-121305-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lisea Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4902

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: ~~0200M~~ 12/13/05 R
DAS No: 34958

Region:	1	Date Shipped:	12/13/2005
Project Code:		Carrier Name:	FedEx
Account Code:		Airbill:	850742884350
CERCLIS ID:		Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Sampler Signature:

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	12/13/05 16:20		
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SA[illegible]			QC Type
A1Z68	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	521210049 (Ice Only), 521210050 (Ice Only) (2)	OW-26	S: 12/13/2005	16:10	MA1Z68	–
A1Z71	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210073 (Ice Only), 521210074 (Ice Only), 521210439 (Ice Only), 521210440 (Ice Only) (4)	MW-206S	S: 12/13/2005	15:20	MA1Z71	–
A1Z72	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210437 (Ice Only), 521210438 (Ice Only) (2)	MW-206D	S: 12/13/2005	15:45	MA1Z72	–

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121305-0005

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	**Date Shipped:**	12/14/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:		**Airbill:**	850742884393	Elizabeth DeCola 12/14/05 1500	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z69	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210057 (Ice Only), 521210058 (Ice Only), 521210441 (Ice Only), 521210442 (Ice Only) (4)	MW-207B	S: 12/13/2005 15:45	MA1Z69	FD 1
A1Z70	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210065 (Ice Only), 521210066 (Ice Only), 521210443 (Ice Only), 521210444 (Ice Only) (4)	MW-207B-CS	S: 12/13/2005 15:50	MA1Z70	FD 1

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121405-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0266M

R

Region: 1	**Date Shipped:** 12/14/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	**Carrier Name:** FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:	**Airbill:** 850742884382	1 [signature] 12/14/05 16:20	
CERCLIS ID: MAD051787323	**Shipped to:** Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:		3	
Site Name/State: Iron Horse Park RAS/MA		4	
Project Leader: Laurie O'Connor			
Action: Remedial Investigation			
Sampling Co: Metcalf & Eddy, Inc.			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z76	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210417 (Ice Only), 521210418 (Ice Only) (2)	MW-01C	S: 12/14/2005 14:00	MA1Z76	--
A1Z77	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210515 (Ice Only), 521210516 (Ice Only) (2)	OW-49	S: 12/14/2005 14:00	MA1Z77	--
A1Z78	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210517 (Ice Only), 521210518 (Ice Only) (2)	OW-50	S: 12/14/2005 14:30	MA1Z78	--
A1Z79	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210519 (Ice Only), 521210520 (Ice Only) (2)	OW-51	S: 12/14/2005 13:55	MA1Z79	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121405-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1
Project Code:	
Account Code:	
CERCLIS ID:	MAD051787323
Spill ID:	
Site Name/State:	Iron Horse Park RAS/MA
Project Leader:	Laurie O'Connor
Action:	Remedial Investigation
Sampling Co:	Metcalf & Eddy, Inc.

Date Shipped:	12/14/2005
Carrier Name:	FedEx
Airbill:	850742884040
Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100

Chain of Custody Record		Sampler Signature:
Relinquished By	(Date / Time)	Received By (Date / Time)
[signature]	12/14/05	
2		
3		
4		

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA1Z64	Field QC/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210524 (HNO3) (1)	EB-01	S: 12/14/2005 17:00	A1Z64	Equipment Blank
MA1Z73	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210527 (HNO3) (1)	MW-01	S: 12/14/2005 15:00	A1Z73	–
MA1Z76	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210530 (HNO3) (1)	MW-01C	S: 12/14/2005 14:00	A1Z76	–
MA1Z77	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210568 (HNO3) (1)	OW-49	S: 12/14/2005 14:00	A1Z77	–
MA1Z78	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210572 (HNO3), 521210573 (HNO3) (2)	OW-50	S: 12/14/2005 14:30	A1Z78	–
MA1Z79	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210570 (HNO3) (1)	OW-51	S: 12/14/2005 13:55	A1Z79	–

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MA1Z78		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES			

TR Number: 1-502446878-121405-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: 0266M
Client No:

Region:	1	**Date Shipped:**	12/14/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:		**Airbill:**	850742884100		
CERCLIS ID:		**Shipped to:**	Columbia Analytical Services Kelso 1317 South 13th Ave Kelso WA 98626 (366) 577-7222	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park DAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06744	Field QC/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	EB-01	S: 12/14/2005 17:00	Equipment Blank
D06748	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-01C	S: 12/14/2005 14:00	--
D06749	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	OW-50	S: 12/14/2005 14:30	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
D-122.1 = D-122.1 (1,4-dioxane)			

TR Number: 1-502446878-121405-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958	R
DAS No:	0266M	

Region:	1	**Date Shipped:**	12/14/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884371	1 [signature] RINSE	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z59	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210028 (HCL), 521210029 (HCL), 521210030 (HCL) (3)	TB-02	S: 12/14/2005 14:45		Trip Blank
A1Z64	Field QC/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	521210001 (HCL), 521210002 (HCL), 521210003 (HCL), 521210006 (Ice Only), 521210007 (Ice Only), 521210405 (Ice Only), 521210406 (Ice Only) (7)	EB-01	S: 12/14/2005 17:00	MA1Z64	Equipment Blank
A1Z73	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	521210087 (HCL), 521210088 (HCL), 521210089 (HCL), 521210411 (Ice Only), 521210412 (Ice Only) (5)	MW-01	S: 12/14/2005 15:00	MA1Z73	--
A1Z75	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210099 (HCL), 521210100 (HCL), 521210101 (HCL) (3)	MW-01B	S: 12/14/2005 16:00	MA1Z75	--
A1Z76	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210105 (HCL), 521210106 (HCL), 521210107 (HCL) (3)	MW-01C	S: 12/14/2005 14:00	MA1Z76	--
A1Z77	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210111 (HCL), 521210112 (HCL), 521210113 (HCL) (3)	OW-49	S: 12/14/2005 14:00	MA1Z77	--
A1Z78	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210123 (HCL), 521210124 (HCL), 521210125 (HCL) (3)	OW-50	S: 12/14/2005 14:30	MA1Z78	--
A1Z79	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210130 (HCL), 521210131 (HCL), 521210132 (HCL) (3)	OW-51	S: 12/14/2005 13:55	MA1Z79	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-121405-0005

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: ~~0266M~~ R

Region:	1	**Date Shipped:**	12/15/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884268
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	12/15/05 1837	
2		
3		
4		

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z80	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	521210155 (Ice Only), 521210156 (Ice Only), 521210157 (Ice Only), 521210158 (Ice Only), 521210159 (Ice Only), 521210160 (Ice Only) (6)	MW-203S	S: 12/15/2005 15:00	MA1Z80	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1Z80	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0)

TR Number: 1-502446878-121505-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	~~0266M~~ (D2)

R

Region:	1	**Date Shipped:**	12/15/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884280	1 12/15/05 1830	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z80	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210423 (Ice Only), 521210424 (Ice Only), 521210425 (Ice Only), 521210426 (Ice Only), 521210427 (Ice Only), 521210428 (Ice Only), 521210429 (Ice Only), 521210430 (Ice Only), 521210431 (Ice Only), 521210432 (Ice Only) (10)	MW-203S	S: 12/15/2005 15:00	MA1Z80	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1Z80	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121505-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: 0266M
Client No:

R

Region:	1	**Date Shipped:**	12/15/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884095
CERCLIS ID:		**Shipped to:**	Columbia Analytical Services Kelso 1317 South 13th Ave Kelso WA 98626 (366) 577-7222
Spill ID:			
Site Name/State:	Iron Horse Park DAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	12/15/05 1830		
2			
3			
4			

Sampler Signature:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06747	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-01A	S: 12/15/2005 14:50	--
D06750	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (2)	MW-203S	S: 12/15/2005 15:00	--
D06752	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-203D	S: 12/15/2005 12:10	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** D06750	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key: D-122.1 = D-122.1 (1,4-dioxane)	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TR Number: 1-502446878-121505-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: ~~0266M~~ 27

R

Region:	1	**Date Shipped:**	12/15/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742883960
CERCLIS ID:	MAD051787323	**Shipped to:**	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	12/15/05 1530		
2			
3			
4			

Sampler Signature:

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA1Z74	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210528 (HNO3) (1)	MW-01A	S: 12/15/2005 14:50	A1Z74	--
MA1Z80	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210534 (HNO3) (1)	MW-203S	S: 12/15/2005 15:00	A1Z80	--
MA1Z83	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210535 (HNO3) (1)	MW-204S	S: 12/15/2005 14:38	A1Z83	--
MA1Z84	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210536 (HNO3) (1)	MW-205S	S: 12/15/2005 13:15	A1Z84	--
MA1Z85	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210532 (HNO3) (1)	MW-203B	S: 12/15/2005 11:55	A1Z85	--
MA1Z86	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210533 (HNO3) (1)	MW-203D	S: 12/15/2005 12:10	A1Z86	--
MA1Z94	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210559 (HNO3) (1)	OW-09	S: 12/15/2005 15:35	A1Z94	--
MA1Z95	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210560 (HNO3) (1)	OW-10	S: 12/15/2005 16:10	A1Z95	--
MA1Z96	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210561 (HNO3) (1)	OW-12	S: 12/15/2005 15:40	A1Z96	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES

TR Number: 1-502446878-121505-0005

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0286M

R

Region:	1	**Date Shipped:**	12/15/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884360
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	12/15/05 1830	
2		
3		
4		

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z60	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210031 (HCL), 521210032 (HCL), 521210033 (HCL) (3)	TB-03	S: 12/15/2005 13:00		Trip Blank
A1Z74	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210093 (HCL), 521210094 (HCL), 521210095 (HCL) (3)	MW-01A	S: 12/15/2005 14:50	MA1Z74	–
A1Z80	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210136 (HCL), 521210137 (HCL), 521210138 (HCL), 521210139 (HCL), 521210140 (HCL), 521210141 (HCL), 521210142 (HCL), 521210143 (HCL), 521210144 (HCL) (9)	MW-203S	S: 12/15/2005 15:00	MA1Z80	–
A1Z83	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210174 (HCL), 521210175 (HCL), 521210176 (HCL) (3)	MW-204S	S: 12/15/2005 14:38	MA1Z83	–
A1Z84	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210182 (HCL), 521210183 (HCL), 521210184 (HCL) (3)	MW-205S	S: 12/15/2005 13:15	MA1Z84	–
A1Z85	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210188 (HCL), 521210189 (HCL), 521210190 (HCL) (3)	MW-203B	S: 12/15/2005 11:55	MA1Z85	–
A1Z86	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210194 (HCL), 521210195 (HCL), 521210196 (HCL) (3)	MW-203D	S: 12/15/2005 12:10	MA1Z86	–
A1Z94	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210252 (HCL), 521210253 (HCL), 521210254 (HCL) (3)	OW-09	S: 12/15/2005 15:35	MA1Z94	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1Z80	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key: OLC03.2 V = OLC03.2 VOCs	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

TR Number: 1-502446878-121505-0006

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION COPY

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0266M

R

Ion:	1
ject Code:	
ount Code:	
RCLIS ID:	MAD051787323
ll ID:	
e Name/State:	Iron Horse Park RAS/MA
oject Leader:	Laurie O'Connor
tion:	Remedial Investigation
mpling Co:	Metcalf & Eddy, Inc.

Date Shipped:	12/15/2005
Carrier Name:	FedEx
Airbill:	850742884360
Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	12/15/05 0830		
2			
3			
4			

Sampler Signature:

RGANIC AMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
Z96	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210264 (HCL), 521210265 (HCL), 521210266 (HCL) (3)	OW-12	S: 12/15/2005 15:40	MA1Z96	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MA1Z80	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: OLC03.2 V = OLC03.2 VOAs	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 150244678-121505-0006

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: ~~0268M~~

R

Region:	1	**Date Shipped:**	12/15/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884360	1 [signature] 12/15/05 1850	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z95	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210258 (HCL), 521210259 (HCL), 521210260 (HCL) (3)	OW-10	S: 12/15/2005 16:10	MA1Z95	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
OLC03.2 V = OLC03.2 VOCs			

TR Number: 1-502446878-121505-0008

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION COPY

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: ~~0266M~~ (DU)

R

Region:	1	**Date Shipped:**	12/15/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884279
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	12/15/05 1530		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z94	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210489 (Ice Only), 521210490 (Ice Only) (2)	OW-09	S: 12/15/2005 15:35	MA1Z94	–
A1Z96	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210493 (Ice Only), 521210494 (Ice Only) (2)	OW-12	S: 12/15/2005 15:40	MA1Z96	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121505-0009

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: .0266M (PR)

R

Region:	1	**Date Shipped:**	12/15/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884290
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Sampler Signature:

	Relinquished By (Date / Time)	Received By (Date / Time)
1	12/15/05 1830	
2		
3		
4		

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z74	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210413 (Ice Only), 521210414 (Ice Only) (2)	MW-01A	S: 12/15/2005 14:50	MA1Z74	--
A1Z75	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210415 (Ice Only), 521210416 (Ice Only) (2)	MW-01B	S: 12/14/2005 16:00	MA1Z75	--
A1Z83	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210433 (Ice Only), 521210434 (Ice Only) (2)	MW-204S	S: 12/15/2005 14:38	MA1Z83	--
A1Z94	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	521210250 (Ice Only), 521210251 (Ice Only) (2)	OW-09	S: 12/15/2005 15:35	MA1Z94	--
A1Z95	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210491 (Ice Only), 521210492 (Ice Only) (2)	OW-10	S: 12/15/2005 16:10	MA1Z95	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121505-0010

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION COPY

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	**Date Shipped:**	12/16/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742883950	1 12/16/05 1600	
CERCLIS ID:	MAD051787323	**Shipped to:**	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA1Z97	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210577 (HNO3), 521210578 (HNO3) (2)	MW-208S	S: 12/16/2005 13:35	A1Z97	--
MA1Z98	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210542 (HNO3) (1)	MW-208D	S: 12/16/2005 11:20	A1Z98	--
MA1Z99	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210541 (HNO3) (1)	MW-208B	S: 12/16/2005 13:10	A1Z99	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** MA1Z97	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES

TR Number: 1-502446878-121605-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0266M

R

Region:	1	**Date Shipped:**	12/19/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884246	[signature] 12/19/05 18:00	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z88	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210483 (Ice Only), 521210484 (Ice Only) (2)	MW-215B	S: 12/19/2005 16:00	MA1Z88	–
A1Z89	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210219 (Ice Only), 521210220 (Ice Only), 521210481 (Ice Only), 521210482 (Ice Only) (4)	MW-214S	S: 12/19/2005 15:20	MA1Z89	–
A1Z92	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210473 (Ice Only), 521210474 (Ice Only) (2)	MW-213B	S: 12/19/2005 16:00	MA1Z92	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121905-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0266M
R

Region:	1	Date Shipped:	12/19/2005
Project Code:		Carrier Name:	FedEx
Account Code:		Airbill:	850742883971
CERCLIS ID:	MAD051787323	Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
[signature]	12/19/05		
2			
3			
4			

Sampler Signature:

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA1Z50	PE Water/ Elizabeth DeCola	L/G	ILMO5.3MS (21)	521210391 (Ice Only) (1)	PE-MS02174	S: 12/19/2005 15:00		PE
MA1Z51	PE Water/ Elizabeth DeCola	L/G	ILM05.3AES (21)	521210392 (Ice Only) (1)	PE-IS3038	S: 12/19/2005 15:00		PE
MA1Z52	PE Water/ Elizabeth DeCola	L/G	ILM05.3 Hg (21)	521210393 (Ice Only) (1)	PE-HG3923	S: 12/19/2005 15:00		PE
MA1Z88	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210556 (HNO3) (1)	MW-215B	S: 12/19/2005 16:00	A1Z88	–
MA1Z89	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210571 (HNO3) (1)	MW-214S	S: 12/19/2005 15:20	A1Z89	–
MA1Z90	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210553 (HNO3) (1)	MW-213S	S: 12/19/2005 15:00	A1Z90	FD 2
MA1Z91	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210554 (HNO3) (1)	MW-213S-CS	S: 12/19/2005 14:30	A1Z91	FD 2
MA1Z92	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210551 (HNO3) (1)	MW-213B	S: 12/19/2005 16:00	A1Z92	–
MA1Z93	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210552 (HNO3) (1)	MW-213D	S: 12/19/2005 16:15	A1Z93	–

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES, ILM05.3 Hg = ILM05.3 Hg (Mod. 1329.0), ILM05.3AES = ILM05.3 ICP AES, ILMO5.3MS = ILM05.3 MS (Mod. No. 1329.0)

TR Number: 1-502446878-121905-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

REGION COPY

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1
Project Code:	
Account Code:	
CERCLIS ID:	MAD051787323
Spill ID:	
Site Name/State:	Iron Horse Park RAS/MA
Project Leader:	Laurie O'Connor
Action:	Remedial Investigation
Sampling Co:	Metcalf & Eddy, Inc.

Date Shipped:	12/19/2005
Carrier Name:	FedEx
Airbill:	850742884496
Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	12/19/05 8:25		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z47	PE Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210388 (Ice Only) (1)	PE-V04718	S: 12/19/2005 15:00		PE
A1Z48	PE Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210399 (Ice Only) (1)	PE-S03864	S: 12/19/2005 15:00		PE
A1Z49	PE Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	521210390 (Ice Only) (1)	PE-PQ490	S: 12/19/2005 15:00		PE
A1Z62	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210037 (HCL), 521210038 (HCL), 521210039 (HCL) (3)	TB-05	S: 12/19/2005 15:00		Trip Blank
A1Z88	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210208 (HCL), 521210209 (HCL), 521210210 (HCL) (3)	MW-215B	S: 12/19/2005 16:00	MA1Z88	--
A1Z89	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210214 (HCL), 521210215 (HCL), 521210216 (HCL) (3)	MW-214S	S: 12/19/2005 15:20	MA1Z89	--
A1Z90	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 V (21)	521210222 (Ice Only), 521210223 (Ice Only), 521210224 (Ice Only), 521210225 (Ice Only), 521210226 (Ice Only) (5)	MW-213S	S: 12/19/2005 15:00	MA1Z90	FD 2
A1Z91	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210232 (Ice Only), 521210233 (Ice Only), 521210234 (Ice Only) (3)	MW-213S-CS	S: 12/19/2005 14:30	MA1Z91	FD 2
A1Z92	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210238 (HCL), 521210239 (HCL), 521210240 (HCL) (3)	MW-213B	S: 12/19/2005 16:00	MA1Z92	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-121905-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	**Date Shipped:**	12/19/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884496	1 12/19/05	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z93	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210244 (HCL), 521210245 (HCL), 521210246 (HCL) (3)	MW-213D	S: 12/19/2005 16:15	MA1Z93	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-121905-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1
Project Code:	
Account Code:	
CERCLIS ID:	MAD051787323
Spill ID:	
Site Name/State:	Iron Horse Park RAS/MA
Project Leader:	Laurie O'Connor
Action:	Remedial Investigation
Sampling Co:	Metcalf & Eddy, Inc.

Date Shipped:	12/19/2005
Carrier Name:	FedEx
Airbill:	850742884908
Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
[signature]	12/19/05 18:45		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z90	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210477 (Ice Only), 521210478 (Ice Only) (2)	MW-213S	S: 12/19/2005 15:00	MA1Z90	FD 2
A1Z91	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210230 (Ice Only), 521210231 (Ice Only), 521210479 (Ice Only), 521210480 (Ice Only) (4)	MW-213S-CS	S: 12/19/2005 14:30	MA1Z91	FD 2
A1Z93	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210475 (Ice Only), 521210476 (Ice Only) (2)	MW-213D	S: 12/19/2005 16:15	MA1Z93	–

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-121905-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: 0266M R
Client No:

Region:	1	**Date Shipped:**	12/19/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884224
CERCLIS ID:		**Shipped to:**	Columbia Analytical Services Kelso 1317 South 13th Ave Kelso WA 98626 (366) 577-7222
Spill ID:			
Site Name/State:	Iron Horse Park DAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Sampler Signature:

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	12/19/05 19:00		
2			
3			
4			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06753	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-213B	S: 12/19/2005 16:00	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key: D-122.1 = D-122.1 (1,4-dioxane)	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TR Number: 1-502446878-121905-0005

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	Date Shipped:	12/20/2005	Chain of Custody Record	Sampler Signature:
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:		Airbill:	850742884419	1 [signature] 12/20/05 7:10	
CERCLIS ID:	MAD051787323	Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA3	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210485 (Ice Only), 521210486 (Ice Only) (2)	OW-01	S: 12/20/2005 12:30	MA1ZA3	--
A1ZA4	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210487 (Ice Only), 521210488 (Ice Only) (2)	OW-02	S: 12/20/2005 13:05	MA1ZA4	--
A1ZA6	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210469 (Ice Only), 521210470 (Ice Only) (2)	MW-212D	S: 12/20/2005 13:40	MA1ZA6	FD 3
A1ZA7	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210471 (Ice Only), 521210472 (Ice Only) (2)	MW-212D-CS	S: 12/20/2005 14:40	MA1ZA7	FD 3

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-122005-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	**Date Shipped:**	12/20/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884235; 850742884441	1	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA8	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210459 (Ice Only), 521210460 (Ice Only), 521210461 (Ice Only), 521210462 (Ice Only), 521210463 (Ice Only), 521210464 (Ice Only), 521210465 (Ice Only), 521210466 (Ice Only), 521210467 (Ice Only), 521210468 (Ice Only) (10)	MW-212B	S: 12/20/2005 15:55	MA1ZA8	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1ZA8	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)			

TR Number: 1-502446878-122005-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	Date Shipped:	12/20/2005	Chain of Custody Record	Sampler Signature:
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:		Airbill:	850742883982	1	
CERCLIS ID:	MAD051787323	Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MA1Z65	Field QC/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210576 (HNO3) (1)	EB-02	S: 12/20/2005	9:00	A1Z65	Equipment Blank
MA1ZA2	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210547 (HNO3) (1)	MW-211S	S: 12/20/2005	15:20	A1ZA2	--
MA1ZA3	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210557 (HNO3) (1)	OW-01	S: 12/20/2005	12:30	A1ZA3	--
MA1ZA4	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210558 (HNO3) (1)	OW-02	S: 12/20/2005	13:05	A1ZA4	--
MA1ZA5	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210545 (HNO3) (1)	MW-210S	S: 12/20/2005	16:10	A1ZA5	--
MA1ZA6	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210549 (HNO3) (1)	MW-212D	S: 12/20/2005	13:40	A1ZA6	FD 3
MA1ZA7	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210550 (HNO3) (1)	MW-212D-CS	S: 12/20/2005	14:40	A1ZA7	FD 3
MA1ZA8	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210574 (HNO3), 521210575 (HNO3) (2)	MW-212B	S: 12/20/2005	15:55	A1ZA8	--
MA1ZA9	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210546 (HNO3) (1)	MW-211D	S: 12/20/2005	14:45	A1ZA9	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MA1ZA8		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES

TR Number: 1-502446878-122005-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0266M

R

Region:	1	**Date Shipped:**	12/20/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884420
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	12/20/05 18:40		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA2	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210318 (Ice Only), 521210319 (Ice Only), 521210457 (Ice Only), 521210458 (Ice Only) (4)	MW-211S	S: 12/20/2005 15:20	MA1ZA2	--
A1ZA5	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210453 (Ice Only), 521210454 (Ice Only) (2)	MW-210S	S: 12/20/2005 16:10	MA1ZA5	--
A1ZA9	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210455 (Ice Only), 521210456 (Ice Only) (2)	MW-211D	S: 12/20/2005 14:45	MA1ZA9	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-122005-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958 **R**
DAS No: 0266M

Region:	1	**Date Shipped:**	12/20/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884430
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A1Z63	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210040 (HCL), 521210041 (HCL), 521210042 (HCL) (3)	TB-06	S: 12/20/2005	16:00		Trip Blank
A1Z65	Field QC/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	521210009 (Ice Only), 521210010 (Ice Only), 521210011 (HCL), 521210012 (HCL), 521210013 (HCL), 521210407 (Ice Only), 521210408 (Ice Only) (7)	EB-02	S: 12/20/2005	9:00	MA1Z65	Equipment Blank
A1ZA2	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210320 (HCL), 521210321 (HCL), 521210322 (HCL) (3)	MW-211S	S: 12/20/2005	15:20	MA1ZA2	–
A1ZA3	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210326 (HCL), 521210327 (HCL), 521210328 (HCL) (3)	OW-01	S: 12/20/2005	12:30	MA1ZA3	–
A1ZA4	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210332 (HCL), 521210333 (HCL), 521210334 (HCL) (3)	OW-02	S: 12/20/2005	13:05	MA1ZA4	–
A1ZA5	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210338 (HCL), 521210339 (HCL), 521210340 (HCL) (3)	MW-210S	S: 12/20/2005	16:10	MA1ZA5	–
A1ZA6	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210344 (HCL), 521210345 (HCL), 521210346 (HCL) (3)	MW-212D	S: 12/20/2005	13:40	MA1ZA6	FD 3
A1ZA7	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210350 (HCL), 521210351 (HCL), 521210352 (HCL) (3)	MW-212D-CS	S: 12/20/2005	14:40	MA1ZA7	FD 3

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1ZA8	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-122005-0005

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	Date Shipped:	12/20/2005
Project Code:		Carrier Name:	FedEx
Account Code:		Airbill:	850742884430
CERCLIS ID:	MAD051787323	Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA8	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210356 (HCL), 521210357 (HCL), 521210358 (HCL), 521210359 (HCL), 521210360 (HCL), 521210361 (HCL), 521210362 (HCL), 521210363 (HCL), 521210364 (HCL) (9)	MW-212B	S: 12/20/2005 15:55	MA1ZA8	_
A1ZA9	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210377 (HCL), 521210378 (HCL), 521210379 (HCL) (3)	MW-211D	S: 12/20/2005 14:45	MA1ZA9	_

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: A1ZA8	Additional Sampler Signature(s):
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G

Chain of Custody Seal Number:

Shipment Iced? _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-122005-0005

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION COPY

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4802

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: 0266M
Client No:
R

Region: 1	**Date Shipped:** 12/21/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	**Carrier Name:** FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:	**Airbill:** 850742884213	[signature] 12/21/05 1335	
CERCLIS ID:	**Shipped to:** Columbia Analytical Services Kelso, 1317 South 13th Ave, Kelso WA 98626, (366) 577-7222	2	
Spill ID:		3	
Site Name/State: Iron Horse Park DAS/MA		4	
Project Leader: Laurie O'Connor			
Action: Remedial Investigation			
Sampling Co: Metcalf & Eddy, Inc.			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06751	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	OW-38	S: 12/21/2005 12:00	–

Shipment for Case Complete? Y	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key: D-122.1 = D-122.1 (1,4-dioxane)	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TR Number: 1-502446878-122105-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	**Date Shipped:**	12/21/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884463;850742884452	1 12/21/05 1506	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA0	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210495 (Ice Only), 521210496 (Ice Only), 521210497 (Ice Only), 521210498 (Ice Only), 521210499 (Ice Only), 521210500 (Ice Only), 521210501 (Ice Only), 521210502 (Ice Only), 521210503 (Ice Only), 521210504 (Ice Only) (10)	OW-20	S: 12/21/2005 12:15	MA1ZA0	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1ZA0	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)			

TR Number: 1-502446878-122105-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	Date Shipped:	12/21/2005	Chain of Custody Record	Sampler Signature:
Project Code:		Carrier Name:	FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:		Airbill:	850742884474	1 12/21/05 15:30	
CERCLIS ID:	MAD051787323	Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA0	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	521210308 (Ice Only), 521210309 (Ice Only), 521210310 (Ice Only), 521210311 (Ice Only), 521210312 (Ice Only), 521210313 (Ice Only) (6)	OW-20	S: 12/21/2005 12:15	MA1ZA0	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: A1ZA0	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0)			

TR Number: 1-502446878-122105-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	**Date Shipped:**	12/21/2005	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	850742884305		
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700		
Spill ID:					
Site Name/State:	Iron Horse Park RAS/MA				
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1				
2				
3				
4				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A1Z82	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210513 (Ice Only), 521210514 (Ice Only) (2)	OW-38	S: 12/21/2005	12:00	MA1Z82	--
A1Z87	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21)	521210200 (Ice Only), 521210201 (Ice Only), 521210509 (Ice Only), 521210510 (Ice Only) (4)	OW-35	S: 12/21/2005	13:20	MA1Z87	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.0), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-122105-0005

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 34958
DAS No: 0266M
R

Region:	1	**Date Shipped:**	12/21/2005
Project Code:		**Carrier Name:**	FedEx
Account Code:	,	**Airbill:**	850742884485
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By (Date / Time)	Received By (Date / Time)
1	
2	
3	
4	

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z53	PE Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210394 (Ice Only) (1)	PE-V04833	S: 12/21/2005 11:30		PE
A1Z54	PE Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210401 (Ice Only) (1)	PE-S04174	S: 12/21/2005 11:30		PE
A1Z66	Field QC/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	521210019 (HCL), 521210020 (HCL), 521210021 (HCL), 521210409 (Ice Only), 521210410 (Ice Only) (5)	EB-03	S: 12/21/2005 8:30	MA1Z66	Equipment Blank
A1Z81	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210162 (HCL), 521210163 (HCL), 521210164 (HCL) (3)	OW-37	S: 12/21/2005 14:00	MA1Z81	–
A1Z82	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210168 (HCL), 521210169 (HCL), 521210170 (HCL) (3)	OW-38	S: 12/21/2005 12:00	MA1Z82	–
A1Z87	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210202 (HCL), 521210203 (HCL), 521210204 (HCL) (3)	OW-35	S: 12/21/2005 13:20	MA1Z87	–
A1ZA0	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210289 (HCL), 521210290 (HCL), 521210291 (HCL), 521210292 (HCL), 521210293 (HCL), 521210294 (HCL), 521210295 (HCL), 521210296 (HCL), 521210297 (HCL) (9)	OW-20	S: 12/21/2005 12:15	MA1ZA0	–

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A1ZA0	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-122105-0006

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1	Date Shipped:	12/21/2005
Project Code:		Carrier Name:	FedEx
Account Code:		Airbill:	850742884485
CERCLIS ID:	MAD051787323	Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
[signature]	1605 12/21/05		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1ZA1	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210314 (HCL), 521210315 (HCL), 521210316 (HCL) (3)	MW-209B	S: 12/21/2005 14:45	MA1ZA1	–
A1ZB0	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	521210579 (HCL), 521210580 (HCL), 521210581 (HCL) (3)	TB-07	S: 12/21/2005 9:00		Trip Blank

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: A1ZA0	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-122105-0006

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1
Project Code:	
Account Code:	
CERCLIS ID:	MAD051787323
Spill ID:	
Site Name/State:	Iron Horse Park RAS/MA
Project Leader:	Laurie O'Connor
Action:	Remedial Investigation
Sampling Co:	Metcalf & Eddy, Inc.

Date Shipped:	12/21/2005
Carrier Name:	FedEx
Airbill:	850742883993
Shipped to:	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100

Chain of Custody Record

	Relinquished By (Date / Time)	Received By (Date / Time)
1	[signature] 12/21/05 6:20	
2		
3		
4		

Sampler Signature:

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MA1Z55	PE Water/ Elizabeth DeCola	L/G	ILMO5.3MS (21)	521210396 (Ice Only) (1)	PE-MS02177	S: 12/21/2005	11:30		PE
MA1Z56	PE Water/ Elizabeth DeCola	M/G	ILM05.3AES (21)	521210397 (Ice Only) (1)	PE-IS0721	S: 12/21/2005	11:30		PE
MA1Z57	PE Water/ Elizabeth DeCola	L/G	ILM05.3 Hg (21)	521210398 (Ice Only) (1)	PE-HG3925	S: 12/21/2005	11:30		PE
MA1Z66	Field QC/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210526 (HNO3) (1)	EB-03	S: 12/21/2005	8:30	A1Z66	Equipment Blank
MA1Z75	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210529 (HNO3) (1)	MW-01B	S: 12/14/2005	16:00	A1Z75	–
MA1Z81	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210566 (HNO3) (1)	OW-37	S: 12/21/2005	14:00	A1Z81	–
MA1Z82	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210567 (HNO3) (1)	OW-38	S: 12/21/2005	12:00	A1Z82	–
MA1Z87	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210565 (HNO3) (1)	OW-35	S: 12/21/2005	13:20	A1Z87	–
MA1ZA0	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210562 (HNO3) (1)	OW-20	S: 12/21/2005	12:15	A1ZA0	–
MA1ZA1	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	521210544 (HNO3) (1)	MW-209B	S: 12/21/2005	14:45	A1ZA1	–

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES, ILM05.3 Hg = ILM05.3 Hg (Mod. 1329.0), ILM05.3AES = ILM05.3 ICP AES, ILM05.3MS = ILM05.3 MS (Mod. No. 1329.0)

TR Number: 1-502446878-122105-0007

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No:	34958
DAS No:	0266M

R

Region:	1
Project Code:	
Account Code:	
CERCLIS ID:	MAD051787323
Spill ID:	
Site Name/State:	Iron Horse Park RAS/MA
Project Leader:	Laurie O'Connor
Action:	Remedial Investigation
Sampling Co:	Metcalf & Eddy, Inc.

Date Shipped:	12/21/2005
Carrier Name:	FedEx
Airbill:	850742884316
Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
[illegible]	12/21/05 16:30		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A1Z81	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210511 (Ice Only), 521210512 (Ice Only) (2)	OW-37	S: 12/21/2005 14:00	MA1Z81	–
A1ZA1	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	521210451 (Ice Only), 521210452 (Ice Only) (2)	MW-209B	S: 12/21/2005 14:45	MA1ZA1	–

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.0)

TR Number: 1-502446878-122105-0008

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/20/2006
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884338; 4349
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	2/20/06 12:00		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A24W0	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290030 (HCL), 611290031 (HCL), 611290032 (HCL), 611290033 (Ice Only), 611290034 (Ice Only) (5)	MW-302S	S: 2/20/2006	15:00	MA24W0	--
A24W1	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290036 (HCL), 611290037 (HCL), 611290038 (HCL), 611290039 (Ice Only), 611290040 (Ice Only) (5)	MW-303S	S: 2/20/2006	14:30	MA24W1	--
A24W2	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290043 (HCL), 611290044 (HCL), 611290045 (HCL), 611290046 (Ice Only), 611290047 (Ice Only), 611290048 (Ice Only), 611290049 (Ice Only) (7)	MW-202S	S: 2/20/2006	14:00	MA24W2	--
A24W3	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290051 (HCL), 611290052 (HCL), 611290053 (HCL), 611290054 (Ice Only), 611290055 (Ice Only) (5)	MW-202B	S: 2/20/2006	15:30	MA24W3	--
A24W4	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290057 (HCL), 611290058 (HCL), 611290059 (HCL), 611290060 (Ice Only), 611290061 (Ice Only) (5)	MW-202D	S: 2/20/2006	11:40	MA24W4	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022006-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/20/2006
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884338
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	2/20/06 9:30		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A24T4	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	611290007 (HCL), 611290008 (HCL), 611290009 (HCL) (3)	TB-01	S: 2/20/2006 15:30		Trip Blank

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key: OLC03.2 V = OLC03.2 VOCs	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

TR Number: 1-502446878-022106-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:

R

Region: 1	**Date Shipped:** 2/21/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	**Carrier Name:** FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:	**Airbill:** 843519192982;2993;3007;303(	1 2/21/06 12:10	
CERCLIS ID: MAD051787323	**Shipped to:** Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:		3	
Site Name/State: Iron Horse Park RAS/MA		4	
Project Leader: Laurie O'Connor			
Action: Remedial Investigation			
Sampling Co: Metcalf & Eddy, Inc.			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A24S8	PE Water/ Elizabeth DeCola	L/G	OLC03.2 V (21)	611290001 (Ice Only) (1)	PE-V04744	S: 2/21/2006	16:00		PE
A24S9	PE Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21)	611290002 (Ice Only) (1)	PE-S04738	S: 2/21/2006	16:00		PE
A24T0	PE Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21)	611290003 (Ice Only) (1)	PE-PR671	S: 2/21/2006	16:00		PE
A24T5	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	611290010 (HCL), 611290011 (HCL), 611290012 (HCL) (3)	TB-02	S: 2/21/2006	15:30		Trip Blank
A24W5	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290063 (HCL), 611290064 (HCL), 611290065 (HCL), 611290066 (Ice Only), 611290067 (Ice Only), 611290068 (Ice Only), 611290069 (Ice Only) (7)	MW-304S	S: 2/21/2006	11:40	MA24W5	--
A24W6	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290071 (HCL), 611290072 (HCL), 611290073 (HCL), 611290074 (Ice Only), 611290075 (Ice Only), 611290076 (Ice Only), 611290077 (Ice Only) (7)	MW-304D	S: 2/21/2006	12:45	MA24W6	FD 1

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A24X1	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022106-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/21/2006
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	843519192982;2993;3007;303(
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By (Date / Time)	Received By (Date / Time)
[signature] 2/21/06 17:40	
2	
3	
4	

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A24W7	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290079 (HCL), 611290080 (HCL), 611290081 (HCL), 611290082 (Ice Only), 611290083 (Ice Only), 611290084 (Ice Only), 611290085 (Ice Only) (7)	MW-304D-CS	S: 2/21/2006	13:45	MA24W7	FD 1
A24W8	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290087 (HCL), 611290088 (HCL), 611290089 (HCL), 611290090 (Ice Only), 611290091 (Ice Only), 611290092 (Ice Only), 611290093 (Ice Only) (7)	MW-304B	S: 2/21/2006	11:35	MA24W8	--
A24X0	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290103 (HCL), 611290104 (HCL), 611290105 (HCL), 611290106 (Ice Only), 611290107 (Ice Only), 611290108 (Ice Only), 611290109 (Ice Only) (7)	MW-305S	S: 2/21/2006	15:15	MA24X0	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A24X1	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022106-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region: 1	**Date Shipped:** 2/21/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	**Carrier Name:** FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:	**Airbill:** 843519192982;2993;3007;303(	1 [signature] 2/21/06 17:0	
CERCLIS ID: MAD051787323	**Shipped to:** Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:		3	
Site Name/State: Iron Horse Park RAS/MA		4	
Project Leader: Laurie O'Connor			
Action: Remedial Investigation			
Sampling Co: Metcalf & Eddy, Inc.			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A24X1	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290111 (HCL), 611290112 (HCL), 611290113 (HCL), 611290114 (HCL), 611290115 (HCL), 611290116 (HCL), 611290117 (HCL), 611290118 (HCL), 611290119 (HCL), 611290120 (Ice Only), 611290121 (Ice Only), 611290122 (Ice Only), 611290123 (Ice Only), 611290124 (Ice Only), 611290125 (Ice Only), 611290126 (Ice Only), 611290127 (Ice Only), 611290128 (Ice Only), 611290129 (Ice Only), 611290130 (Ice Only), 611290131 (Ice Only), 611290132 (Ice Only), 611290133 (Ice Only), 611290134 (Ice Only), 611290135 (Ice Only) (25)	MW-305D	S: 2/21/2006 12:15	MA24X1	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:** A24X1	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022106-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/22/2006
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884901;4327; 8435191
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1	2/22/06 1610		
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A24T6	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	611290013 (HCL), 611290014 (HCL), 611290015 (HCL) (3)	TB-03	S: 2/22/2006	14:30		Trip Blank
A24W9	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290095 (HCL), 611290096 (HCL), 611290097 (HCL), 611290098 (Ice Only), 611290099 (Ice Only), 611290100 (Ice Only), 611290101 (Ice Only) (7)	MW-308B	S: 2/22/2006	14:15	MA24W9	--
A24X2	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290137 (HCL), 611290138 (HCL), 611290139 (HCL), 611290140 (Ice Only), 611290141 (Ice Only), 611290142 (Ice Only), 611290143 (Ice Only) (7)	OW-07	S: 2/22/2006	11:45	MA24X2	--
A24X3	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290145 (HCL), 611290146 (HCL), 611290147 (HCL), 611290148 (Ice Only), 611290149 (Ice Only), 611290150 (Ice Only), 611290151 (Ice Only) (7)	OW-08	S: 2/22/2006	11:05	MA24X3	--
A24X5	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290159 (HCL), 611290160 (HCL), 611290161 (HCL), 611290162 (Ice Only), 611290163 (Ice Only) (5)	MW-307S	S: 2/22/2006	13:00	MA24X5	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022206-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:

R

Region:	1	**Date Shipped:**	2/22/2006
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	850742884901;4327; 8435191
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
A24X6	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290165 (HCL), 611290166 (HCL), 611290167 (HCL), 611290168 (Ice Only), 611290169 (Ice Only) (5)	MW-307D	S: 2/22/2006	13:00	MA24X6	--
A24X7	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290171 (HCL), 611290172 (HCL), 611290173 (HCL), 611290174 (Ice Only), 611290175 (Ice Only) (5)	MW-307B	S: 2/22/2006	12:15	MA24X7	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022206-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099 **R**
DAS No:

Region:	1	**Date Shipped:**	2/23/2006
Project Code:		**Carrier Name:**	FedEx
Account Code:		**Airbill:**	843519193040;3051
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700
Spill ID:			
Site Name/State:	Iron Horse Park RAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Relinquished By (Date / Time)	Received By (Date / Time)
Elizabeth DeCola 2/23 16:45	
2	
3	
4	

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A24T7	Field QC/ Elizabeth DeCola	L/G	OLC03.2 V (21)	611290016 (HCL), 611290017 (HCL), 611290018 (HCL) (3)	TB-04	S: 2/23/2006 14:00		Trip Blank
A24T9	Field QC/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290022 (HCL), 611290023 (HCL), 611290024 (HCL), 611290025 (Ice Only), 611290026 (Ice Only), 611290027 (Ice Only), 611290028 (Ice Only) (7)	EB-01	S: 2/23/2006 15:30	MA24T9	Equipment Blank
A24X4	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290153 (HCL), 611290154 (HCL), 611290155 (HCL), 611290156 (Ice Only), 611290157 (Ice Only) (5)	MW-306S	S: 2/23/2006 15:35	MA24X4	--
A24X8	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 PP (21), OLC03.2 SV (21), OLC03.2 V (21)	611290177 (HCL), 611290178 (HCL), 611290179 (HCL), 611290180 (Ice Only), 611290181 (Ice Only), 611290182 (Ice Only), 611290183 (Ice Only) (7)	MW-301S	S: 2/23/2006 11:35	MA24X8	--
A24X9	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290185 (HCL), 611290186 (HCL), 611290187 (HCL), 611290188 (Ice Only), 611290189 (Ice Only) (5)	MW-301D	S: 2/23/2006 13:33	MA24X9	--

Shipment for Case Complete? Y	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022306-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Organic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/23/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	843519193040;3051	1 [signature] 2/23 16:45	
CERCLIS ID:	MAD051787323	**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
A24Y0	Ground Water/ Elizabeth DeCola	L/G	OLC03.2 SV (21), OLC03.2 V (21)	611290191 (HCL), 611290192 (HCL), 611290193 (HCL), 611290194 (Ice Only), 611290195 (Ice Only) (5)	MW-301B	S: 2/23/2006 13:40	MA24Y0	--

Shipment for Case Complete? Y	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

OLC03.2 PP = OLC03.2 Pest/PCBs (Mod. No. 1330.1), OLC03.2 SV = OLC03.2 SVOCs (Mod. No. 1330.1), OLC03.2 V = OLC03.2 VOCs

TR Number: 1-502446878-022306-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No: 35099 **R**
DAS No:

Region:	1	**Date Shipped:**	2/20/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884084	1 [signature] 2/20/06	
CERCLIS ID:	MAD051787323	**Shipped to:**	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA24T1	PE Water/ Elizabeth DeCola	L/G	ILMO5.3MS (21)	611290004 (Ice Only) (1)	PE-MS02180	S: 2/20/2006 16:30		PE
MA24T2	PE Water/ Elizabeth DeCola	L/G	ILM05.3AES (21)	611290005 (Ice Only) (1)	PE-IS3035	S: 2/20/2006 16:30		PE
MA24T3	PE Water/ Elizabeth DeCola	L/G	ILM05.3 Hg (21)	611290006 (Ice Only) (1)	PE-HG3927	S: 2/20/2006 16:30		PE
MA24W0	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290035 (HNO3) (1)	MW-302S	S: 2/20/2006 15:00	A24W0	--
MA24W1	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290041 (HNO3), 611290042 (HNO3) (2)	MW-303S	S: 2/20/2006 14:30	A24W1	--
MA24W2	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290050 (HNO3) (1)	MW-202S	S: 2/20/2006 14:00	A24W2	--
MA24W3	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290056 (HNO3) (1)	MW-202B	S: 2/20/2006 15:30	A24W3	--
MA24W4	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290062 (HNO3) (1)	MW-202D	S: 2/20/2006 11:40	A24W4	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MA24W1		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?**

ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES, ILM05.3 Hg = ILM05.3 Hg (Mod. 1329.0), ILM05.3AES = ILM05.3 ICP AES, ILMO5.3MS = ILM05.3 MS (Mod. No. 1329.0)

TR Number: 1-502446878-022006-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/21/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:		**Airbill:**	850742884062	1 [signature] 6/21/06 1635	
CERCLIS ID:	MAD051787323	**Shipped to:**	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MA24W5	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290070 (HNO3) (1)	MW-304S	S: 2/21/2006	11:40	A24W5	--
MA24W6	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290078 (HNO3) (1)	MW-304D	S: 2/21/2006	12:45	A24W6	FD 1
MA24W7	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290086 (HNO3) (1)	MW-304D-CS	S: 2/21/2006	13:45	A24W7	FD 1
MA24W8	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290094 (HNO3) (1)	MW-304B	S: 2/21/2006	11:35	A24W8	--
MA24X0	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290110 (HNO3) (1)	MW-305S	S: 2/21/2006	15:15	A24X0	--
MA24X1	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290136 (HNO3) (1)	MW-305D	S: 2/21/2006	12:15	A24X1	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES			

TR Number: 1-502446878-022106-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No: 35099
DAS No:
R

Region:	1	**Date Shipped:**	2/23/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884051	1 [signature] 2/23/06 16:40	
CERCLIS ID:	MAD051787323	**Shipped to:**	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MA24T9	Field QC/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290029 (HNO3) (1)	EB-01	S: 2/23/2006	15:30	A24T9	Equipment Blank
MA24X4	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290158 (HNO3) (1)	MW-306S	S: 2/23/2006	15:35	A24X4	--
MA24X8	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290184 (HNO3) (1)	MW-301S	S: 2/23/2006	11:35	A24X8	--
MA24X9	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290190 (HNO3) (1)	MW-301D	S: 2/23/2006	13:33	A24X9	--
MA24Y0	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290196 (HNO3) (1)	MW-301B	S: 2/23/2006	13:40	A24Y0	--

Shipment for Case Complete? Y	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES			

TR Number: 1-502446878-022306-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: R
Client No: 0269M

Region:	1	**Date Shipped:**	2/21/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884110	1 2/21/06 16:40	
CERCLIS ID:		**Shipped to:**	Columbia Analytical Services Kelso 1317 South 13th Ave Kelso WA 98626 (366) 577-7222	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park DAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D06832	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-304D	S: 2/21/2006	12:45	FD 1
D06833	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-304D-CS	S: 2/21/2006	13:45	FD 1
D06835	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-305S	S: 2/21/2006	15:15	--
D06836	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (2)	MW-305D	S: 2/21/2006	12:15	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	D06836		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
D-122.1 = D-122.1 (1,4-dioxane)			

TR Number: 1-502446878-022106-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: R
Client No: 0269M

Region: 1	**Date Shipped:** 2/22/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	**Carrier Name:** FedEx	**Relinquished By** (Date / Time)	**Received By** (Date / Time)
Account Code:	**Airbill:** 850742884121	1 [signature] 2/22/06 15:30	
CERCLIS ID:	**Shipped to:** Columbia Analytical Services Kelso	2	
Spill ID:	1317 South 13th Ave	3	
Site Name/State: Iron Horse Park DAS/MA	Kelso WA 98626	4	
Project Leader: Laurie O'Connor	(366) 577-7222		
Action: Remedial Investigation			
Sampling Co: Metcalf & Eddy, Inc.			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06830	PE Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	PE-DX00619	S: 2/22/2006 14:30	PE
D06834	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-308B	S: 2/22/2006 14:15	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
D-122.1 = D-122.1 (1,4-dioxane)			

TR Number: 1-502446878-022206-0002

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: R
Client No: 0269M

Region:	1	**Date Shipped:**	2/23/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	850742884143	1 [signature] 2/23/06 16:30	
CERCLIS ID:		**Shipped to:**	Columbia Analytical Services Kelso 1317 South 13th Ave Kelso WA 98626 (366) 577-7222	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park DAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06831	Field QC/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	EB-01	S: 2/23/2006 15:30	Equipment Blank
D06837	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-301S	S: 2/23/2006 11:35	--
D06838	Ground Water/ Elizabeth DeCola	L/G	D-122.1 (35)	(Ice Only) (1)	MW-301D	S: 2/23/2006 13:33	--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
D-122.1 = D-122.1 (1,4-dioxane)			

TR Number: 1-502446878-022306-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: R
Client No: 0269M

Region:	1	**Date Shipped:**	2/22/2006
Project Code:		**Carrier Name:**	Courier
Account Code:		**Airbill:**	
CERCLIS ID:		**Shipped to:**	Alpha Woods Hole Laboratory 375 Paramount Drive, Suite B Raynham MA 02767 (508) 822-9300
Spill ID:			
Site Name/State:	Iron Horse Park DAS/MA		
Project Leader:	Laurie O'Connor		
Action:	Remedial Investigation		
Sampling Co:	Metcalf & Eddy, Inc.		

Chain of Custody Record

Sampler Signature:

Relinquished By	(Date / Time)	Received By	(Date / Time)
1 [signature]	2/22/06 15:30	Ed Butler	2-22-06 3:38
2			
3			
4			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D06839	Ground Water/ Elizabeth DeCola	L/G	GC Fing. ((35)	(Ice Only) (1)	PZ-115	S: 2/21/2006 15:00	--

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: GC Fing. (= GC Fingerprint (D-087)	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-022206-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

EPA Metcalf and Eddy DAS Chain of Custody Form
Inorganic Traffic Report & Chain of Custody Record

Case No: 35099 **R**
DAS No:

Region:	1	**Date Shipped:**	2/22/2006	**Chain of Custody Record**	**Sampler Signature:**
Project Code:		**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	580742884030	1 [signature] 2/22/06 15:45	
CERCLIS ID:	MAD051787323	**Shipped to:**	Liberty Analytical Corporation 501 Madison Avenue Cary NC 27513 (919) 379-4100	2	
Spill ID:				3	
Site Name/State:	Iron Horse Park RAS/MA			4	
Project Leader:	Laurie O'Connor				
Action:	Remedial Investigation				
Sampling Co:	Metcalf & Eddy, Inc.				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MA24W9	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290102 (HNO3) (1)	MW-308B	S: 2/22/2006 14:15	A24W9	--
MA24X2	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290144 (HNO3) (1)	OW-07	S: 2/22/2006 11:45	A24X2	--
MA24X3	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290152 (HNO3) (1)	OW-08	S: 2/22/2006 11:05	A24X3	--
MA24X5	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290164 (HNO3) (1)	MW-307S	S: 2/22/2006 13:00	A24X5	--
MA24X6	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290170 (HNO3) (1)	MW-307D	S: 2/22/2006 13:00	A24X6	--
MA24X7	Ground Water/ Elizabeth DeCola	L/G	ILM05.3 (21)	611290176 (HNO3) (1)	MW-307B	S: 2/22/2006 12:15	A24X7	--

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____
ILM05.3 = ILM05.3 MS+HG(Mod.1329.0)& ILM05.3 AES			

TR Number: 1-502446878-022206-0003

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Neri Lissa Velasco, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4124; Fax 703/818-4602

APPENDIX C

Boring Logs and Monitoring Well Construction Diagrams

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-301S

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	February 7, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 7, 2006		

DEPTH (ft.)

14.1 ft.

WELL INFORMATION:

WELL DEPTH	14.1 ft. bgs	SCREEN INTERVAL	4.1 to 14.1 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.5 ft. (2/8/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
0 ft							*Refer to the MW-301B geologic log for stratigraphic descriptions*	FILL
5 ft								5.5' ORGANIC SILTY SAND W/ PEAT
								7.5'
10 ft	S3-1	9'-11'	12-13	1.0	-		Gray brown fine to crs. SAND, trace fine gravel, trace silt; fairly clean, siltier in top 1 to 2"; (SW); (*Organics in wash water*)	SAND
			15-13					
								12.5' TILL w/ COBBLES
15 ft								14.1' EOB @ 14.1 ft.
20 ft								*Refer to Well Installation Log*
25 ft								
30 ft								

trace	0 to 5%		Sample Types
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

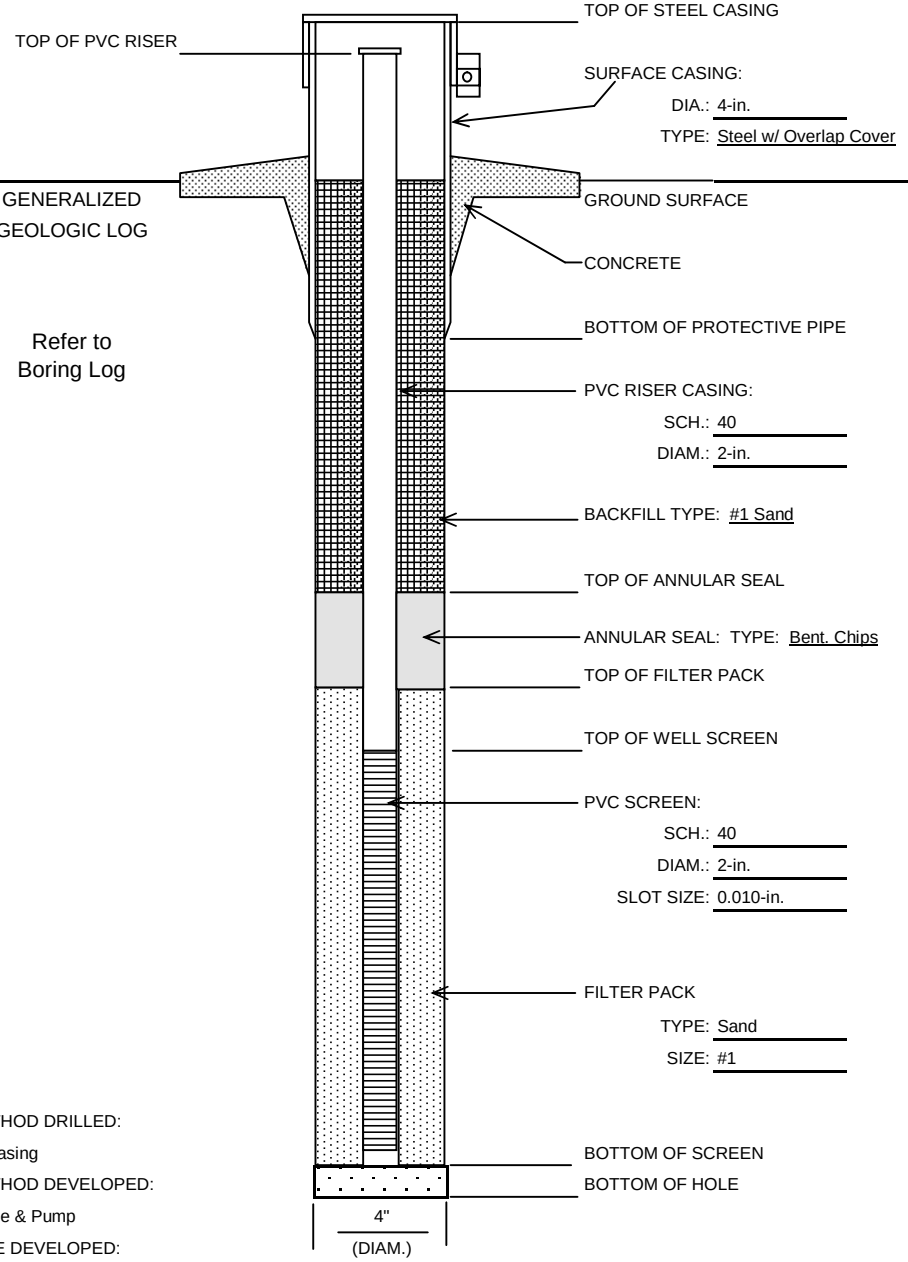
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-301S**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
2/7/2006	K. Harten	
FINISHED:	DRILLER:	
2/7/2006	C. O'Donnell	5.5 ft. bgs (2/8/06)



	DEPTH BGS / HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.70	
TOP OF PVC RISER	2.45	
SURFACE CASING: DIA.: 4-in. TYPE: Steel w/ Overlap Cover		
GROUND SURFACE	0.0	
BOTTOM OF PROTECTIVE PIPE	1.3	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: #1 Sand		
TOP OF ANNULAR SEAL	2.5	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	3	
TOP OF WELL SCREEN	4.1	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	14.1	
BOTTOM OF HOLE	14.1	

METHOD DRILLED:
4" Casing

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
1.75 Hours

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**
701 Edgewater Drive	IRON HORSE PARK
Wakefield, MA 01880	High Street
(617) 246-5200	North Billerica, Massachusetts

BORING/WELL ID

MW-301D

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (ATV)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	February 11, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 11, 2006		

DEPTH (ft.)

44 ft.

WELL INFORMATION:

WELL DEPTH	43 ft. bgs	SCREEN INTERVAL	28 to 43 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.5 ft (2/11/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
0 ft							*Refer to the MW-301B geologic log for stratigraphic descriptions*	FILL
5 ft								5.5' ORGANIC SILTY SAND W/ PEAT
10 ft								7.5' SAND
15 ft								12.5' TILL w/ Cobbles, Occ. Boulders
20 ft								
25 ft								
30 ft							*Occ. Boulder and Few to Some Cobbles encountered in Till*	

trace	0 to 5%		Sample Types
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-301D

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (ATV)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	February 11, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 11, 2006		

DEPTH (ft.)

44 ft.

WELL INFORMATION:

WELL DEPTH:	43 ft. bgs	SCREEN INTERVAL:	28 to 43 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.5 ft (2/11/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
35 ft	SS-1	34'-36'	32-29	0.7	-		Gray fine to crs. GRAVELLY SAND, little silt, trace clay; well graded, Till; (SM/GM)	TILL w/ Cobbles, Occ. Boulders
			16-12				*Some Cobbles*	
40 ft								
45 ft								44' EOB @ 44 ft.
50 ft								*Refer to Well Installation Log*
55 ft								
60 ft								

trace	0 to 5%		Sample Types
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

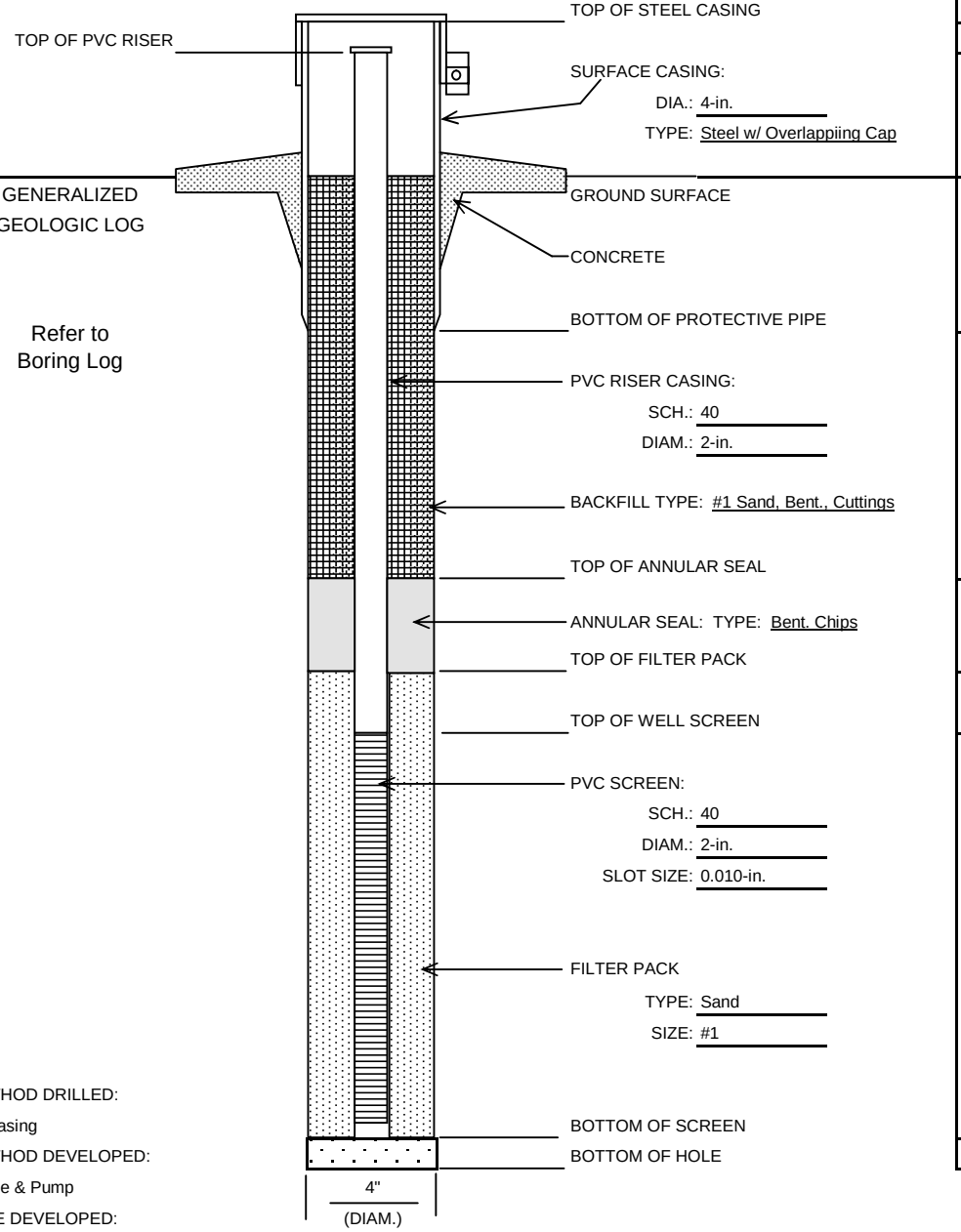
Notes/Comments:
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-301D**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
2/11/2006	K. Harten	
FINISHED:	DRILLER:	
2/11/2006	C. O'Donnell	1.7 ft. bgs (2/13/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.85	
TOP OF PVC RISER	2.60	
SURFACE CASING: DIA.: 4-in. TYPE: Steel w/ Overlappiing Cap		
GROUND SURFACE	0.0	
CONCRETE		
BOTTOM OF PROTECTIVE PIPE	2.4	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: #1 Sand, Bent., Cuttings		
TOP OF ANNULAR SEAL	23	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	25.5	
TOP OF WELL SCREEN	28	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	43	
BOTTOM OF HOLE	44	

METHOD DRILLED:
4" Casing

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
2.25 Hours

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-301B

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	February 3, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 7, 2006		

DEPTH (ft.)

78 ft.

WELL INFORMATION:

WELL DEPTH	77 ft. bgs	SCREEN INTERVAL	57 to 77 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.8 ft (2/8/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
0 ft	SS-1	0'-2'	1-2	1.5	0		Brown fine to crs. SAND (mostly fine to med.), trace to little silt; Fill	
			2-4					
	SS-2	2'-3.5'	7-8-8	1.3	0.1		Brown FINE SAND, few med. to crs. sand, trace silt; Fill, wood @ 3.5 ft. - spoon bouncing	FILL
5 ft	SS-3	4'-6'	4-2	0.7	0.2	Top 6":	Gray FINE SAND, little silt, little to few fine gravel, few med. to crs. sand; moist; Fill	
			2-3			Bot. 2":	Dk. brown ORGANIC SILTY SAND, few small roots; wet; (OL/Pt)	5.5' ORGANIC SILTY SAND W/ PEAT
							Organics in wash	7.5'
10 ft	SS-4	9'-11'	14-19	1.0	0.9		Gray brown fine to crs. SAND, few fine gravel, trace silt; dense, but not till-like; (SW)	SAND
			27-32					
							12" Boulder/Cobble @ 12.5 ft.	12.5'
15 ft	SS-5	14'-16'	24-34	0.3	0.1		Brown fine to crs. SAND, some fine to crs. gravel, little silt; Till matrix, poor recovery - pushing gravel; (SM)	
			34-30					TILL w/ Cobbles, Occ. Boulders
20 ft	SS-6	19'-21'	21-19	0.8	0.1		Brown fine to crs. SAND, little to some fine to crs. gravel, little silt; Till, bottom tip is gray and more fine; (SM)	*(Changes from gray to brown at ~20 ft.)*
			33-27					
25 ft	SS-7	24'-25.5'	45-88-70	1.3	0.0		Gray fine to crs. SAND, little to few fine to crs. gravel, little silt; well graded; very dense Till; (SM)	
30 ft	SS-8	29'-29'11"	46-100/5"	0.8	0.9		Gray fine to crs. SAND, little to some fine to crs. gravel, little silt; well graded, Till; (SM)	

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-301B

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	February 3, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 7, 2006		

DEPTH (ft.)

78 ft.

WELL INFORMATION:

WELL DEPTH:	77 ft. bgs	SCREEN INTERVAL:	57 to 77 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.8 ft (2/8/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
30 ft								
35 ft	SS-9	34'-35'3"	70-89	0.7	0.1		Gray fine to crs. SAND, little to some fine to crs. gravel, little silt, trace clay; well graded, Till; (SM)	TILL w/ Cobbles, Occ. Boulders
			30/3"					
							Occasional Cobbles	
40 ft	SS-10	39'-39'11"	70-100/5"	0.6	0.0		Gray TILL; as above; (SM)	
45 ft	SS-11	44'-44'11"	38-100/5"	0.0	-		No Recovery; piece of crs. gravel lodged in spoon tip	
							Occasional Cobbles	
50 ft	SS-12	49'-50.5'	25-49-67	1.5	0.0		Gray fine to crs. SAND, some fine to crs. gravel, little to some fines (clayey silt); very dense, well graded, slightly plastic, Till; (SM)	
							Boulder/Cobble at 52' (?), Roller bit drill to 54 ft.	52'
55 ft	SS-13	54'-	50/0"	0.0			Spoon Bouncing *Roller bit to 54.5'*	GRANITE BEDROCK
	R-1	54.5'-59'	4 min (avg.)	3.8	-			
							Gray (weathered to brown), hard, very broken, mod. weathered, med. grained GRANITE, w/ low to high angled fractures, some silt and sand filled joints; RQD = 0%	
60 ft	R-2	59'-63'	3 min.	3.8	-		*See p. 3 for R-2 description*	

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**	**BORING/WELL ID**
701 Edgewater Drive	IRON HORSE PARK	**MW-301B**
Wakefield, MA 01880	High Street	
(617) 246-5200	North Billerica, Massachusetts	

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	February 3, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 7, 2006		

DEPTH (ft.): 78 ft.

WELL INFORMATION:

WELL DEPTH:	77 ft. bgs	SCREEN INTERVAL:	57 to 77 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.): 5.8 ft (2/8/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
60 ft	R-2	59'-63'	5 min.	3.8	-		Gray (weathered to brown), hard, broken to very broken, mod. to slightly weathered. med. grained GRANITE, w/ low to high angled fractures, some silt and sand filled joints; RQD = 31%	GRANITE BEDROCK
	(cont.)		5 min.					
			5 min.					
	R-3	63'-68'	3 min.	5.0	-	Top 3':	Weathered brown, broken, med. to crs. grained GRANITE, w/ low to mod. angle fractures	
65 ft			3 min.					
			3 min.			Bot. 2':	Fresh, crs. grained PEGMATITE, quartz rich w/ some white feldspar (probably microcline), few mica crystals (muscovite), and trace accessory minerals, mod. wide spaced fracturing; RQD = 33%	66'
			3 min.					
			4 min.					QUARTZ PEGMATITE
	R-4	68'-73'	3 min.	5.0	-	→	White, very broken, slightly weathered, quartz PEGMATITE, some white feldspar (prob. microcline), several mica crystals; few silt coated joints; fingers of granite in bottom 2"; RQD = 0%	
70 ft			3 min.					
			4 min.					
			4 min.					
			4 min.					
	R-5	73'-78'	4.5 min.	3.3	-		~12" of white, broken PEGMATITE, as above, grading to a brown, hard, mod. weathered (stained brown and pitted), med. grained GRANITE, w/ low to high angle fractures, and sand filled joints; RQD = 18%	74'
75 ft			(avg.)					GRANITE BEDROCK
								78'
								EOB @ 78 ft.
80 ft								
								Refer to Well Installation Log
85 ft								
90 ft								

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

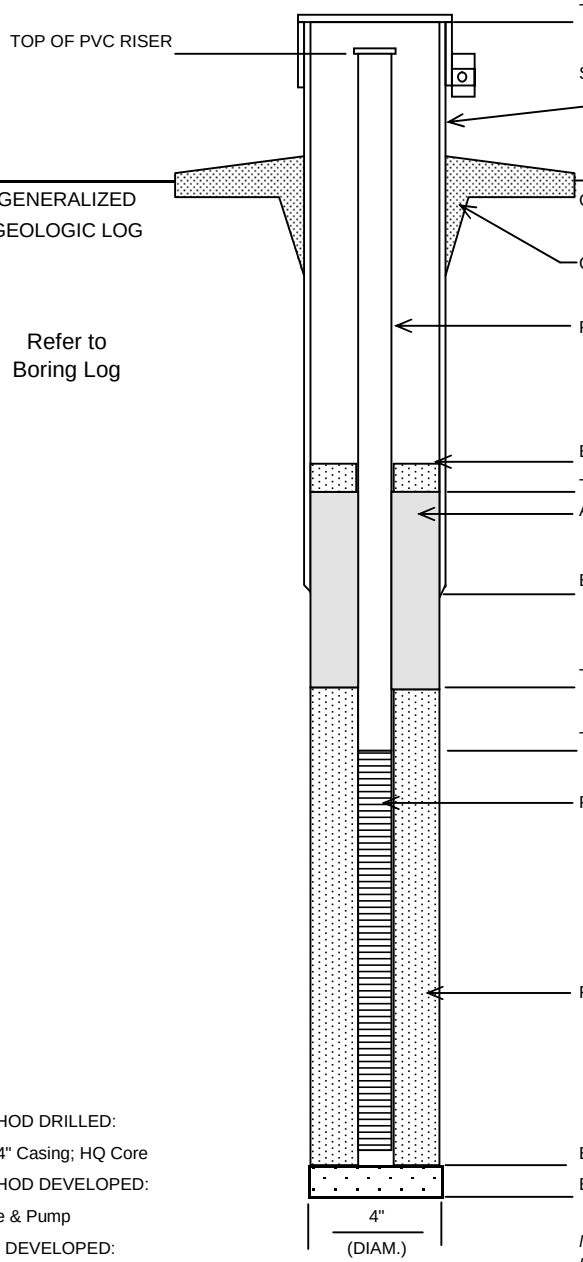
Notes/Comments:
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-301B**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
2/7/2006	K. Harten	
FINISHED:	DRILLER:	
2/7/2006	C. O'Donnell	5.8 ft bgs (2/8/06)



	DEPTH BGS / HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.85	
TOP OF PVC RISER	2.70	
SURFACE CASING: DIA.: 4-in. TYPE: Steel w/ Alum. Cover	0.0	
GROUND SURFACE		
CONCRETE		
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: #1 Sand	47	
TOP OF ANNULAR SEAL	48	
ANNULAR SEAL: TYPE: Bent. Chips		
BOTTOM OF STEEL CASING*	51.5	
BEDROCK	52	
TOP OF FILTER PACK	56	
TOP OF WELL SCREEN	57	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	77	
BOTTOM OF HOLE	78	

METHOD DRILLED:
5" & 4" Casing; HQ Core

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
3.5 hours

*Notes: *Bottom of permanent 4" steel casing @ 51.5 ft.*

M&E

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-302S

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	H.S.A. - 4.25"
DRILLER:	Matt Cochran	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	none
START DATE:	January 16, 2006	SAMPLING METHOD:	2" and 3" Split-Spoons (as noted)
FINISH DATE:	January 16, 2006		

DEPTH (ft.)

12.0 ft. bgs

WELL INFORMATION:

WELL DEPTH	11.2 ft. bgs	SCREEN INTERVAL	1.2 to 11.2 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

2.32 ft. (1/23/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
0 ft	SS-1	0-2	4 / 8	1.3	9	0.0-0.1	TOPSOIL, grass, roots.	
			9 / 9			0.1-1.1	Yellow-brown FINE-MEDIUM SAND, loose, dry.	
	SS-2	2-4	6 / 8	1.1	0	1.1-1.3	Black, FINE-MEDIUM SAND, trace coarse sand and	FILL
			11 / 7				pebble, loose, moist, no odor.	
5 ft	SS-3	4-6	1 / 1	1.7	3	1.3-2.0	Void	
			2 / 7			2.0-2.5	Black COARSE SAND and ANGULAR GRAVEL,	
	SS-4	6-8	11 / 10	1.4	4		loose, wet, no odor or sheen.	
			11 / 11			2.5-2.8	Yellow-brown FINE SAND, some silt, slightly firm, wet.	
	SS-5	8-10	3 / 4	1.0	5	2.8-3.1	Yellow-brown/natural MEDIUM SAND, loose, wet.	
10 ft			6 / 11			3.1-4.0	Void	
	SS-6	10-12	4 / 6	1.5	4	4.0-5.3	Dark brown SILT, some Fine Sand, little-trace medium	
			9 / 7				to coarse sand and gravel, slightly firm, wet.	
						5.3-5.7	Yellow-brown/natural MEDIUM SAND little-trace	12.0'
							coarse sand, trace gravel, loose, wet.	
15 ft						5.7-6.0	Void	EOB @ 12.0 ft.
						6.0-6.3	Brown-grey FINE-MEDIUM SAND, little-trace coarse	
							sand, loose, wet.	*Refer to Well Installation Log*
						6.3-6.9	Orange-brown, FINE-MEDIUM SAND, loose, wet.	
						6.9-7.4	Yellow-brown/natural MEDIUM SAND, little fine sand,	
20 ft							trace angular gravel, loose, wet.	
						7.4-8.0	Void	
						8.0-9.0	Brown-grey, MEDIUM SAND, trace gravel, loose, wet.	
						9.0-10.0	Void	
						10.0-11.5	Yellow-brown/natural, MEDIUM SAND, trace fine sand	
25 ft							and gravel, loose, wet.	
						11.5-12.0	Void	
30 ft								

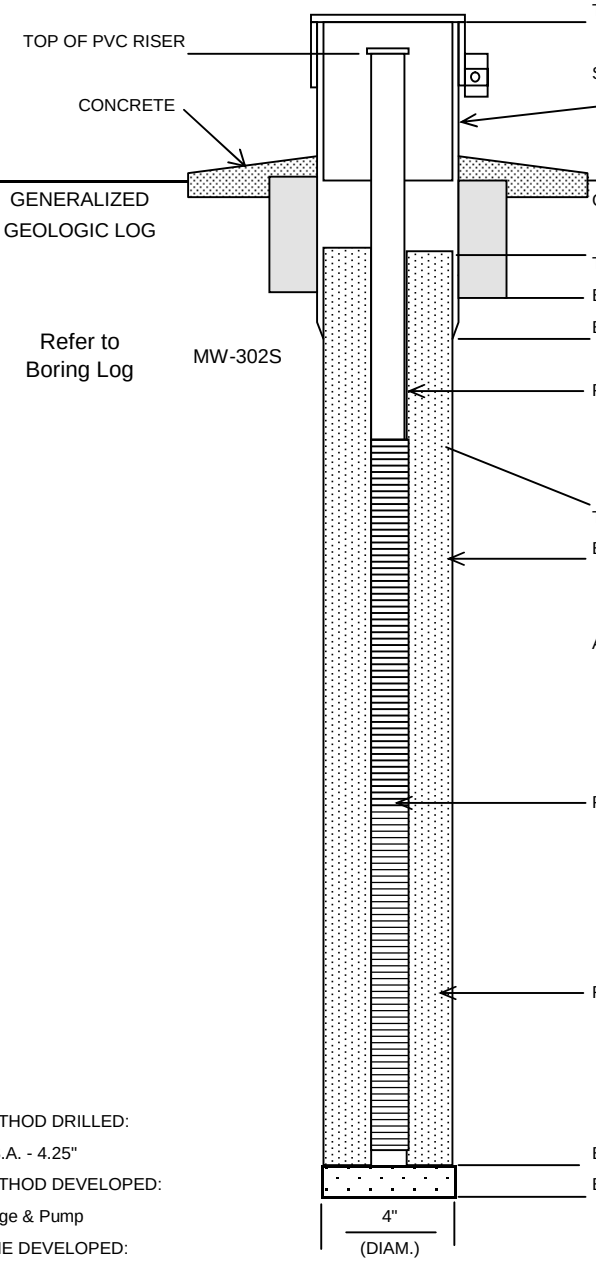
trace	0 to 5%	Sample Types	
few	5 to 10%	SS	2" Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT: **Iron Horse Park - Operable Unit 4**	JOB NO. **36800321.00003**	WELL NO. **MW-302S**
DRILLING CONTRACTOR: Geologic-Earth Ex.	COORDINATES:	
BEGUN: 1/16/2006	GEO/ENG: W. Abrahams-Dematte	WATER LEVEL (Depth/Elev.)
FINISHED: 1/16/2006	DRILLER: Damian	2.32 ft bgs (1/23/06)



	DEPTH BGS / HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.10	
TOP OF PVC RISER	2.02	
SURFACE CASING: DIA.: 4-in. TYPE: Steel		
GROUND SURFACE / TOP ANNULAR SEAL	0.0	
TOP OF FILTER PACK	0.5	
BOTTOM OF ANNULAR SEAL	0.5	
BOTTOM OF PROTECTIVE PIPE	1	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
TOP OF WELL SCREEN	1.2	
BACKFILL TYPE: #1 Sand		
ANNULAR SEAL: TYPE: Bent. Chips (See Above)		
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	11.2	
BOTTOM OF HOLE	11.5	

METHOD DRILLED:
H.S.A. - 4.25"

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
25 minutes - ~75 gallons

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-303S

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	H.S.A. - 4.25"
DRILLER:	Matt Cochran	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	none
START DATE:	January 16, 2006	SAMPLING METHOD:	2" and 3" Split-Spoons (as noted)
FINISH DATE:	January 17, 2006		

DEPTH (ft.)

12 ft. bgs

WELL INFORMATION:

WELL DEPTH	11.3 ft. bgs	SCREEN INTERVAL	1.3 to 11.3 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

2.32 ft. (1/23/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
0 ft	SS-1	0-2.5	- / 9 / 23	1.5	1	0.0-0.5	Asphalt	
			18 / 15			0.5-1.5	Grey-brown FINE SAND, trace medium sand and	FILL
	SS-2	2.5-4.5	11 / 8	1.0	1		gravel, loose, dry.	
			8 / 4			1.5-2.5	Void	3.5'
5 ft	S3-3	4.5-6.5	0.5 / 0.5	1.4	0	2.5-2.8	Black COARSE SAND, trace angular gravel, loose,	Marsh/Organic
			3 / 1				saturated, no odors.	
	S3-4	6.5-8.5	1 / 2	2.0	1	2.8-3.1	Dark brown FINE SAND, slightly firm, wet.	
			5 / 10			3.1-3.5	Green-brown, FINE SAND, some silt, slightly firm, wet	7.1' PEAT
	S3-5	8.5-10	3 / 8	1.5	8	3.5-4.5	Void	8.0'
10 ft			8			4.5-5.9	Brown-black VERY FINE SAND AND SILT, slightly	Fine-Medium Sand
	SS-6	10-12	0 / 2	1.1	25		firm, saturated, no HC odors, trace roots.	
			3 / 4			5.9-6.5	Void	
						6.5-7.1	Same As 4.5 to 5.9 feet. Very slick/organic	12.0'
						7.1-8.0	Brown PEAT	
15 ft						8.0-8.5	Yellow-brown MEDIUM SAND, trace root, moist.	EOB @ 12.0 ft.
						8.5-9.5	Yellow-brown MEDIUM SAND, little fine sand, trace	
							coarse sand, loose, wet.	*Refer to Well Installation Log*
						9.5-10.0	Gray/natural FINE SAND, loose, wet.	
						10.0-11.0	Same As 8.5 to 9.5 feet.	
20 ft						11.0-11.1	Same As 9.5 to 10.0 feet.	
						11.1-12.0	Void	
25 ft								
30 ft								

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	2" Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

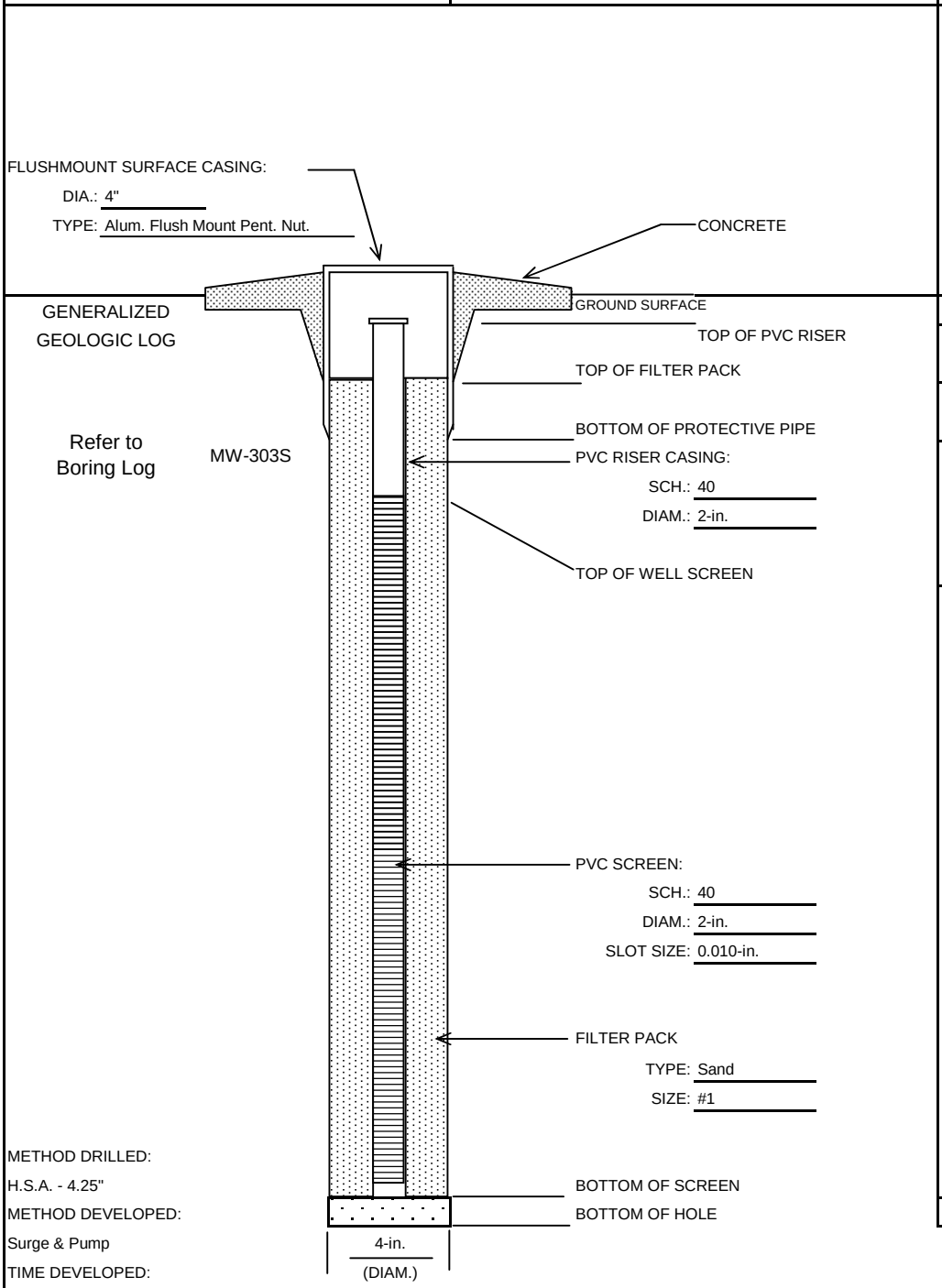
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-303S**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/16/2006	W. Abrahams-Dematte	
FINISHED:	DRILLER:	
1/17/2006	Damian	2.58 ft bgs (1/23/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
	0.0	
GENERALIZED GEOLOGIC LOG	0.24	
	0.5	
Refer to Boring Log MW-303S	1.0	
	1.3	
	11.3	
	12.0	

METHOD DRILLED:
H.S.A. - 4.25"

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
42 minutes - ~168 gallons

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-304S

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	January 16, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 16, 2006		

DEPTH (ft.)

16 ft.

WELL INFORMATION:

WELL DEPTH	12.4 ft. bgs	SCREEN INTERVAL	2.2 to 12.2 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

3.1 ft. (1/17/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
0 ft	SS-1	0'-2'	14-7	1.0	0.3	Top 2":	Black Coal Fragments, Slag, and Cinders	FILL
			7-9			Bot.10":	Brown fine to crs. SAND, tr. silt, tr. fine gravel; damp, Fill	
	SS-2	2'-4'	10-12	0.8	0.0		Brown fine to med. SAND, trace silt; clean, moist to wet; (SP)	2.5'
			4-9					
5 ft	SS-3	4'-6'	7-4	0.7	0.0		Brown fine to crs. SAND, trace fine gravel, trace silt; clean, (SW)	CLEAN SAND
			5-7					
								8'
10 ft	SS-4	9'-11'	18-26	0.5	0.0		Brown fine to crs. GRAVELLY SAND, trace (to little) silt; well graded, (SW)	GRAVELLY SAND W/ OCC. BOULDERS
			18-14					
							(Casing Refusal @ 13.5 ft. - boulder. Roller bit to 16 ft. w/o boulder breakthrough. Bedrock? Install shallow well)	
15 ft								
								16' EOB @ 16 ft.
								Refer to Well Installation Log
20 ft								
25 ft								
30 ft								

trace	0 to 5%		Sample Types
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

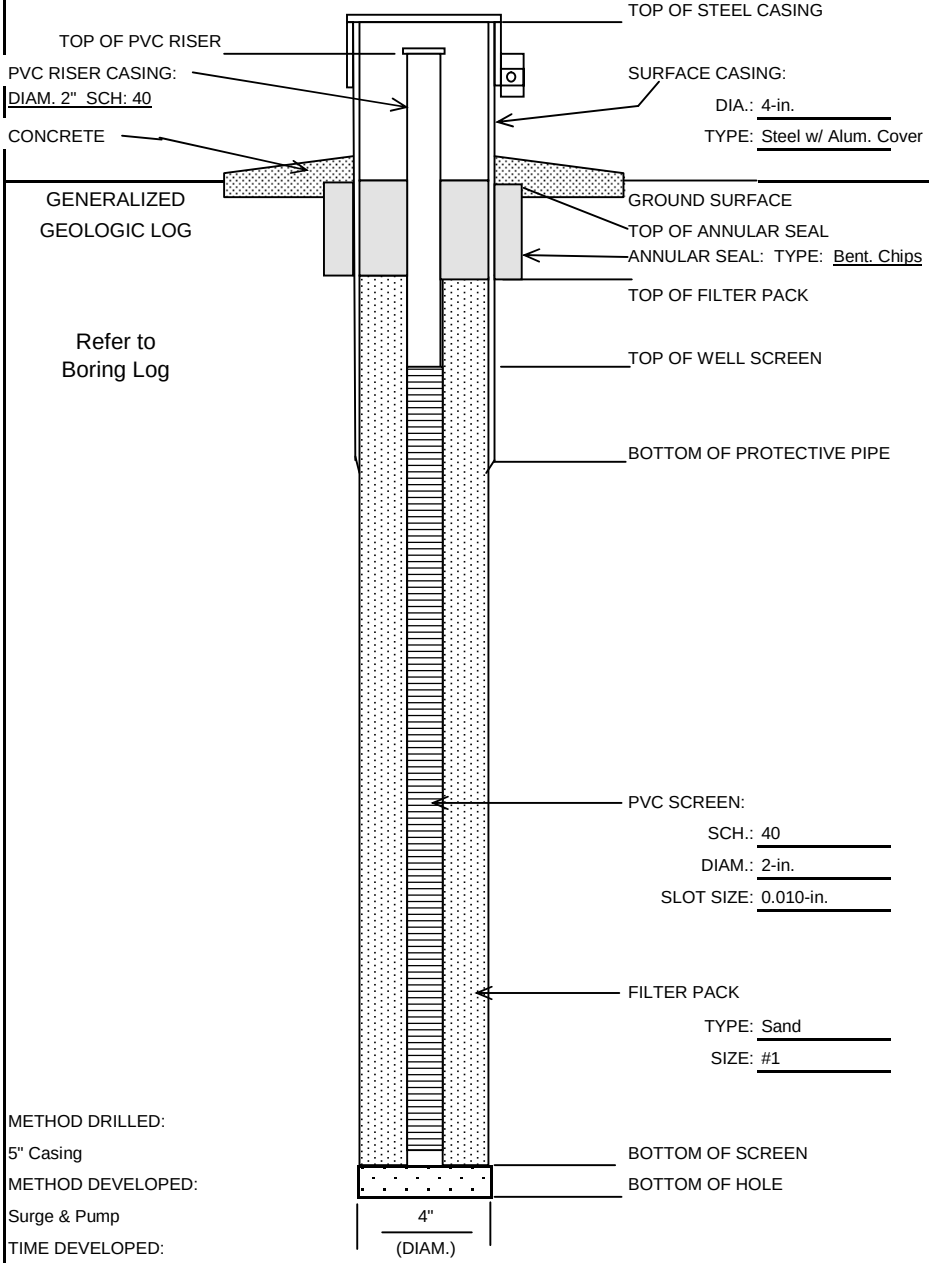
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-304S**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/16/2006	K. Harten	
FINISHED:	DRILLER:	
1/17/2006	C. O'Donnell	3.24 ft. bgs (1/24/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.50	
TOP OF PVC RISER	2.20	
GROUND SURFACE	0.0	
TOP OF ANNULAR SEAL	0	
TOP OF FILTER PACK	1	
TOP OF WELL SCREEN	2.2	
BOTTOM OF PROTECTIVE PIPE	2.7	
BOTTOM OF SCREEN	12.2	
BOTTOM OF HOLE	16	

METHOD DRILLED:
5" Casing
METHOD DEVELOPED:
Surge & Pump
TIME DEVELOPED:
27 minutes, ~95 gallons

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**
701 Edgewater Drive	IRON HORSE PARK
Wakefield, MA 01880	High Street
(617) 246-5200	North Billerica, Massachusetts

BORING/WELL ID

MW-304D

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	January 24, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 24, 2006		

DEPTH (ft.)

26.5 ft.

WELL INFORMATION:

WELL DEPTH	25 ft. bgs	SCREEN INTERVAL	15 to 25 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

3 ft (1/24/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
0 ft								FILL
							Refer to the MW-304S geologic log for stratigraphic descriptions above 14 feet.	2.5'
5 ft								CLEAN SAND
								8'
10 ft								GRAVELLY SAND W/ OCC. BOULDERS
15 ft	SS-1	14'-16'	30-25	0.5	-		Brown fine to crs. SAND, some fine to crs. gravel, trace silt; well graded; (SW)	
			27-42					
20 ft	S3-1	19'-21'	19-13	0.5	0	Top 2":	GRAVELLY SAND, as above; possible wash	
			11-10			Bot. 4":	Lt. brown fine to med. SAND, little silt w/ occ. silt lenses, little fine to crs. gravel, few crs. sand; mod. graded (skip graded), (SM)	20' SILTY SAND W/ GRAVEL
	R-1	22.5'-26.5'	4 min.	3.6	-		Gray, very hard, massive, fresh, med. grained GRANITE, w/ (2) mod. angle closely spaced fractures @ 1.75' from top; RQD = 81%	22' POSS. WX. BEDROCK
			4 min.					
25 ft			4 min.					24' GRANITE BEDROCK
			4 min.					
								26.5' EOB @ 26.5 ft.
30 ft								*Refer to Well Installation Log*

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

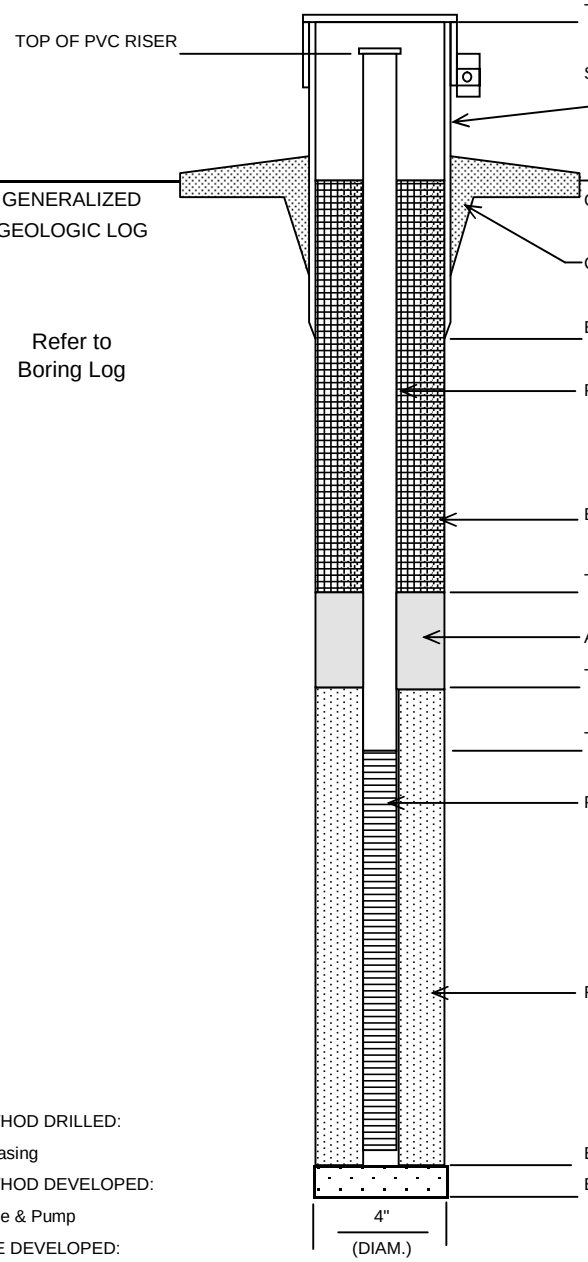
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-304D**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/24/2006	K. Harten	
FINISHED:	DRILLER:	
1/24/2006	C. O'Donnell	1.1 ft. bgs (1/25/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.75	
TOP OF PVC RISER	2.64	
SURFACE CASING: DIA.: 4-in. TYPE: Steel w/ Alum. Overlap Cap		
GROUND SURFACE	0.0	
CONCRETE		
BOTTOM OF PROTECTIVE PIPE	2.45	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Bentonite Chips		
TOP OF ANNULAR SEAL	4	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	13	
TOP OF WELL SCREEN	15	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	25	
BOTTOM OF HOLE	26.5	

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts	**BORING/WELL ID** **MW-304B**

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	January 17, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 23, 2006		

DEPTH (ft.): 49.5 ft.

WELL INFORMATION:

WELL DEPTH	49.4 ft. bgs	SCREEN INTERVAL	29.4 to 49.4 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.): 2.7 ft. (1/25/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
0 ft								FILL
							Refer to the MW-304S geologic log for stratigraphic descriptions above nine feet.	2.5'
5 ft								CLEAN SAND
								8'
10 ft	SS-1	9'-11'	26-17	1.0	0		Brown fine to crs. SAND, some fine to crs. gravel, trace (to little) silt; well graded; (SW)	GRAVELLY SAND W/ OCC. BOULDERS
			13-15					
							Add viscosifier to drill water (Variflo - guar gum)	
15 ft	SS-2	14'-16'	28-28	0.6	0		Brown fine to crs. SANDY GRAVEL, trace silt; well graded; (GW)	
			33-30				*Cobble/Boulder from 16 to 17 ft.*	
20 ft	SS-3	19'-21'	44-9	0.7	0		Brown fine to crs. SAND, little fine to crs. gravel, trace (to little) silt; (SW-SM)	20'
			10-16					SILTY SAND W/ GRAVEL
							Unable to drive casing below 22 ft.	22'
								POSS. WX. BEDROCK
25 ft	SS4	24'-24'1"	60/<1"	0.0	-		Spoon Bouncing	24'
								GRANITE BEDROCK
	R-1	26'-31'	10 min.	2.9	-		White, very hard, broken, slightly weathered, crs. grained PEGMATITE; quartz rich w/ white feldspar matrix, few iron stained fractures; RQD = 20%	
			14 min					
			14 min.					
30 ft			-					

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.
Bedrock borehole reduces from 3.9" (HQ) to 2.9" (NX) diam. at ~5 ft. into bedrock due to drilling issues.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts	**BORING/WELL ID** **MW-304B**

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	K. Harten	DRILLING FLUID:	Water
START DATE:	January 17, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 23, 2006		

DEPTH (ft.)

49.5 ft.

WELL INFORMATION:

WELL DEPTH:	49.4 ft. bgs	SCREEN INTERVAL:	29.4 to 49.4 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

2.7 ft. (1/25/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)		Sample Description	Stratigraphic Description
			-					
	R-2	31'-35'	-	3.8	-		Lt. gray to white, hard, sl. weathered, crs. grained GRANITE; contains crs.grained pale green feldspar and muscovite; no distinct foliations or fracture angles, fractures are close to mod. close, w/ some staining; RQD = 69%	GRANITE BEDROCK
			-					
			6 min.					
35 ft			10 min.					
	R-3	35'-40'	4min	4.5	-		Gray, very hard, fresh, med. to crs. grained GRANITE; few large white to pale green feldspar and muscovite crystals; core contains single (1) mod. angled stained fracture @ 24" (other breaks were caused during drilling); RQD = 90%	
			6 min.					
			6 min.					
			6 min.					
40 ft			5 min.					
	R-4	40'-45'	5 min.	4.7	-		Gray, very hard, fresh, med. to crs. grained GRANITE w/ wide spaced, low to mod. angle fractures (at mid-core); RQD = 83%	
			4 min					
			4 min					
			4 min					
45 ft			4 min					
	R-5	45'-49.5'	4.5 min (avg.)	4.5	-		Gray, hard, sl. weathered, med. to crs. grained GRANITE, w/ mod. close to close, mod. to high angle fractures; fractures occuring at bottom half of run; RQD = 89%	
50 ft								49.5' EOB @ 49.5 ft.
								Refer to Well Installation Log
55 ft								
60 ft								

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

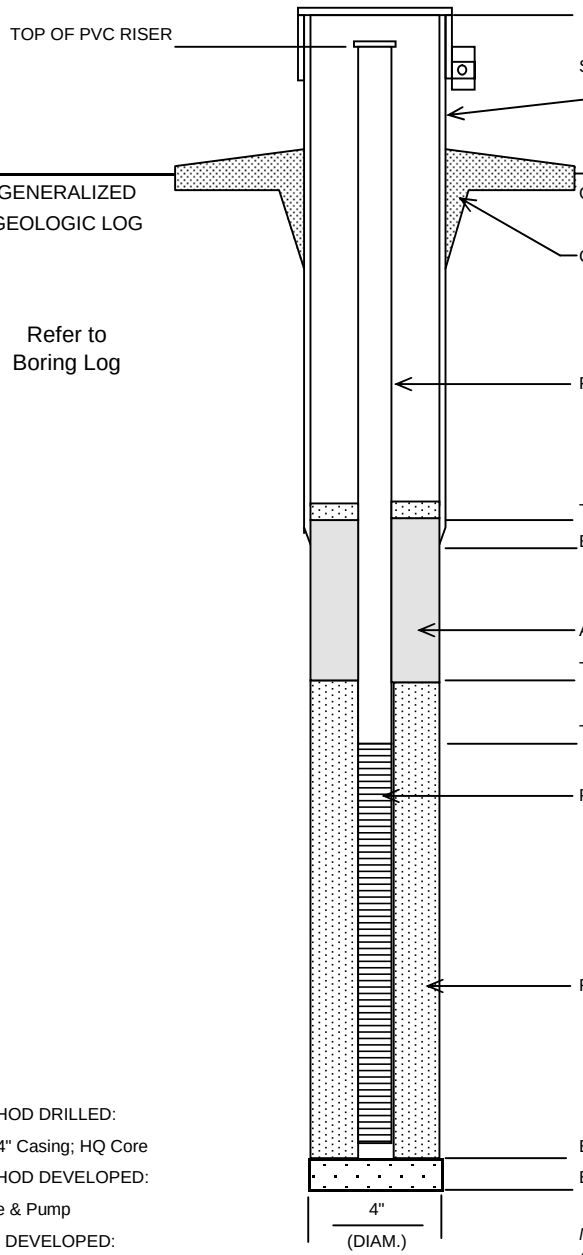
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.
Bedrock borehole reduces from 3.9" (HQ) to 2.9" (NX) diam. at ~5 ft. into bedrock due to drilling issues.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-304B**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/23/2006	K. Harten	
FINISHED:	DRILLER:	
1/24/2006	C. O'Donnell	2.8 ft. bgs (1/25/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.75	
TOP OF PVC RISER	2.65	
SURFACE CASING: DIA.: 4-in. TYPE: Steel w/ Alum Cover	0.0	
GROUND SURFACE		
CONCRETE		
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BEDROCK	24.0	
TOP OF ANNULAR SEAL	24.75	
BOTTOM OF PROTECTIVE PIPE*	25.5	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	28	
TOP OF WELL SCREEN	29.4	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	49.4	
BOTTOM OF HOLE	49.5	

Notes: Set bottom of permanent 4" Steel Casing @ 25.5 ft. Bedrock borehole reduces from 3.9" (HQ) to 2.9" (NX) diam. at ~5 ft. into bedrock due to drilling issues.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-305S

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (4" Casing)
DRILLER:	Matt Cochran	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	Water
START DATE:	January 18, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 19, 2006		

DEPTH (ft.)

21 feet bgs

WELL INFORMATION:

WELL DEPTH	13 ft. bgs	SCREEN INTERVAL	3 to 13 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.64 ft bgs (1/24/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft)	Hdsp. PID* (ppm)	Sample Depth (ft)	Sample Description	Stratigraphic Description
0 ft	SS-1	0 - 2	1 / 9	1.7	29	0.0-0.2	Topsoil	
			17 / 18			0.2-1.1	Brown FINE SANDY LOAM, roots, loose, dry.	FILL
	SS-2	2 - 4	2 / 8	1.3	10	1.1-1.7	Variable yellow-brown/green-brown FINE SAND, trace	
			9 / 10				silt and pebble, slightly dense, dry.	
5 ft	SS-3	4 - 6	4 / 9	1.4	15	1.7-2.0	Void	
			10 / 11			2.0-2.3	Brown FINE SANDY LOAM, loose, dry.	
						2.3-2.5	Yellow-brown FINE SAND AND SILT, slightly dense.	
						2.5-2.7	White-gray, friable material - asbestos.	
						2.7-3.3	Yellow-brown /natural MEDIUM SAND, trace pebble,	9 ft
10 ft	SS-4	9 - 11	18 / 14	0.9	8		loose, dry.	
			11 / 11			3.3-4.0	Void	Native Sand
						4.0-4.5	Mix MEDIUM-COARSE SAND and SILT/CLAY textured	Fine to Coarse
							ASBESTOS.	
						4.5-5.3	Light-green ASBESTOS, fibrous, silt/clay texture, moist	
15 ft	SS-5	14 - 16	14 / 22	1.0	3	5.3-5.4	Natural MEDIUM-COARSE SAND, wet.	
			35 / 26			5.4-6.0	Void	
						9.0-9.4	Natural COARSE SAND, trace pebble, loose.	
						9.4-9.9	Light brown/natural FINE SAND, little-trace medium	
							sand, loose.	
20 ft	SS-6	19 - 21	17 / 14	0.4	7	9.9-11.0	Void	
			44 / 26			14.0-14.6	Tan FINE SAND, trace silt, loose.	
						14.6-14.8	Tan/natural FINE and COARSE SANDS	EOB @ 21.0 ft.
						14.8-15.0	Light tan FINE SAND, slightly compact.	
						15.0-16.0	Void	Refer to Well
25 ft						19.0-19.4	Granite, texture like rock salt.	Installation Log
						19.4-21.0	Void	
30 ft								

trace	0 to 5%
few	5 to 10%
little	15 to 25%
some	30 to 45%
mostly	>50%

Sample Types

SS	2" Split Spoon
S3	3" Split Spoon
ST	Shelby Tube
R	Rock Core

Notes/Comments:

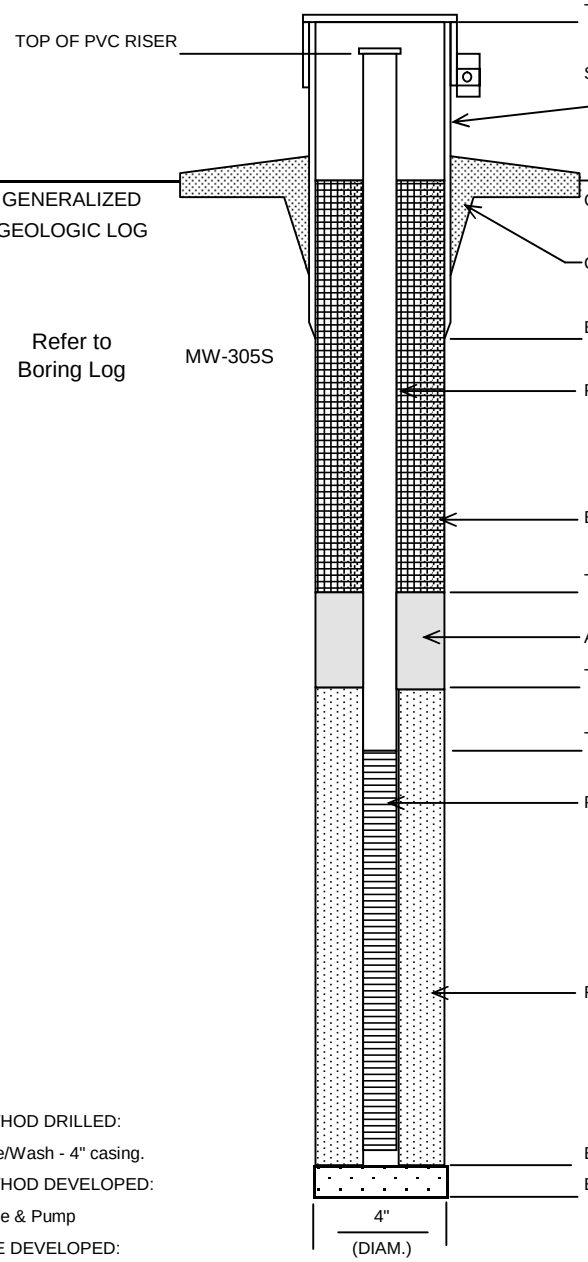
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6. High humidity, PID readings possibly due to/influenced by moisture in headspace samples.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-305S**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/19/2006	W. Abrahams-Dematte	
FINISHED:	DRILLER:	
1/19/2006	Matt	5.64 ft bgs (1/24/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.92	
TOP OF PVC RISER	2.71	
SURFACE CASING: DIA.: 4-in. TYPE: Steel		
GROUND SURFACE	0.0	
CONCRETE		
BOTTOM OF PROTECTIVE PIPE	2.08	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Sand		
TOP OF ANNULAR SEAL	1	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	2	
TOP OF WELL SCREEN	3	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	13	
BOTTOM OF HOLE	21	

METHOD DRILLED:
Drive/Wash - 4" casing.

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
28 minutes, ~98 gallons purged

Notes: Well originally intended to be MW-305D. Changed due to drive shoe issues. 13-21 feet is cave in from side wall collapse.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-305D

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	M. Cochran/C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	Water
START DATE:	January 19, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 20, 2006		

DEPTH (ft.)

34 ft bgs

WELL INFORMATION:

WELL DEPTH	25 ft. bgs	SCREEN INTERVAL	15 to 25 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.35 ft bgs (1/24/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft)	Hdsp. PID* (ppm)	Sample Depth (ft)	Sample Description	Stratigraphic Description
0 ft								
5 ft							*Refer to the MW-305S Geologic Log for stratigraphic description above 21 feet below ground surface.*	
10 ft								
15 ft								
20 ft								
	Roller Bit	21-24	-	-	-	21 feet	Weathered Bedrock	
			-	-	-	21-23	Drilling unsteady, difficult. At 22.8-23 feet - fracture.	
			-	-	-	23-24	Drilling is more consistent (as if in competent rock)	
			-	-	-	24.0	Attempted 2" split spoon - 120 blows for 0 inches.	24.0-25.3 feet
25 ft	Rock Core	24-25	6 m 24 s	1.3	-		Coring smooth, competent rock.	Coarse grained diorite.
	"	25-26	2 m 3 s		-		Fracture at 25.8 feet.	
	Roller Bit	26-27	0 m 42 s		-		Driller stops drilling at 26.3 feet, thinks went through	
	"	27-28	-		-		boulder. Ran 2" split spoon - no recovery/advancement.	
	"	28-29	-		-		Driller still not convinced, roller bit26-29 ft. first 2 ft easy.	
30 ft	Rock Core	29-30	7 m 0 s	5.0	-		Steady drilling.	*Continued on page 2.*

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	2" Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**	**BORING/WELL ID**
701 Edgewater Drive	IRON HORSE PARK	**MW-305D**
Wakefield, MA 01880	High Street	
(617) 246-5200	North Billerica, Massachusetts	

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	M. Cochran/C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	Water
START DATE:	January 19, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 20, 2006		

DEPTH (ft.)

34 ft bgs

WELL INFORMATION:

WELL DEPTH:	25 ft. bgs	SCREEN INTERVAL:	15 to 25 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.35 ft bgs (1/24/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft)	Hdsp. PID* (ppm)	Sample Depth (ft)	Sample Description	Stratigraphic Description
30 ft	Rock Core	30-31	8 m 24 s	(5 feet	-	30-31	Intermittent water loss. Horizontal fracture at 30.6 ft.,	
	"	31-32	7 m 14 s	see prev.	-		no weathering observed, fracture probably due to a stop	Coarse grained diorite.
	"	32-33	5 m 38 s	page)	-		in drilling process to add additional drill rod.	
	"	33-34	4 m 22 s		-	31-32	Steady loss of water. High angled fracture at 31.6 ft.	
35 ft							showing weathering and iron staining.	
						32-33	Loss of water slowed. Fracture zone begun at 31.6 ft	
							continues through 32.8 feet. High angle fractures cross	
							obliquely at approx. 40 degree angles. Weathered, iron	
							stained.	
40 ft						33-34	Loss of water slowed. Vertical fracture from 33.5-34.0 ft	
45 ft								
50 ft								
55 ft								
60 ft								

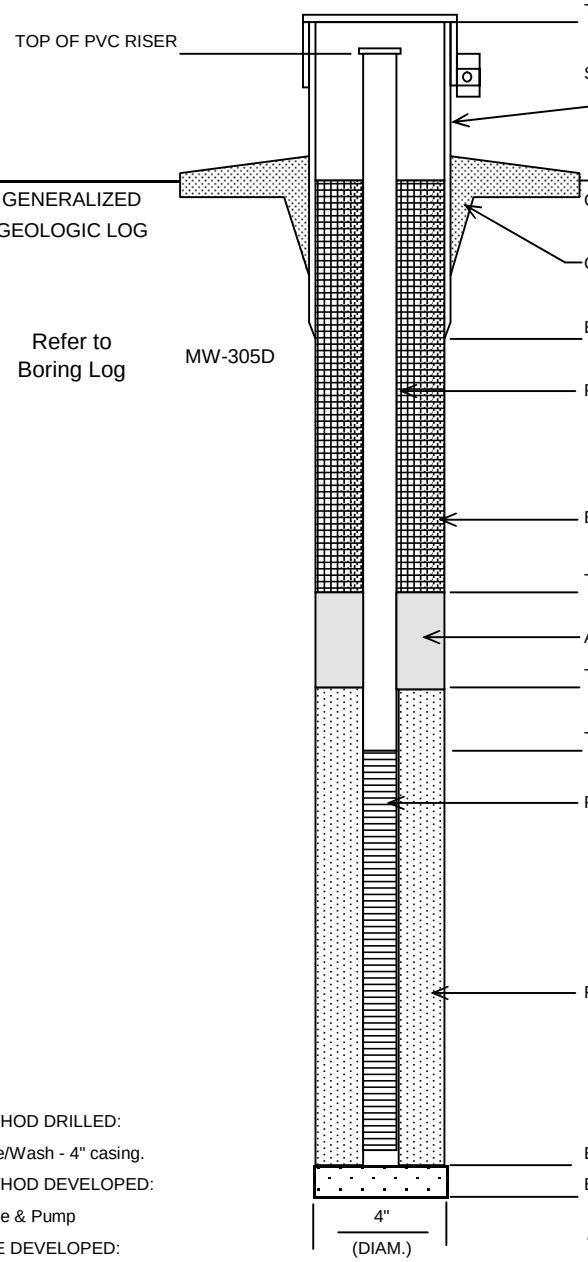
trace	0 to 5%		Sample Types
few	5 to 10%	SS	2" Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT: **Iron Horse Park - Operable Unit 4**	JOB NO. **36800321.00003**	WELL NO. **MW-305D**
DRILLING CONTRACTOR: Geologic-Earth Ex.	COORDINATES:	
BEGUN: 1/20/2006	GEO/ENG: W. Abrahams-Dematte	WATER LEVEL (Depth/Elev.)
FINISHED: 1/20/2006	DRILLER: Matt/C. O'Donnell	5.35 ft bgs (1/24/06)



	DEPTH BGS / HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.91	
TOP OF PVC RISER	2.47	
SURFACE CASING: DIA.: 4-in. TYPE: Steel	0.0	
GROUND SURFACE		
CONCRETE		
BOTTOM OF PROTECTIVE PIPE	2.09	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Sand		
TOP OF ANNULAR SEAL	11	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	13	
TOP OF WELL SCREEN	15	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	25	
BOTTOM OF HOLE	34	

GENERALIZED GEOLOGIC LOG

Refer to Boring Log MW-305D

4" (DIAM.)

METHOD DRILLED:
Drive/Wash - 4" casing.

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
63 minutes, ~220 gallons purged

Notes: 25 to 29 feet roller bit and rock core drilling to confirm bedrock. Backfilled with bentonite to 27 feet then sand pack.

M&E

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-306S

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	H.S.A./Drive & Wash (4" Casing)
DRILLER:	Matt Cochran	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	Water
START DATE:	January 17, 2006	SAMPLING METHOD:	2" and 3" Split-Spoons (as noted)
FINISH DATE:	January 18, 2006		

DEPTH (ft.)

12 ft.

WELL INFORMATION:

WELL DEPTH	11.3 ft. bgs	SCREEN INTERVAL	1.3 to 11.3 ft.
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

4.39 ft. (1/24/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
0 ft	SS-1	0-2	8 / 11	1.2	1	0.0-0.7	Orange-brown/natural MEDIUM SAND, little fine sand	
			8 / 7				loose, dry, roots.	FILL
	SS-2	2-4	10 / 9	1.7	1	0.7-0.9	GRAVEL and FINE SAND	
			9 / 11			0.9-1.2	Tan, FINE SAND, loose, dry.	
5 ft	SS-3	4-6	6 / 7	1.5	1	1.2-2.0	Void	
			10 / 15			2.0-3.7	Tan, FINE SAND, loose, dry. Well sorted fill.	
	SS-4	6-8	11 / 10	1.7	1	3.7-4.0	Void	
			11 / 13			4.0-5.5	Tan, FINE SAND, well sorted, iron stained horizons,	
	SS-5	8-10	8 / 9	1.3	0		saturated.	
10 ft			12 / 11			5.5-6.0	Void	
	SS-6	10-12	4 / 7	1.5	0	6.0-7.0	Same As 4.0 to 5.5 feet.	
			9 / 17			7.0-7.7	Grey/natural FINE SAND, loose, wet.	
						7.7-8.0	Void	12.0'
						8.0-8.3	Black FINE SAND, trace silt, loose, wet.	
15 ft						8.3-9.3	Grey FINE SAND, trace silt, loose, wet.	EOB @ 12.0 ft.
							Septic type odor.	
						9.3-10.0	Void	*Refer to Well Installation Log*
						10.0-10.4	Grey/natural FINE SAND, loose, wet.	
						10.4-11.5	Grey/natural MEDIUM SAND, trace coarse sand and	
20 ft							pebble, loose, wet.	
						11.5-12	Void	
25 ft								
30 ft								

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	2" Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

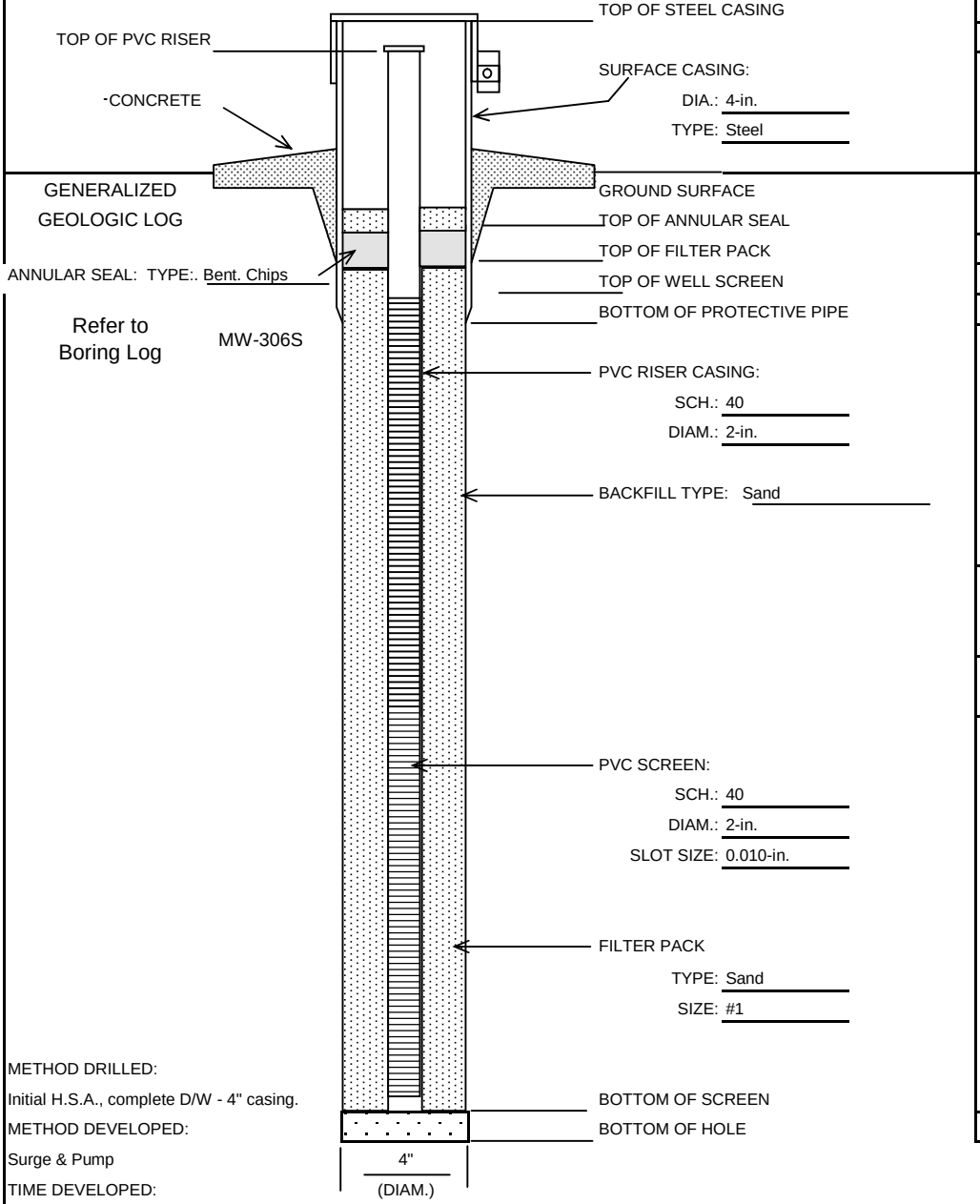
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-306S**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/18/2006	W. Abrahams-Dematte	
FINISHED:	DRILLER:	
1/18/2006	C. O'Donnell	4.39 ft bgs (1/24/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.92	
TOP OF PVC RISER	2.33	
SURFACE CASING: DIA.: 4-in. TYPE: Steel	0.0	
GROUND SURFACE		
TOP OF ANNULAR SEAL	0.85	
TOP OF FILTER PACK	1.35	
TOP OF WELL SCREEN	1.85	
BOTTOM OF PROTECTIVE PIPE	2.08	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Sand	0.85	
	1.35	
	1.85	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	11.85	
BOTTOM OF HOLE	12	

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**	**BORING/WELL ID**
701 Edgewater Drive	IRON HORSE PARK	**MW-307S**
Wakefield, MA 01880	High Street	
(617) 246-5200	North Billerica, Massachusetts	

				DEPTH (ft.)
DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (4" Casing)	
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)	13 ft bgs
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	Water	
START DATE:	January 31, 2006	SAMPLING METHOD:	ns	
FINISH DATE:	January 31, 2006			

WELL INFORMATION:				WATER LEVEL (ft.)
WELL DEPTH	12.85 ft. bgs	SCREEN INTERVAL	2.85 to 12.85 ft. bgs	5.81 ft bgs (2/2/06)
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size	

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft)	Hdsp. PID* (ppm)	Sample Depth (ft)	Sample Description	Stratigraphic Description
0 ft							*Refer to the MW-307B Geologic Log for stratigraphic description.*	
5 ft								
10 ft								
15 ft								
20 ft								
25 ft								
30 ft								

			Sample Types
trace	0 to 5%	SS	2" Split Spoon
few	5 to 10%	S3	3" Split Spoon
little	15 to 25%	ST	Shelby Tube
some	30 to 45%	R	Rock Core
mostly	>50%		

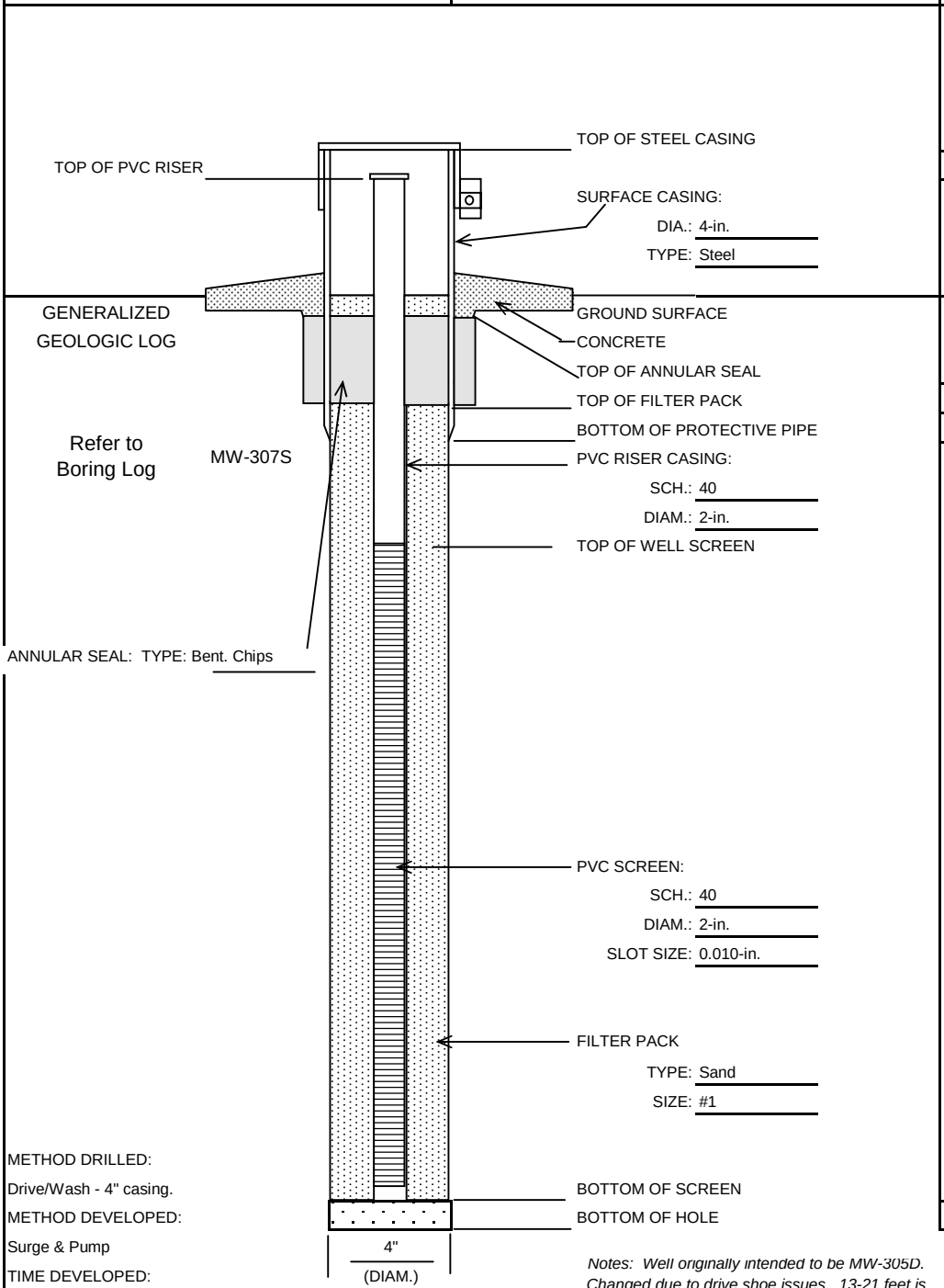
Notes/Comments:
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-307S**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/31/2006	W. Abrahams-Dematte	
FINISHED:	DRILLER:	
1/31/2006	C. O'Donnell	5.64 ft bgs (1/24/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	3.08	
TOP OF PVC RISER	2.98	
SURFACE CASING: DIA.: 4-in. TYPE: Steel	0.0	
GROUND SURFACE		
CONCRETE		
TOP OF ANNULAR SEAL	0.35	
TOP OF FILTER PACK	0.85	
BOTTOM OF PROTECTIVE PIPE	1.92	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
TOP OF WELL SCREEN	2.85	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	12.85	
BOTTOM OF HOLE	13	

METHOD DRILLED:
Drive/Wash - 4" casing.

METHOD DEVELOPED:
Surge & Pump

TIME DEVELOPED:
20 minutes, ~60 gallons purged

Notes: Well originally intended to be MW-305D. Changed due to drive shoe issues. 13-21 feet is cave in from side wall collapse.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-307D

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abrahams-Dematte	DRILLING FLUID:	Water
START DATE:	January 30, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 30, 2006		
WELL INFORMATION:			
WELL DEPTH	47.5 ft. bgs	SCREEN INTERVAL	37.5 to 47.5 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

DEPTH (ft.)

47.5 ft bgs

WATER LEVEL (ft.)

5.85 ft bgs (2/2/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 0.5 ft.)	Rec. (ft)	Hdsp. PID* (ppm)	Sample Depth (ft)	Sample Description	Stratigraphic Description
0 ft							*Refer to the MW-307B Geologic Log for stratigraphic description.*	
5 ft								
10 ft								
15 ft								
20 ft								
25 ft								
30 ft								

trace	0 to 5%		Sample Types
few	5 to 10%	SS	2" Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

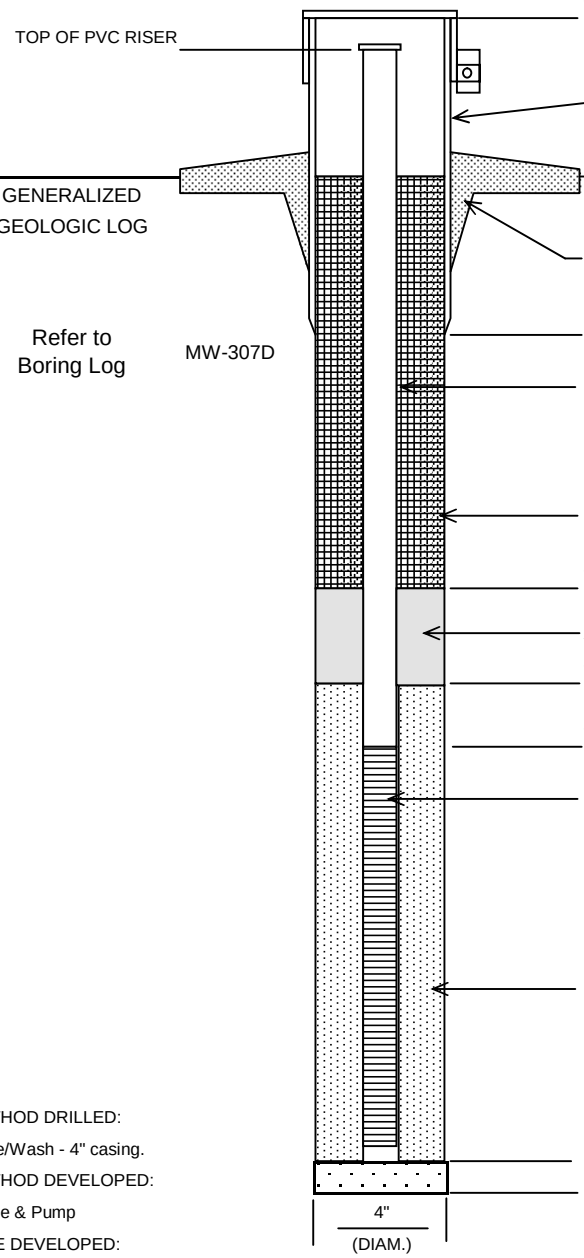
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-307D**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/30/2006	W. Abrahams-Dematte	
FINISHED:	DRILLER:	
1/30/2006	C. O'Donnell	5.85 ft bgs (2/2/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.54	
TOP OF PVC RISER	2.42	
SURFACE CASING: DIA.: 4-in. TYPE: Steel	0.0	
GROUND SURFACE		
CONCRETE		
BOTTOM OF PROTECTIVE PIPE	2.46	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Sand		
TOP OF ANNULAR SEAL	34	
ANNULAR SEAL: TYPE: Bent. Chips		
TOP OF FILTER PACK	36	
TOP OF WELL SCREEN	37.5	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	47.5	
BOTTOM OF HOLE	47.5	

METHOD DRILLED:
Drive/Wash - 4" casing.
METHOD DEVELOPED:
Surge & Pump
TIME DEVELOPED:
85 minutes, ~170 gallons purged

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts	**BORING/WELL ID** **MW-307B**

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abr.-Dematte/K. Harten	DRILLING FLUID:	Water
START DATE:	January 25, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 27, 2006		

DEPTH (ft.)

84 ft bgs

WELL INFORMATION:

WELL DEPTH	83.5 ft. bgs	SCREEN INTERVAL	61.5 to 81.5 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.10 ft bgs (2/2/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
0 ft	SS-1	0 - 2	2 / 2	1.2	0	0.0-0.3	Brown ORGANIC MATTER.	ORGANIC MATTER
			4 / 5			0.3-1.2	Brown FINE SAND, little-trace silt, loose, dry.	0.3'
	SS-2	2 - 4	3 / 5	1.6	0	1.2-2.0	Void	FILL
			6 / 4				0.1 ft cave fall in.	FINE SAND
5 ft	S3-3	4 - 6	3 / 2	1.0	0	2.0-3.3	Tan FINE SAND, loose, dry. From 2.2 to 2.6 feet	ASBESTOS
			2 / 3				the color is browner and texture contains trace of silt.	
	S3-4	6 - 8	4 / 2	1.3	9	3.3-3.6	Bluish-grey ASBESTOS, silt-clay texture, moist.	
			1 / 2			3.6-4.0	Void	7.0 PEAT
	SS-5	8 - 10	1 / 1	1.5	1	4.0-4.4	Tan FINE SAND, loose, dry.	
10 ft			2 / 6			4.4-5.0	Black top 0.2' grey bottom 0.4', ASBESTOS, silt-clay	8.9'
							texture, moist, trace plastic sheeting in head of spoon.	
						5.0-6.0	Void	
						6.0-6.6	Dark gray ASBESTOS, silt-clay texture, saturated.	
						6.6-7.0	Same As 6.0 to 6.6 ft, moist rather than saturated.	
15 ft	SS-6	14 - 16	7 / 8	0.6	0	7.0-7.3	Dark brown/black PEAT.	SAND
			8 / 9			7.3-8.0	Void	
						8.0-8.9	Dark brown/black, PEAT	
						8.9-9.5	Red-brown FINE SAND and SILT, trace clay, loose, wet.	
						9.5-10.0	Void	
20 ft	SS-7	19 - 21	17 / 18	1.1	0	14.0-14.6	Tan/natural FINE SAND, trace medium sand, loose, wet	
			24 / 36			14.6-16.0	Void	
						19.0-20.1	Grey FINE SAND, trace silt, firm to compact. At ~19.5	
							to 20.1 ft iron stain layers appear every 0.2 ft.	
						20.1-21.0	Void	
25 ft	SS-8	24 - 26	8-12	1.1	0.7	24.0-25.1	Brown FINE-COARSE SAND, few fine gravel, trace silt; clean, well graded; (SW)	
			15-12					
						25.1-26.0	Void	
30 ft	SS-9	29 - 31	6-6	0.6	0.2	29.0-29.6	Brown fine to crs. SAND, as above	

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**
701 Edgewater Drive	IRON HORSE PARK
Wakefield, MA 01880	High Street
(617) 246-5200	North Billerica, Massachusetts

BORING/WELL ID

MW-307B

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abr.-Dematte/K. Harten	DRILLING FLUID:	Water
START DATE:	January 25, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	January 27, 2006		

DEPTH (ft.)

84 ft bgs

WELL INFORMATION:

WELL DEPTH:	83.5 ft. bgs	SCREEN INTERVAL:	61.5 to 81.5 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

5.10 ft bgs (2/2/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
30 ft	SS-9	29 - 31	8-8				Brown fine to crs. SAND, few fine gravel, trace silt; clean, well graded; (SW)	
	(cont.)							
						29.6-31.0	Void	SAND
35 ft	SS-10	34 - 36	7-8	0.5	0.1	34.0-34.5	Brown fine to med. SAND, few crs. sand, few fine gravel, trace silt; (SP/SW)	
			8-14					
						34.5-37.0	Void	
						37.5	*Encounter bedrock or cobble @ 37.5 ft.*	
								37.5'
40 ft	SS-11	39 - 41	33-27	0.3	0.0	39.0-39.3	Brown fine to crs. SAND, some fine to crs. gravel, little to trace silt; well graded, poss. sandy till; poor recovery - crs. gravel lodged in tip; (SM)	
			28-19					SAND w/ GRAVEL, FEW COBBLES/BOULDERS
						39.3-41.0	Void	
						41.5-42.5	*Boulder/cobble from 41.5' to 42.5'*	
45 ft	SS-12	44 - 46	10-8	1.5	0.1	44.0-45.0	Brown fine to crs. SAND, little to some fine to crs. gravel, trace to little silt; well graded (non till-like); (SW-SP), some cobbles	
			9-13					
						45.0-45.5	Brown fine SAND, few med. to crs. sand, few fine gravel, trace to little silt; (SM-SP), some cobbles	47.5'
						45.5-46.0	Void	
50 ft	SS-13	49 - 51	75/1" (140#)	0.3	0.6	49.0-49.3	Brown fine to crs. SAND, some fine to crs. gravel, trace silt; very dense, well graded, sandy till matrix; rock frags in tip; (SW)	TILL w/ COBBLES, OCC. BOULDERS
			18/5"-25 (300#)					
						49.3-49.5	Void	
						51.0-52.5	*18" Boulder @ 51 ft.*	
55 ft	SS14	54 - 56	39-55	0.9	0.0	55.0-55.9	Gray fine to crs. SAND (mostly f/m), little fine to crs. gravel, trace silt; mod. graded; probably sandy till	
			46-45					
						55.9-56.0	Void	56'
							Grinding @ 56 ft.; roller bit drill to 59 ft.	GRANITE BEDROCK
60 ft	Rock Core	59 - 64	6 m 45 s	3.8	-	59-60	Steady coring, little water loss. Fractures 59.2' and 60.0'	

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC.	**SITE LOCATION:**	**BORING/WELL ID**
701 Edgewater Drive	IRON HORSE PARK	**MW-307B**
Wakefield, MA 01880	High Street	
(617) 246-5200	North Billerica, Massachusetts	

				DEPTH (ft.)
DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)	84 ft bgs
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)	
GEOLOGIST/ENG.	W. Abr.-Dematte/K. Harten	DRILLING FLUID:	Water	
START DATE:	January 25, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)	
FINISH DATE:	January 27, 2006			

WELL INFORMATION:				WATER LEVEL (ft.)
WELL DEPTH:	83.5 ft. bgs	SCREEN INTERVAL:	61.5 to 81.5 ft. bgs	5.10 ft bgs (2/2/06)
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size	

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
60 ft	Rock Core	59 - 64	7 m 12 s	(cont.)	-	60-61	Little water loss. Fractures at 60.4' and 61.0'	
	"		6 m 47 s		-	61-62	Little water loss. Fractures at 61.3' and 62.0'	GRANITE
	"		7 m 5 s		-	62-63	Slight inc. in water loss, heavily fractured 62.3 to 62.8 ft.	(coarse grained)
	"		5 m 36 s		-	63-64	At 63.6 ft core barrel starts jumping - incompetent rock.	
65 ft	Rock Core	65 - 69	3 m 45 s	5.5	-		Top 1.2 ft. of core barrel contained drilling mud used to	
	"		5 m 11 s	(0.5 from	-		advance through overburden. Mud was necessary due	
	"		4 m 4 s	last core)	-		to difficulty in clearing casing of rock fragments while	
	"		3 m 20 s		-		roller bitting to 59 ft. Bottom of core all rubble, probable	Zones of increased muscovite
	"		4 m 20 s		-		lost last 0.5 ft. of core.	in 65-70 ft range.
70 ft	Rock Core	69 - 74	est. 5m 30s	4.6	-	64-65	Little water loss. Fracture at 64.6'	
	"		est. 2m 15s		-	65-66	Little water loss. Fracture at 65.5'	
	"		3 m 43 s		-	66-67	Little water loss. Fracture at 66.1'	
	"		4 m 38 s		-	67-68	Little water loss. Fracture at 67.8'	
	"		4 m 47 s		-	68-69	Little water loss. Fractures at 68.5' and 69.0'	
75 ft	Rock Core	74 - 79	est. 6m	5.0	-		Fractures generally large and heavily weathered.	
	"		est. 6m		-	69-70	Coarse grained granite. Fractures at 69.2' and 69.6'	
	"		est. 6m		-	70-71	Large fracture at 70.5'	
	"		6 m 34 s		-	71-72	Fracture at 71.3'	
	"		6 m 4 s		-	72-73	Break at 72.9, not weathered, low angle.	
80 ft	Rock Core	79 - 84	est. 4m	5.0	-	73-74	Fractures through out are generally high angled.	
	"		4 m 45 s		-	74-75	Moderate water loss.	
	"		4 m 26 s		-	75-76	Moderate water loss. Fractures at 75.5' and 75.9'	
	"		4 m 29 s		-	76-77	Fractured at 76.6'	
	"		4 m 45 s		-	77-78	Beginning of shear zone at 78', linear features noted.	
85 ft						78-79	Shear zone fractures extend to 78.4'. Fracture at 79'.	
						79-80	Fractures at 79.2' and 79.5'	
						80-81	Large fracture at 80.1', vertical fractures from 80.7	*EOB at 84 feet*
						81-82	through 82.1 feet.	
						82-83	Fractured at 82.7'.	*Refer to well*
90 ft						83-84	Vertical fractures 83.1'-83.8'.	*installation log.*

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

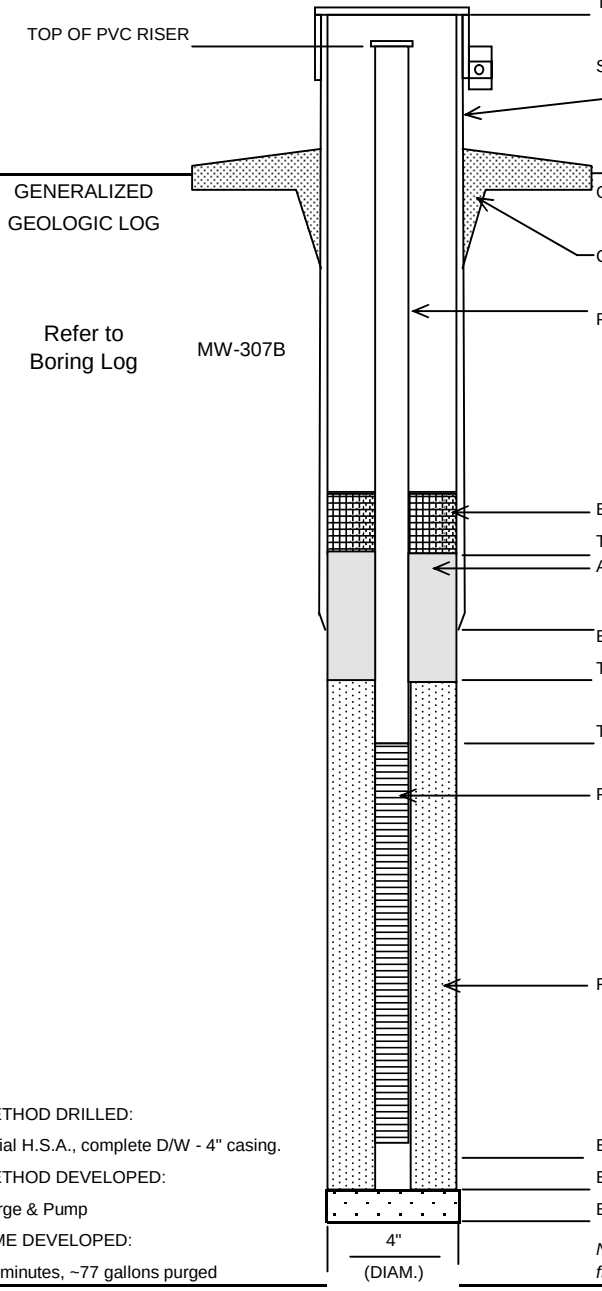
Notes/Comments:
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-307B**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
1/27/2006	W. Abrahams-Dematte	
FINISHED:	DRILLER:	
1/27/2006	C. O'Donnell	5.10 ft bgs (2/2/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	3.13	
TOP OF PVC RISER	2.94	
SURFACE CASING: DIA.: 4-in. TYPE: Steel	0.0	
GROUND SURFACE		
CONCRETE		
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BEDROCK	56	
BACKFILL TYPE: Sand (1 ft over Bent.)		
TOP OF ANNULAR SEAL	57	
ANNULAR SEAL: TYPE: Bent. Chips		
BOTTOM OF PROTECTIVE PIPE	59	
TOP OF FILTER PACK	61	
TOP OF WELL SCREEN	61.5	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	81.5	
BOTTOM OF SUMP	83.5	
BOTTOM OF HOLE	84	

METHOD DRILLED:
Initial H.S.A., complete D/W - 4" casing.
METHOD DEVELOPED:
Surge & Pump
TIME DEVELOPED:
22 minutes, ~77 gallons purged

*Notes: *Bottom of permanent 4" steel casing @ 59 ft.*

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-308B

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abr.-Dematte/K. Harten	DRILLING FLUID:	Water
START DATE:	January 31, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 2, 2006		

DEPTH (ft.)

72.8 ft.

WELL INFORMATION:

WELL DEPTH	72 ft. bgs	SCREEN INTERVAL	52 to 72 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

3.79 ft bgs (2/2/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
0 ft	SS-1	0 - 2	2 / 4	1.8	0	0.0-0.4	Dark brown FINE SANDY LOAM, and Organic Material	FILL
			6 / 7			0.4-0.9	Tan FINE SAND, trace silt, roots, loose, dry.	
	SS-2	2 - 4	6 / 17	1.1	0	0.9-1.4	Brown FINE SAND/SILT, slightly compact, dry.	
			7 / 8			1.4-1.6	Tan FINE SAND, little-trace silt, slightly compact, dry	
5 ft	SS-3	4 - 6	1 / 2	0.5	1	1.6-1.7	Yellow-tan FINE SAND, loose, dry.	
			2 / 3			1.7-1.8	ASBESTOS, moist	
						1.8-2.0	Void	
						2.0-3.1	Grey, ASBESTOS, silt-clay like texture, moist	
						3.1-4.0	Void	
10 ft	SS-4	9 - 11	65 / 2	0.4	5	4.0-4.5	Same As 2.0 to 3.1 feet,	
			2 / 2			4.5-6.0	Void	
							While driving casing to 9 ft. the casing bounced a lot.	
						9.0-9.1	Wood, metal chips, black plastic, saturated.	
						9.1-9.4	Brown, PEAT, saturated.	
15 ft	SS-5	14 - 16	32 / 13	0.6	6	9.4-11.0	Void	
			13 / 10				While washing out casing after drive to 14 feet, a lot of	
							black plastic came up. Driller said he noted change at	
							12 feet. Plastic water sampled - headspace of 74 ppm.	
						14.0-14.6	Green-gray FINE SAND, little medium sand, loose, wet.	
20 ft	SS-6	19-21	25 / 35	0.0	ns		Pile of metal chips (wash) on top of the sample.	
			40 / 50			14.6-16.0	Void	
						19.0-21.0	NO RECOVERY.	
25 ft	S3-7	24'-26'	11-11	0.0	-	24.0-26.0	No Recovery; spoon contains only sand and gravel wash (loose material with trace to no fines flows past basket trap)	
			11-12					
30 ft	SS-8	29'-31'	5-6	0.5	0.2	29.0-29.5	Brown fine to crs. SAND, some to little fine to crs. gravel, trace silt; well graded, gray sand in tip: (SW)	

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-308B

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abr.-Dematte/K. Harten	DRILLING FLUID:	Water
START DATE:	January 31, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 2, 2006		

DEPTH (ft.)

72.8 ft.

WELL INFORMATION:

WELL DEPTH:	72 ft. bgs	SCREEN INTERVAL:	52 to 72 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

3.79 ft bgs (2/2/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
	SS-8	29'-31'	8-7				Brown fine to crs. SAND, some to little fine to crs. gravel, trace silt; well graded, gray sand in tip: (SW)	
	(cont.)							
						29.5-31.0	Void	
35 ft	SS-9	34'-36'	7-5	1.0	0.2	34.0-35.0	Brown fine to crs. SAND, trace to few fine gravel, trace silt; mod. graded; (SW)	
			7-7					
						35.0-36.0	Void	
							Running Sands	
								38'
40 ft	SS-10	39'-40.5'	21-22	0.8	3.4	39.0-39.8	Gray brown fine to crs. SAND, little silt, little fine gravel; till-like matrix, well graded; (SM)	TILL
			19					
						39.8-40.5	Void	
45 ft	SS-11	44'-46'	38-27	0.8	0.6	44.0-44.8	Gray brown fine to crs. SAND, little fine to crs. gravel, trace (to little) silt; well graded, till-like matrix; (SW-SM)	
			57-60					
						44.8-46.0	Void	46'
							Encounter bedrock @ 46 ft.; Roller bit drill to 48 ft.	**BEDROCK**
	R-1	48'-53'	6 min.	3.8	-		Gray, hard, broken, mod. weathered, fine to crs. grained GRANITE; core is very broken, more fine, and has sandy seams/fractures from 1.2' to 3'; fractures and foliation are mod. angled; RQD = 52%	
50 ft			2 min.					GRANITE
			2 min.					
			2 min.					
			4 min.					
	R-2	53'-58'	4 min.	4.7	-		Gray, hard, broken, slightly weathered, med. grained GRANITE, w/ mod. to high angle fractures, some sand and clayey silt filled joints, few micro fractures (cracks); RQD = 42%	
55 ft			3 min.					
			3 min.					
			2 min.					
			3 min.					
	R-3	58'-62.75'	3 min.	4.7	-		Gray, hard, med. grained GRANITE, w/ close to mod. close, mod to high angle fractures; sand filled fractures occur in bottom 2'; RQD = 54%	
60 ft			4 min.					

trace	0 to 5%		Sample Types
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

GEOLOGIC LOG

METCALF & EDDY, INC. 701 Edgewater Drive Wakefield, MA 01880 (617) 246-5200	**SITE LOCATION:** IRON HORSE PARK High Street North Billerica, Massachusetts

BORING/WELL ID

MW-308B

DRILL CONTRACTOR:	Geologic-Earth Ex.	DRILLING METHOD:	Drive & Wash (5" & 4" Casing)
DRILLER:	C. O'Donnell	DRILL RIG:	CME-55 (bombardier)
GEOLOGIST/ENG.	W. Abr.-Dematte/K. Harten	DRILLING FLUID:	Water
START DATE:	January 31, 2006	SAMPLING METHOD:	2" Split-Spoon (except when noted)
FINISH DATE:	February 2, 2006		

DEPTH (ft.)

72.8 ft.

WELL INFORMATION:

WELL DEPTH:	72 ft. bgs	SCREEN INTERVAL:	52 to 72 ft. bgs
WELL DIAMETER:	2-inches	SCREEN TYPE:	Sch 40, 0.010" slot size

WATER LEVEL (ft.)

3.79 ft bgs (2/2/06)

Depth	Sample No.	Sample Interval (ft)	Blow Counts (per 6 in.)	Rec. (ft.)	Hdsp. PID* (ppm)	Sample Depth (ft.)	Sample Description	Stratigraphic Description
60 ft	R-3	58'-62.75'	4 min.				Gray, med. grained GRANITE	
	(cont.)		3 min.					
			-					GRANITE
	R-4	62.75'-	5 min.	5.0	-			
65 ft		67.75'	5 min.				Gray, hard, fresh, med. to crs. grained GRANITE, core has one (1) mod. angle fracture @ 2' into run, and occ. healed joints; RQD = 100%	
			3 min.					
			5 min.					
			4 min.					
	R-5	67.75'-	3 min.	3.3	-		Gray, hard, fresh to slightly weathered, med. to crs. grained GRANITE, core has single 12" long, 75° fracture between 1.5' and 2.5'; RQD = 18% (affected by poor recovery and high angle fracture - piece left in borehole)	
70 ft		72.75'	4 min.					
			4 min.					
			4 min.					
			5 min.					
								72.75' EOB @ 72.75'
75 ft								
								Refer to Well Installation Log
80 ft								
85 ft								
90 ft								

trace	0 to 5%	Sample Types	
few	5 to 10%	SS	Split Spoon
little	15 to 25%	S3	3" Split Spoon
some	30 to 45%	ST	Shelby Tube
mostly	>50%	R	Rock Core

Notes/Comments:

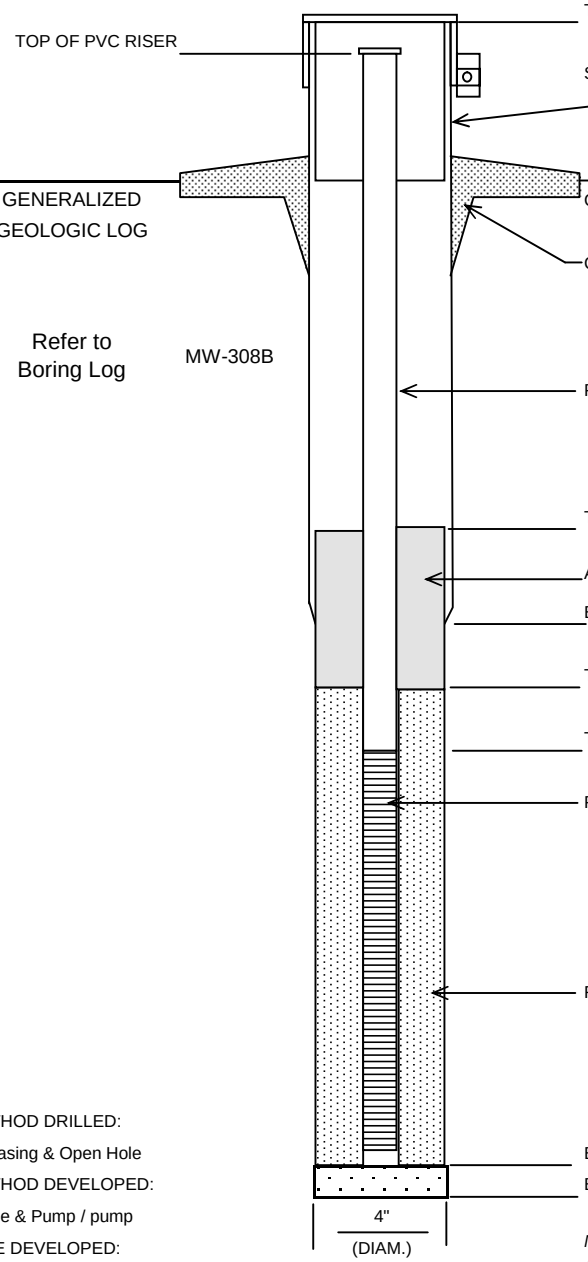
*PID calibrated to isobutylene. To read as benzene, multiply by 0.6.

MONITORING WELL INSTALLATION LOG

PROJECT:	JOB NO.	WELL NO.
Iron Horse Park - Operable Unit 4	**36800321.00003**	**MW-308B**

DRILLING CONTRACTOR:	COORDINATES:
Geologic-Earth Ex.	

BEGUN:	GEO/ENG:	WATER LEVEL (Depth/Elev.)
2/2/2006	K. Harten	
FINISHED:	DRILLER:	
2/2/2006	C. O'Donnell	3.79 ft bgs (2/2/06)



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
TOP OF STEEL CASING	2.25	
TOP OF PVC RISER	2.05	
SURFACE CASING: DIA.: 4-in. TYPE: Steel w/ Alum. Cover		
GROUND SURFACE	0.0	
CONCRETE		
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
TOP OF ANNULAR SEAL	43	
ANNULAR SEAL: TYPE: Bent. Chips	46 - Bedrock	
BOTTOM OF STEEL CASING*	47.8	
TOP OF FILTER PACK	50.5	
TOP OF WELL SCREEN	52	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: Sand SIZE: #1		
BOTTOM OF SCREEN	72	
BOTTOM OF HOLE	72'8"	

METHOD DRILLED:
5" Casing & Open Hole
METHOD DEVELOPED:
Surge & Pump / pump
TIME DEVELOPED:
~6 hours, ~720 gallons purged

Notes: Set bottom of permanent 4" Steel Casing @ 47.8 ft.

M&E

APPENDIX D

Survey Data

160 North Washington Street, 7th Floor
Boston, MA 02114-2127
www.bryant-engrs.com
T (617) 248-0300
F (617) 248-0212

BRYANT ASSOCIATES
Engineers Surveyors Construction Managers

Letter of Transmittal

Bryant #: 06025.00
Date: 05/24/2006

To: Metcalf & Eddy
701 Edgewater Drive
Wakefield, MA01880

Re: Iron Horse Park

Attention: Bill Abrahams-Dematte

We are sending you: ☒ Attached ☐ Under separate cover **Via:** Mail
☐ Change Order ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Shop drawings ☐ Diskette ☐ CD-Rom ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	05/24/2006	06025	Well Plot
1	05/24/2006	06025	Copies of Spreadsheets
1	05/24/2006	06025	Copy of level notes

These are transmitted as checked below:

☐ For approval ☐ As requested ☐ Prints returned after loan to us
☒ For your use ☐ For review and comment ☐ _____

COMMENTS

Hi Bill

Here are the items mentioned in Section 4 of the deliverables you requested.

Please call with any questions.

Craig

CC:

SIGNED: Craig Vancura

Craig Vancura extension 2129
CVancura@bryant-engrs.com

If enclosures are not as noted, kindly notify us at once.

	Project Datum/ NAD27 sft		
Pt. No.	Northing	Easting	Description
10000	576509.60	664118.00	MW306S
10001	576478.16	664238.82	P18
10002	576941.38	663872.13	MW305S
10003	576931.77	663873.25	MW305D
10004	576849.58	664996.15	MW307S
10005	576842.35	664995.98	MW307D
10006	576834.19	664995.42	MW307B
10007	576865.8	665111.5	SG309
10008	577219.27	664958.28	MW308B
10009	577226.88	664956.86	OW7
10010	577232.01	664957.61	OW8
10011	577351.6	664608.5	SG308
10012	577412.63	664601.13	MW212B
10013	577630.21	664517.21	MW211D
10014	578187.2	664579.6	SG307
10015	578779.4	665308.8	SG304
10016	577828.07	663790.78	MW304D
10017	577820.26	663783.92	MW304B
10018	577811.84	663775.97	MW304S
10019	576095.5	663395.5	SG310
10020	578178.2	661468.2	SG302
10021	577225.6	661614.9	SG301
10022	576043.52	662283.43	MW303S
10025	575864.75	661932.27	MW301D
10026	575869.26	661924.84	MW301B
10027	575873.45	661918.12	MW301S
10028	575881.63	661897.19	PZ-102
10029	576421.30	662444.87	MW202B
10030	576413.76	662441.03	MW202D
10031	576406.96	662438.21	MW202S
10032	576408.09	662427.01	PZ-103
10033	576660.34	662516.98	MW302S
10035	577630.65	663064.13	MW208S
10036	578391.9	663134.8	SG303
10037	578652.2	666399.6	SG305
10038	578710.01	666098.24	Chiseled Square at bridge
10041	577696.0	665778.8	SG306
10042	575290.93	664321.11	clf cor
10043	575252.47	664292.85	clf pol
11000	575284.84	664230.86	Base spike set

		Casing or other	PVC
Description		Elevation	Elevation
		(not pvc)	
MW304S		117.64	117.37
MW 304B		117.54	117.43
MW304D		117.65	117.58
SG-304 top green metal		112.76	
SG-305 top green metal		108.60	
SG-306 top green metal		110.19	
SG-309 top green metal		111.53	
MW307B		118.24	118.06
MW307D		118.06	117.94
MW307S		118.66	118.56
MW305D		120.83	120.39
MW305S		121.08	120.79
MW207B top of metal casing		116.83	
P-2 top of pvc (does not have metal casing)		114.81	
PZ-108		117.00	116.74
OW-10		116.22	116.09
SG-303 top green metal		113.40	
MW-306S		120.07	119.48
P-18 top of pvc (no metal casing)			125.57
MW-308B		116.27	116.08
OW-7		115.84	115.71
OW-8		115.99	115.76
MW-212B		114.63	
MW-211B		114.67	114.53
MW-211D top of metal casing		114.46	
SG-308 top of green metal		112.58	
SG-307-top of ruler		110.74	
SG-307 top of green metal		110.04	
PZ-102 top metal casing		123.66	
MW301B		123.91	123.75
MW301S		123.75	123.53
MW301D		123.86	123.64
MW303S		116.56	116.34
MW202B rim (not casing)		115.66	
MW202B		115.43	115.23
MW202D rim (not casing)		115.49	
MW202D		115.24	115.12
MW202S rim (not casing)		115.68	
MW202S		115.50	115.35
PZ-103 rim (not casing)		115.51	
PZ-103		115.32	115.19
MW203S		116.81	116.56
MW203D		116.81	116.65
MW302S		117.80	117.72
SG302 top green metal (ruler 0.32 ft. above)		114.92	
SG-310 top of ruler		114.50	
SG-310 top of green metal		114.83	
OW33		115.35	114.88
OW32		115.35	115.00

SG301 top of green metal		115.64	
SG-301 top of ruler		114.30	
SG301 water elevation		112.72	

Description	+	HI	IFS	-	Elevation	Adjusted Elevation	Elevation Record		Elevation Delta Record to field	
PZ-102 top metal casing	1.893	125.553			123.66		123.66		0	
MW301B top metal casing		125.553	1.644		123.91					
MW301B top of pvc		125.553	1.799		123.75					
MW301S top of metal casing		125.553	1.8		123.75					
MW301S top of pvc		125.553	2.019		123.53					
MW301D top of metal casing		125.553	1.696		123.86					
MW301D top of pvc		125.553	1.918		123.64					
Cor retwall at yellow ladder at doc	1.564	122.291		4.826	120.73					
MW303S top of pvc		122.291	5.955		116.34					
MW303S top of metal casing	5.087	121.647		5.731	116.56					
MW202B rim		121.647	5.989		115.66					
MW202B top of metal casing		121.647	6.219		115.43					
MW202B top of pvc		121.647	6.415		115.23					
MW202D rim		121.647	6.158		115.49					
MW202D top of pvc casing		121.647	6.407		115.24					
MW202D top of pvc casing		121.647	6.525		115.12					
MW202S rim		121.647	5.972		115.68					
MW202Stop of metal casing		121.647	6.15		115.5					
MW202S top of pvc		121.647	6.293		115.35					
PZ-103 rim		121.647	6.138		115.51					
PZ-103 top of metal casing		121.647	6.331		115.32					
PZ-103 top of pvc		121.647	6.455		115.19					
PZ-103 rim	6.059	121.568		6.138	115.51					
MW203S top of metal casing (existing)		121.568	4.761		116.81		116.83		-0.02	
MW203D top of metal casing (existing)		121.568	4.754		116.81		116.88		-0.07	
MW203S top of pvc		121.568	5.01		116.56					
MW203D top of pvc		121.568	4.914		116.65					
Top of rock "m"	5.584	120.754		6.398	115.17					
MW302S top of metal casing		120.754	2.959		117.8					
MW302S top of pvc		120.754	3.035		117.72					
Cor conc block at entrance to coo	2.495	120.195		3.054	117.7					
high pt on water gate	6.373	121.251		5.317	114.88					
southwest corner catch basin rim	5.067	120.766		5.552	115.7					

top of guy wire at 100 iron horse p		5.086	122.436		3.416	117.35					
top spindle at main entrance to pa		1.674	122.003		2.107	120.33					
Edge pavement near upole 30 on		6.103	122.201		5.905	116.1					
SG302 top green metal ruler 0.32 ft. above			122.201	7.285		114.92					
left bomo at bridge		1.939	122.061		2.079	120.12					
Edge pavement near upole 30 on		5.07	121.167		5.964	116.1					
southeast cor conc fnd of brick sig		4.797	122.563		3.401	117.77					
south corner of catch basing near		5.652	121.362		6.853	115.71					
top rock a		5.497	120.784		6.075	115.29					
P-2 top of pvc		5.774	120.588		5.97	114.81					
top rock a		5.766	121.05		5.304	115.28					
high pt water gate z		5.132	120.02		6.162	114.89					
corner of conrete block g		3.262	120.973		2.309	117.71					
smh rim a		4.741	120.594		5.12	115.85					
top rr track h		5.915	121.588		4.921	115.67					
SG-310 top of ruler			121.588	7.09		114.5					
SG-310 top of green metal		6.554	121.38		6.762	114.83					
top rr track h		5.268	120.944		5.704	115.68					
smh rim a		5.098	120.954		5.088	115.86					
corner of concrete block g		3.222	120.949		3.227	117.73					
top of rock m		6.022	121.219		5.752	115.2					
PZ-103 Rim		5.853	121.382		5.69	115.53					
Top of column pedastal 6 cols fro		4.651	123.255		2.778	118.6					
top of rock l		6.352	126.502		3.105	120.15					
PZ-102 top metal casing					2.828	123.67		123.66		0.01	
southwest corner of catch basin ri		5.261	120.96			115.7					
OW33 top of metal casing			120.96	5.615		115.35					
OW33 top of pvc			120.96	6.085		114.88					
OW32 top of metal casing			120.96	5.608		115.35					
OW32 top of pvc			120.96	5.963		115					

top of guywire tie at 100 iron horse			3.044	120.394			117.35					
SG301 top of green metal				120.394	4.759		115.64					
SG-301 top of ruler				120.394	6.099		114.3					
SG301 water elevation				120.394	7.679		112.72					

Description	Loop 2				Assumed	Adjusted				
	+	H.I.	IFS	-	ELEV.					Turn No.
SmH Rim A	5.199	121.052			115.853	115.85				
round cb rim high pt	5.803	120.827		6.028	115.024	115.03				1
top rock	5.452	120.326		5.953	114.874	114.88				2
top rock	4.955	120.236		5.045	115.281	115.29	115.29			3
MW304S top metal Casing		120.236	2.607		117.629	117.64				3
MW304S top pvc		120.236	2.877		117.359	117.37				3
MW 304B top metal casing		120.236	2.708		117.528	117.54				3
MW 304B top pvc		120.236	2.812		117.424	117.43				3
MW304D top metal casing		120.236	2.59		117.646	117.65				3
MW304D top pvc		120.236	2.661		117.575	117.58				3
MW304S top metal casing	2.277	119.908		2.605	117.631	117.64				4
top nut on track at rd crossing	3.742	117.624		6.026	113.882	113.89				5
top switch on track labeld 20-b	3.01	115.242		5.392	112.232	112.25				6
top bolt on rr track	4.746	115.437		4.551	110.691	110.71				7
top rr spike on track	5.111	115.214		5.334	110.103	110.12				8
SG-304 top green metal		115.214	2.478		112.736	112.76				8
Top RR spike	4.282	114.955		4.541	110.673	110.69				9
Top RR track	6.107	118.156		2.906	112.049	112.07				10
Top rock at gun club	8.367	125.707		0.816	117.34	117.37				11
Top rock	4.95	121.812		8.845	116.862	116.89				12
Top stump near bridge	0.519	113.89		8.441	113.371	113.40				13
top rock	2.22	110.909		5.201	108.689	108.72				14
SG-305 top green metal	2.21	110.776		2.343	108.566	108.60				15
top rock at phragmites	8.394	117.073		2.097	108.679	108.72				16
on ground	8.386	122.413		3.046	114.027	114.07				17
on ground	7.711	128.71		1.414	120.999	121.04				18
top guard rail a	0.163	119.702		9.171	119.539	119.59				19
top guard rail b	7.816	122.066		5.452	114.25	114.30				20
top guard rail c near sg-306	3.853	124.637		1.282	120.784	120.84				21
top stick	0.088	117.678		7.047	117.59	117.64				22
SG-306 top green metal	7.463	117.598		7.543	110.135	110.19				23
top stick	6.637	124.227		0.008	117.59	117.65				24
top guard rail c near sg-306	4.429	125.213		3.443	120.784	120.84				25
top spinkdle - hydrant at pond/tomahawk	4.881	124.732		5.362	119.851	119.91				26
top bit at trail/pond street	3.598	122.677		5.653	119.079	119.14				27

ground		3.572	118.063		8.186	114.491	114.56				28
SG-309 top green metal		7.435	118.899		6.599	111.464	111.53				29
MW307B top metal casing			118.899	0.729		118.17	118.24				29
MW307B top pvc			118.899	0.91		117.989	118.06				29
MW307D top metal casing			118.899	0.914		117.985	118.06				29
MW307D top pvc			118.899	1.033		117.866	117.94				29
MW307S top pvc			118.899	0.41		118.489	118.56				29
MW307S top metal casing		12.875	131.46		0.314	118.585	118.66				30
ground at orange plastic		2.132	132.095		1.497	129.963	130.04				31
top rock S		0.873	124.104		8.864	123.231	123.31				32
MW305D top of metal casing			124.104	3.273		120.831	120.83				
MW305D top of pvc			124.104	3.714		120.39	120.39				
MW305S top of pvc			124.104	3.318		120.786	120.79				
MW305S top of metal casing		6.063	127.062		3.105	120.999	121.08				33
top rr tracks rr spike		3.828	119.327		11.563	115.499	115.58				34
MW207B top of metal casing			119.327	2.494		116.833	116.83		116.99	-0.16	
top bolt on rr tracks		5.141	120.179		4.289	115.038	115.12				35
top concrete		5.793	121.178		4.794	115.385	115.47				36
SMH A rim					5.417	115.76	115.85				37
		Loop 3									
P-2 top of pvc		5.317	120.131			114.814	114.814				0 Adjusted va
top rock x		5.274	119.91		5.495	114.636	114.639				1
top rr tie		4.882	119.313		5.479	114.431	114.437				2
PZ-108 top metal casing existing			119.313	2.316		116.997	117.003		117.04	-0.04	2
PZ-108 top of pvc			119.313	2.582		116.731	116.737		116.75	-0.01	2
OW-10 top of pvc			119.313	3.225		116.088	116.094		115.94	0.15	2
OW-10 top of metal casing		3.728	119.935		3.106	116.207	116.216		116.06	0.16	3
SG-303 top green metal		6.028	119.411		6.552	113.383	113.395				4
OW-10 top of metal casing		3.299	119.482		3.228	116.183	116.198				5
top rr tie		5.39	119.798		5.074	114.408	114.426				6
top rock x		5.241	119.854		5.185	114.613	114.634				7
P-s top of pvc					5.064	114.79	114.814				8

		loop 4									
top rock "s"		8.792	132.1008			123.31					
top rock "t" at gate		3.653	131.5348		4.219	127.8818					
MW-306S top of pvc			131.5348	12.053		119.4818					
MW-306S top of metal casing		11.326	131.3968		11.464	120.0708					
Ground m		1.325	129.5138		3.208	128.1888					
P-18 top of pvc (no metal casing)		3.883	129.4518		3.945	125.5688					
Ground m		4.982	133.1658		1.268	128.1838					
Top rock t		3.944	131.8018		5.308	127.8578					
Ground		3.625	129.1948		6.232	125.5698					
top rock "s"					5.886	123.3088					
		loop 5									
top rock "s"		8.459	131.7678			123.309	123.309				0
top rock "j"		4.126	128.2898		7.604	124.1638	124.169				1
MW-308B top of metal casing			128.2898	12.03		116.2598	116.265				1
MW-308B top of pvc			128.2898	12.216		116.0738	116.079				1
OW-7 top of metal casing			128.2898	12.451		115.8388	115.844				1
OW-7 top of pvc			128.2898	12.581		115.7088	115.714				1
OW-8 top of pvc			128.2898	12.538		115.7518	115.757				1
OW-8 top of metal casing		5.303	121.2828		12.31	115.9798	115.991				2
MW-212B top of metal casing (existing rec		3.421	118.0388		6.665	114.6178	114.635		114.45	0.18	3
MW-211B top of metal casing (existing)			118.0388	3.386		114.6528	114.670		114.74	-0.07	3
MW-211B top of pvc		3.408	117.9178		3.529	114.5098	114.532		114.59	-0.06	4
MW-211D top of metal casing			117.9178	3.485		114.4328	114.455		114.51	-0.05	4
top of ribbed pipe in gravel road		7.424	121.3068		4.035	113.8828	113.911				5
top of rr tracks		4.723	121.4478		4.582	116.7248	116.758				6
MW-304S top of metal casing					3.846	117.6018	117.641				7 see loop 2
		loop 6									
MW 212 B top of metal casing		2.864	117.4986			114.635					
SG-308 top of green metal		4.796	117.3766		4.918	112.5806					
MW 212 B top of metal casing					2.74	114.6366					

		loop 7								
top of switch 20-b		5.518	117.7646			112.25				
SG-307-top of ruler			117.7646	7.027		110.7376				
SG-307 top of green metal		7.674	117.7186		7.72	110.0446				
top of switch 20-b					5.472	112.2466				

Top of stump near bridge	12.79	126.1926			113.40
Ground	11.575	136.8656		0.902	125.2906
Chiseled square at northeast corner of bridg	1.493	135.8696		2.489	134.3766
top of guard rail h	0.514	126.4656		9.918	125.9516
top of guard rail A		126.4656	6.9		119.5656
Bomo on hydrant at entrance to pumping st	0.845	118.9456		8.365	118.1006
top of guard rail B	8.391	122.7596		4.577	114.3686
Bomo over main outlet		122.7596	2.106		120.6536
Top of guard rail C				1.86	120.8996

06025

4-28-06 | Iron Horse Park | BM to CAN

Loop 1

	+	HI	IFS	−	Elev
	1.893	101.893			100.00
			1.644		
			1.799		
			1.800		
			2.019		
			1.696		
			1.918		
	1.564	98.631		4.826	97.067
			5.955	~~5.731~~	
BM	5.087	97.987		5.731	92.900
			5.989		
			6.219		
			6.415		
			6.158		
			6.407		
			6.525		
			5.972		
			6.150		
			6.293		
			6.138		
			6.331		
			6.455		
				6.138	91.849

Sunny 60 06025

Rec. Elev 123.66

Assumed Top metal Casing PZ-102 Existing
MW 301 B " "
" " PVC
MW 301 S Metal Casing
" " " PVC
MW 301 D Metal Casing
" " " PVC
Cor Retwall @ yellow Ladder @ Loading Dock
MW303S PVC
MW303S Metal Casing
MW202B Rim
MW202B metal Casing
MW202B PVC
MW202D Rim
MW202D PVC Casing
MW202D PVC
MW 202S Rim
MW 202S Metal Casing
MW 202S PVC
PZ-103 Rim
PZ-103 Metal Casing
PZ 103 PVC
PZ-103 Rim

06025

	+	HI	IFS	−	Elev
Alternate +	6.059	97.908	4.761		
			4.754		
			5.010		
			4.914		
	5.584			6.398	91.510
	~~5.584~~		2.959		
			3.035		
	2.495	96.535		3.054	94.04
	6.373	97.591		5.317	91.218
BM 5.067	5.261	97.106		5.552	92.039
		97.300	5.615		91.685
			6.085		91.215
			5.608		91.692
			5.963		91.337
5.086	3.044	98.776		3.416	93.69
		96.784	1.759		91.975
			6.099		90.635
			7.679		89.055
1.674	98.343			2.107	96.669
6.103	98.541			5.905	92.438
			7.285		91.256
1.939	98.401			2.079	96.462
5.070	97.507			5.964	92.437

Forgot to write down mink-shot - Re-Run

06025

MW 203-S Metal Casing
MW 203-D Metal Casing } existing
MW 203-S PVC
MW 203-D PVC
Top of Rock "M"
MW 302-S metal Casing 2.11 To Ground
MW 302-S PVC
Corner Concrete block "G" @ Entrance to Cooperative Research Supply Access St.
TP High Pt water Gate I
TP South Corner Catch Basin Rim Near Flag @ Sprout Creek
OW 33 metal Casing
OW 33 PVC } note different HI for shots
OW 32 metal Casing
OW 32 PVC
TP Top of guy wire tie @ 100 Iron horse Park
SG-301 Top Green metal
SG-301 Top Ruler } note different HI for shots
SG-301 Water Elevation
Top Single Ramp @ Main Entrance To Iron horse Park
TP Edge Pavement Near pole 30 on High St.
SG-302 Top Green Metal Ruler 0.32 above
TP left Bandee Bridge
TP Edge Pavement Near pole 30 on high St.

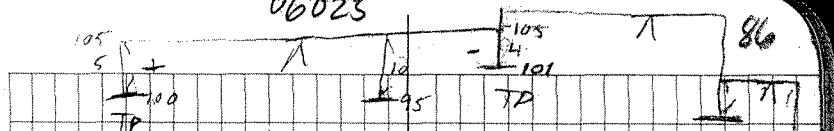
06025

+	HI	IFS	−	Elev
4.797	98.903		3.401	94.106
5.652	97.702		6.853	92.050
5.497	97.124		6.075	91.627
5.774	96.928		5.970	91.154
5.766	97.390		5.304	91.624
5.132	96.360		6.162	91.228
3.262	97.313		2.309	94.051
4.741	96.934		5.120	92.193
5.915	97.928		4.921	92.013
		7.090	~~6.762~~	90.838
6.554	97.720		6.762	91.166
5.268	97.284		5.704	92.016
5.098	97.294		5.088	92.196
3.222	97.289		3.227	94.067
6.022	97.559		5.752	91.537
5.853	97.722		5.690	91.869
4.651	99.595		2.778	94.944
6.352	102.842		3.105	96.490
			2.828	100.014

0.014 Closure error / 30 Turns

0.00046667 Per Turn

06025



TP SE Cor Conc Foundation Pad of Back entrance sign

TP South Corner of Catch Basin Near Flags @ Spincraft

TP Top Rock A

P-2 Top of PVC Adj = 91.146

TP Top Rock A

TP High pt water GATE Z

TP Corner of Concrete Block "G"

TP SMH Rim "A" (92.184) Adjusted

TP Top RR Track "H"

SG-310 Top of Roler

SG-310 Top of metal Casing

TP Top RR Track "H"

TP SMH Rim "A"

TP Corner of Concrete block "G"

TP Top of Rock "M"

92-103 metal Casing Rim

TP Top of Column Pedestal 6 columns From North

TP Top of Rock "L"

P2-102 END OF Loop

END

06025

LOOP 2

+	HI	IFS	-	Elev	
5.199	97.383			92.184	~~SMH Rim "A"~~
5.803	97.158		6.028	91.355	SMH Rim A
5.452	96.657		5.953	91.205	Round Catch Basin Rim High Point
4.955	96.567		5.045	91.612	Top Rock
		2.607			Top Rock
		2.877			MW 304S Metal Casing
		2.708			MW 304S PVC
		2.812			MW 304B Metal Casing
		2.590			MW 304B PVC
		2.661			MW 304D Metal Casing
					MW 304D PVC
2.277	96.239		2.605	93.962	MW 304S Metal Casing
3.742	93.955	90.213	~~[illegible]~~	6.026	Top ~~Gac~~ Nut on Track @ Rd Crossing
3.010	91.573		5.392	88.563	Top Switch @ Track 20-B
4.746	91.768		4.551	87.022	Top bolt on RR Track
5.111	91.545		5.334	86.434	Top RR spike on Track
		2.478	~~[illegible]~~	89.067	~~SG-304~~ ? ~~SG-307~~ SG-304
4.282	91.286		4.541	87.004	Top RR spike
6.107	94.487		2.906	88.380	Top RR Steel
8.367	102.038		6.816	93.671	Top Rock @ Gun Club
4.950	98.143		8.845	93.193	~~left Bomo near Chiseled sq.~~ Top Rock
0.519	90.221		8.441	89.702	Top Stump near bridge
2.220	87.240		5.201	85.020	Top Rock
2.210	87.107		2.343	84.897	SG-~~304~~ 305

Date 5-2-06

BM

8.394	93.404		2.097	85.010
8.386	98.774		3.046	90.358
7.711	105.041		1.414	97.330
0.163	96.033		9.171	95.870
7.816	99.297		4.552	91.481
3.853	101.868		1.282	98.015
0.088	94.909		7.047	94.821
7.463	94.829		7.543	87.366
6.637	101.458		0.008	94.821
4.429	102.444		3.443	98.015
4.881	101.963		5.362	97.082
3.598	99.908		5.653	96.310
3.572	95.294		8.186	91.722
7.435	~~96.130~~ 95.337		6.599	88.695
		0.729		~~95.401~~
		0.910		~~95.220~~
		0.914		~~95.216~~
		1.033		95.097
		0.410		95.720
12.875	~~108.091~~ 107.898 / 108.533		0.314	~~95.816~~
2.132	~~109.326~~		1.497	~~107.194~~
0.873	~~101.335~~ 100.542		8.864	~~100.462~~ 98.062
		3.273		~~97.269~~
		3.714		~~96.828~~ 97.621

Date 5-4-06

B1

Rock @ Phragmites

Ground

Top ~~Stone~~ ~~[redacted]~~ ORND

Top Guard Rail A

Top " " B

Top Guard Rail C

Top Stick

Top SG-306

Top Stick

Top GR C

Top Spindle — Hydrant @ Pond / Tomahawk

Top Bit @ Trail / Pond

Ground

Top metal SG-309

94.608	MW307 B	metal
94.427	MW307 B	PVC
94.423	MW307 D	metal
94.304	MW307 D	PVC
94.927	MW307 S	PVC
95.023	MW307S	Metal Casing
106.401	Ground @ orang~	
99.669	Top Rock "S"	
97.269	MW 305 D	metal
96.828	MW 305 D	AVC

06025		IFs	—	El
	103.500	3.318		97.224
6.063	~~104.295~~ 95.765		3.105	~~98.230~~
3.828	~~96.558~~		11.563	~~92.730~~
	96.617	2.494		
5.141	~~97.410~~		4.289	~~92.269~~
5.793	~~98.409~~ 97.616		4.794	~~92.616~~
			5.417	~~92.992~~
5.317	96.463			91.146
5.274	96.242		5.495	90.968
4.882	95.645		5.479	90.763
		2.316		93.329
		2.582		93.063
		3.225	~~3.367~~	92.420
3.728	96.267		3.106	92.539
6.028	95.743		6.552	89.715
3.299	95.814		3.228	92.515
5.390	96.130		5.074	90.740
5.241	96.186		5.185	90.945
			5.064	91.122
39.159	✓			
			39.183	✓
		Closure error	0.024	

Loop 3

B

06025

	MW 305S PVC
97.437	MW 305S Metal Casing
91.937	Top RR Tracks RR Spike
93.271	MW 2078 Metal Casing (Existing)
91.476	Top Bolt on RR Tracks
91.823	Top Concrete
92.199	SMH "A" — END OF Big Loop

0.808 Closure Error

	P-2 Top PVC (See p. 86)
	Top Rock "X"
	Top RR TIE
	P2-108 Top Metal Casing } existing
	P2-108 PVC
	OW-10 PVC } existing
	OW-10 Metal Casing
	SG-303 metal (top)
	OW-10 Metal Casing
	Top RR TIE
	Top Rock "X"
	P-2 Top PVC end Loop

06025 RFS

	Loop 4				
8.792	108.461			99.669	Top Rock "S" See pg 90
3.653	107.895		4.219	104.242	Top Rock "T" at Gate
	107.895	12.053		95.842	MW 306 S PVC
11.326	107.757		11.464	96.431	MW 306 S metal Casing
1.325	105.874		3.208	104.549	GROUND M
3.883	105.812		3.945	101.929	P-18 Top PVC (no metal Casing)
4.982	109.526		1.268	104.544	Ground M
3.944	108.162		5.308	104.218	Top Rock "T"
3.625	105.555		6.232	101.930	Ground
41.530			5.886	99.669	Top Rock "S" END OF LOOP pg 90
			41.530		
Loop 5					
8.459	108.128			99.669	Top Rock "S" See pg 90.
4.126	104.650		7.604	100.524	Top Rock "J"
		12.030			MW 308 B metal Casing
		12.216			MW 308 B PVC
		12.451			OW-7 metal Casing
		12.581			OW-7 PVC
		12.538			OW-8 PVC
5.303	97.643		12.310	92.340	OW-8 Metal Casing
3.421	94.399		6.665	90.978	Receiver = 114.45 Top Metal Casing 212-B (existing) PVC down 0.1±
		3.386			existing MW-211 B Casing Existing
3.408	94.278		3.529	90.870	existing MW 211 B PVC
		3.485			Existing MW 211-D metal Casing

06025

7.424	97.667	4.035	90.243
4.723	97.808	4.582	93.085
		3.846	93.962
36.864			
		42.571	

06025

Top Ribbed Pipe/Coil Spring
Top RR Tracks
MW 304S metal Casing
end of interior loop (See pg 88)

Top of Stump Near Bridge (pg 88)

06025

" "	LOOP6			
2.864	93,842			90.978
4.796	93.720		4.918	88.924
			2.740	90.980
7.660			7.658	
LOOP 7				
5,518				
~~5.518~~		7.027		
7.674			7.720	
			5.472	
13.182			13.192	

06025

MW212B Metal Casing
SG-308 (308) Top of Metal
MW212B Metal Casing

Top Switch 20-B
SG-307 Top Rulen
SG-307 Top Green metal
Top of Switch 20-B

Notes
OW - COM 1987

200 Series Surveyed 1995

06025

5-9-06 Trying to find bust in Loop 2

2.515	113.135			110.62
0.602	102.130		11.607	101.528
12.790	102.429		12.491	89.639
11.575	113.102		0.902	101.527
			2.489	110.613

Using V&B Total Station

	HI	Δelev	Rod	Elev.
	114.899 avg	-25.10	5.0	84.836
		-25.01	5.0	
	114.899	-20.26	5.0	89.639
	114.883	+0.73	5.0	110.613

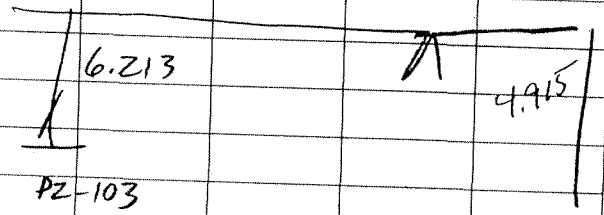
1.493	112.110			110.617
0.514	102.706		9.918	102.192
		6.900		~~105.206~~ 95.806
0.845	95.186		8.365	94.341
8.391	99.000		4.577	90.609
		2.106		96.894
			1.860	97.140

06025

Chiseled Square on Bridge on Pond
Ground
Stump (Top) (89.702) loop 2
Ground
Chiseled Square

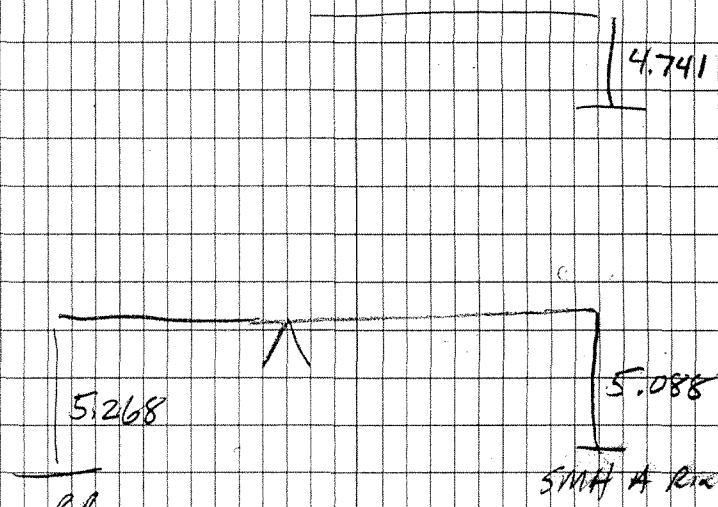
Description
SG-305 Direct (84.897 pg 88)
SG-305 Inverted
Top Stump
Chiseled Square.

Chiseled Square
Top guard rail "A"
Top guard rail A 95.870 8' from Loop 4/73
Pond Hydrant at entrance to Pumping Station
Top guard Rail B 91.481
Bolt over Main outlet
Top guard Rail C 98.015



$$\begin{array}{r} 6.213 \\ 4.915 \\ \hline 1.298 \end{array} \qquad \begin{array}{r} 6.213 \\ 4.915 \\ \hline 1.298 \end{array}$$

$$\begin{array}{r} 4.761 \\ 1.298 \\ \hline 6.059 \end{array}$$



$$\begin{array}{r} 5.268 \\ 5.088 \\ \hline .180 \end{array} \qquad \begin{array}{r} 4.741 \\ .180 \\ \hline 4.921 \end{array}$$

BENCHMARKS:

RR SPIKE 1.7' UP POLE #19 HIGH ST. ELEV=123.79
X-CUT IN ANCHOR BOLT E. SIDE OF HIGH TENSION TOWER #16-18 & 25 ELEV=117.27
CHISEL SQUARE @ SW CORNER OF TRAIN REPAIR SHOP ELEV=115.66
STK NEAR MW200, SOUTH OF PENN CULVERT & NORTH OF RAILROAD TRACKS ELEV=131.41
STK NEAR MW207, NORTHWEST OF B&M WASTEWATER LAGOONS ELEV=115.09
STK NEAR PZ108 & ASBESTOS LAGOONS ELEV=114.98
STK NEAR MW215, NORTHWEST OF B&M POND ELEV=110.10

NOTES:

STATE GRID NORTH & STATE COORDINATE SYSTEM
ORIGIN MASS GEODETIC DISK 16-E & 16-C OF 1927 DATUM
VERTICAL DATUM NGVD 1929

EXHIBIT

PLAN OF LAND

IN

BILLERICA, MASSACHUSETTS

PREPARED FOR

METCALF & EDDY

MAY 24, 2006

BY

BRYANT ASSOCIATES, INC.

160 NORTH WASHINGTON STREET, SUITE 700 BOSTON, MA 02114
TEL. 617-248-0300, FAX 617-248-0212
WWW.BRYANT-ENGRS.COM

0 100 200 400 800

1" = 200FT.

SURVEY DATE: JULY 11, 2005
CHECKED BY: CAV

DRAWN BY: CJB
APPROVED BY: GJH

H:\p\06025\survey\06025tankno100\dwg\06026_nad27_ngvd29.dwg 5/24/2006 11:37:47 AM EST

APPENDIX E

Photographs from the Site Investigation

Photo 1. OW-47/48

Photo 2. OW-47/48

Photo 3. OW-6

Photo 4. OW-41 (Destroyed)

Photo 5. Near historical P-12

Photo 6. MW-202B

Photo 7. MW-202D

Photo 8. PZ-103

Photo 9. MW-202S

Photo 10. MW-202S

Photo 11. Near old PZ-105A (destroyed)

Photo 12. OW-39/40 (bent)

Photo 13. PZ-115 – Product on Water Level Indicator Probe

Photo 14. PZ-115 – Product on Water Level Indicator Probe

Photo 15. PZ-115 – Product on Water Level Indicator Tape

Photo 16. PZ-115 – Product on Water Level Indicator Probe

APPENDIX F

Analytical Data

- Groundwater - VOCs/SVOCs/Pesticides/PCBs/Metals
- Subsurface Soil - TOC/Grain Size
- LNAPL -Petroleum Hydrocarbon Fingerprinting
- Asbestos Monitoring

Groundwater - VOCs/SVOCs/Pesticides/PCBs/Metals

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-01 NX 12/14/2005	MW-01A NX 12/15/2005	MW-01B NX 12/14/2005	MW-01C NX 12/14/2005	MW-202B NX 2/20/2006	MW-202D NX 2/20/2006	MW-202S NX 2/20/2006	MW-203B NX 12/15/2005	MW-203D NX 12/15/2005	MW-203S NX 12/15/2005	MW-204S NX 12/15/2005	MW-205S NX 12/15/2005	MW-206D NX 12/13/2005	MW-206S NX 12/13/2005	MW-207B NX 12/13/2005	MW-207B FD 12/13/2005
VOCs (ug/L)																
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.3	2.3
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.077 J	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
1,1,2-Trichloro-1,2,2-trifluoroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	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 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.6	1.6
1,1-Dichloroethene	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	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	4.6	4.5
1,2,3-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	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 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	0.3 J
1,2-Dichloroethane	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	0.095 J	0.5 U	0.5 U	0.5 U	0.5 U	2.6	2.6
1,2-Dichloroethene(total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	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	0.5 U	0.5 U	0.5 U	0.68	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	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
1,4-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.14 J
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1 J	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
Benzene, (1-methylethyl)-	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	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
Bromoform	0.53 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.62 U	0.5 UJ	0.73 U	0.63 U	0.61 U
Bromomethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Carbon Disulfide	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U	120	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.096 J	0.11 J
Chlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U
Chloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Chloroform	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
cis-1,2-Dichloroethene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J	0.35 J
cis-1,3-Dichloropropene	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 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	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 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.98 J	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
Methyl acetate	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	1.8 J	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.16 J	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.44 J	0.69	0.15 J	0.15 J
Methylcyclohexane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.25 J	0.5 U	0.86	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	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	0.065 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ
Tetrachloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	12	12
Toluene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	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 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	9.1	9
Trichlorofluoromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.64	0.77
Vinyl Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	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
SVOCs (ug/L)																
1,1'-Biphenyl	5 U	5.3 UJ	5.7 UJ	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 UJ	5.2 UJ	5.3 UJ	5.3 UJ	5 U	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2,2'-Oxybis(1-chloropropane)	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	20 U
2,4,6-Trichlorophenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	20 U
2,4-Dinitrotoluene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-01 NX 12/14/2005	MW-01A NX 12/15/2005	MW-01B NX 12/14/2005	MW-01C NX 12/14/2005	MW-202B NX 2/20/2006	MW-202D NX 2/20/2006	MW-202S NX 2/20/2006	MW-203B NX 12/15/2005	MW-203D NX 12/15/2005	MW-203S NX 12/15/2005	MW-204S NX 12/15/2005	MW-205S NX 12/15/2005	MW-206D NX 12/13/2005	MW-206S NX 12/13/2005	MW-207B NX 12/13/2005	MW-207B FD 12/13/2005
2-Chloronaphthalene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2-Chlorophenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Methylphenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
2-Nitroaniline	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	20 U
2-Nitrophenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	5 UJ	5.3 U	5.7 U	5 UJ	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 UJ	5 UJ	5 UJ	5 UJ
3-Nitroaniline	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	0.11 J	21 U	21 U	20 U	20 U	20 U	20 U
4-Bromophenyl-phenylether	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
4-Chloroaniline	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
4-Chlorophenyl-phenylether	5 U	5.3 UJ	5.7 UJ	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 UJ	5.2 UJ	5.3 UJ	5.3 UJ	5 U	5 U	5 U	5 U
4-Methylphenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
4-Nitroaniline	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	20 U
4-Nitrophenol	20 U	21 U	23 U	20 U	20 U	20 U	20 UJ	23 U	21 U	21 U	21 U	21 U	20 U	20 U	20 U	20 U
Acenaphthene	0.2 U	0.21 U	0.044 J	0.2 U	0.2 U	0.2 U	0.25 J	0.23 U	0.035 J	0.21 U	0.038 J	0.033 J	0.2 U	0.2 U	0.2 U	0.2 U
Acenaphthylene	0.012 J	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetophenone	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Atrazine	1 U	0.19 J	1.1 U	1 U	-- R	1.9 J	-- R	1.1 U	0.27 J	1 U	1.1 U	1.1 U	1 U	1 U	0.27 J	0.24 J
Benzaldehyde	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(k)fluoranthene	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
Bis(2-chloroethoxy)methane	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Bis(2-chloroethyl)ether	0.05 U	0.53 U	0.57 U	0.05 U	0.5 U	0.5 U	0.5 UJ	0.57 U	0.53 U	0.52 U	0.53 U	0.53 U	0.05 U	0.05 U	0.41 J	0.38 J
Bis(2-ethylhexyl)phthalate	0.2 U	2.1 UJ	2.3 UJ	0.2 U	2 UJ	2 UJ	2 UJ	2.3 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	0.2 U	0.2 U	0.2 U	0.2 U
Butylbenzylphthalate	5 U	5.3 U	5.7 U	5 U	5 U	5 U	0.5 J	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Caprolactam	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2 U	0.21 U	0.23 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibenz(a,h)anthracene	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzofuran	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Diethylphthalate	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Dimethylphthalate	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Di-n-butylphthalate	5 U	5.3 UJ	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Di-n-octylphthalate	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 UJ	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	0.13 J	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Fluorene	5 U	5.3 U	5.7 U	5 U	5 UJ	5 UJ	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Hexachlorobenzene	1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 UJ	1.1 U	1.1 U	1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Hexachloroethane	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U
Isophorone	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Naphthalene	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.24 J	0.23 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
Nitrobenzene	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Pentachlorophenol	1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 UJ	1.1 U	1.1 U	1 U	1.1 U	1.1 U	1 U	1 U	1 U	1 U
Phenanthrene	0.012 J	0.21 U	0.012 J	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.015 J	0.21 U	0.21 U	0.011 J	0.2 U	0.2 U	0.2 U	0.2 U
Phenol	5 U	5.3 U	5.7 U	5 U	5 U	5 U	5 UJ	5.7 U	5.3 U	5.2 U	5.3 U	5.3 U	5 U	5 U	5 U	5 U
Pyrene	0.2 U	0.21 U	0.23 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.23 U	0.31	0.21 U	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)																
4,4'-DDD	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	-- R	NA	-- R	NA	0.01 U	0.01 UJ	0.01 U
4,4'-DDE	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
4,4'-DDT	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
Aldrin	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
alpha-BHC	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 UJ	NA	0.005 U	0.005 UJ	0.005 U

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-01 NX 12/14/2005	MW-01A NX 12/15/2005	MW-01B NX 12/14/2005	MW-01C NX 12/14/2005	MW-202B NX 2/20/2006	MW-202D NX 2/20/2006	MW-202S NX 2/20/2006	MW-203B NX 12/15/2005	MW-203D NX 12/15/2005	MW-203S NX 12/15/2005	MW-204S NX 12/15/2005	MW-205S NX 12/15/2005	MW-206D NX 12/13/2005	MW-206S NX 12/13/2005	MW-207B NX 12/13/2005	MW-207B FD 12/13/2005
alpha-Chlordane	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
beta-BHC	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
delta-BHC	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
Dieldrin	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
Endosulfan I	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
Endosulfan II	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
Endosulfan Sulfate	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
Endrin	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 UJ	NA	0.01 UJ	0.01 UJ	0.01 UJ
Endrin Aldehyde	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
Endrin Ketone	NA	NA	NA	NA	NA	NA	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 U	NA	0.01 U	0.01 UJ	0.01 U
gamma-BHC(Lindane)	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 UJ	NA	0.005 U	0.005 UJ	0.005 U
gamma-Chlordane	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
Heptachlor	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	NA	0.005 U	0.005 UJ	0.005 U
Methoxychlor	NA	NA	NA	NA	NA	NA	0.05 UJ	NA	NA	0.05 UJ	NA	0.05 U	NA	0.05 U	0.05 UJ	0.05 U
Toxaphene	NA	NA	NA	NA	NA	NA	0.5 UJ	NA	NA	0.5 UJ	NA	0.5 U	NA	0.5 U	0.5 UJ	0.5 U
Aroclor-1016	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 UJ	NA	0.1 U	NA	0.2 U	0.2 U	0.2 U
Aroclor-1221	NA	NA	NA	NA	NA	NA	0.2 U	NA	NA	0.2 UJ	NA	0.2 U	NA	0.4 U	0.4 U	0.4 U
Aroclor-1232	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 UJ	NA	0.1 U	NA	0.2 U	0.2 U	0.2 U
Aroclor-1242	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 UJ	NA	0.1 U	NA	0.2 U	0.2 U	0.2 U
Aroclor-1248	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 UJ	NA	0.1 U	NA	0.2 U	0.2 U	0.2 U
Aroclor-1254	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 UJ	NA	0.1 U	NA	0.2 U	0.2 U	0.2 U
Aroclor-1260	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	0.1 UJ	NA	0.1 U	NA	0.2 U	0.2 U	0.2 U
Metals (ug/L)																
Aluminum	2660 J	5390 J	176	23.4 J	1380	70.2	88.4	52.2 J	42.3 J	22.6 J	171 J	50.0 UJ	50.0 UJ	21.2 J	500 UJ	2660 J
Antimony	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20.0 U	20.0 U
Arsenic	4.3	5.8	0.21 J	0.054 J	3.5	0.50 U	17.2	0.86	1.5	5.8	2.5	0.39 J	0.25 J	0.62	1.2 J	10.4
Barium	33.5	44.0	15.1	26.9	7.2 J	18.0	12.3	22.5	23.8	32.1	353	13.2	52.3	52.4	167	181
Beryllium	0.29 J	0.48 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.38 J	1.0 U	1.0 U	1.0 U	10.0 U	10.0 U
Cadmium	7.1	1.8	22.3	0.15 J	0.28 J	0.063 J	0.14 J	0.65 J	0.088 J	1.0 U	0.97 J	0.11 J	0.19 J	0.59 J	0.80 J	0.86 J
Calcium	14300	16800	17000	13400	13800	15800	19300	22400	30000	11700	126000	3120 J	29700	25800	1820000	1730000
Chromium	2.1	8.2	0.90 J	2.0 U	0.81 J	0.21 J	1.8 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20.0 U	20.0 U
Cobalt	1.8	2.0	1.2	1.0 U	1.0 U	1.0 U	1.0 U	0.51 J	0.92 J	2.8	224	0.59 J	1.8	0.68 J	10.0 U	10.0 U
Copper	24.0	11.7	14.6	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	4.4	7.6	2.0 U	2.0 U	20.0 U	20.0 U
Iron	10400 J	1990 J	20500	100 UJ	324 J	100 UJ	6360	30.6 J	568 J	20400 J	29800 J	280 J	100 UJ	226 UJ	100 UJ	2530 J
Lead	28.8	10.5	6.0	1.0 U	0.83 J	0.86 J	0.58 J	0.51 J	0.36 J	1.0 U	7.4	6.3	1.0 U	1.0 U	10.0 U	5.5 J
Magnesium	3740 J	3610 J	2950 J	1780 J	2290 J	2800 J	2830 J	3560 J	5900	2570 J	26200	5000 U	7030	5260	201000	191000
Manganese	287 J	93.9 J	290	106 J	81.8	12.2	220	29.7 J	256 J	1010 J	22400 J	397 J	57.8 J	532 J	365 J	497 J
Mercury	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.083 J	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.19 J	1.6 J
Nickel	7.9	6.6	9.2	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.1 U	1.4	41.1	4.7	2.1	3.2	10.0 U	10.0 U
Potassium	1720 J	2070 J	1920 J	1840 J	910 J	2160 J	3250 J	3440 J	3310 J	2920 J	8140	1080 J	5140	5010	39600	38600
Selenium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.61 J	5.0 U	5.0 U	5.0 U	50.0 U	50.0 U
Silver	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	20.7	26.2
Sodium	9660	18700	18500	11600	17600	16700	22300	12300	14600	38400	141000	32600	97200	97400	2960000	2950000
Thallium	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U
Vanadium	2.4 J	8.2 J	0.94 J	0.19 UJ	2.2 J	0.20 J	0.42 J	0.75 J	0.14 J	0.89 J	0.41 J	0.046 J	0.073 J	0.15 J	10.0 UJ	2.4 J
Zinc	88.2 J	23.4 J	69.2	4.1 UJ	7.0 U	2.4 U	4.4 U	29.7 J	8.2 UJ	4.6 UJ	21.1 J	8.1 UJ	9.8 UJ	3.1 UJ	27.5 UJ	34.5 UJ
1,4-Dioxanes (ug/L)																
1,4-Dioxane	NA	2.0 U	NA	2.0 U	NA	NA	NA	NA	2.9	2.0 U	NA	NA	2.0 U	NA	1.3 J	1.3 J

Notes
NX - Normal Field Sample
FD - Field Duplicate
NA - Not Analyzed

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-208B NX 12/16/2005	MW-208D NX 12/16/2005	MW-208S NX 12/16/2005	MW-209B NX 12/21/2005	MW-210S NX 12/20/2005	MW-211D NX 12/20/2005	MW-211S NX 12/20/2005	MW-212B NX 12/20/2005	MW-212D NX 12/20/2005	MW-212D FD 12/20/2005	MW-213B NX 12/19/2005	MW-213D NX 12/19/2005	MW-213S NX 12/19/2005	MW-213S FD 12/19/2005	MW-214S NX 12/19/2005	MW-215B NX 12/19/2005
VOCs (ug/L)																
1,1,1-Trichloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U
1,1-Dichloroethane	0.063 J	0.39 J	0.5 U	1.3	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.5 U	1.8	1.4	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	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	0.5 U	2.5	0.57 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U
1,2-Dichlorobenzene	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	0.5 U	0.62 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	1.7	0.5 U	0.5 U	21	0.5 U	0.5 U	0.5 U	1.6	0.5 U	0.5 U	4.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene(total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	2	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	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.5 UJ	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene, (1-methylethyl)-	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	0.62 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 UJ	2.6 UJ	0.5 U	0.5 U
Bromomethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	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	0.5 U	0.81 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	5.7	1.2	0.5 U	0.5 U	0.5 U	0.5 U	1.2	0.68	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	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	2.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	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	0.5 U	1.9	0.98	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U
Cyclohexane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.35 J	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	0.5 U
Dibromochloromethane	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U
Dichlorodifluoromethane	0.5 UJ	0.5 UJ	0.5 UJ	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	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl acetate	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	2.3	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	0.5 U	0.5 U	0.5 U
Methylcyclohexane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U
Trichloroethene	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	0.5 U	16	4.8	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
SVOCs (ug/L)																
1,1'-Biphenyl	5.2 UJ	5.4 UJ	5.6 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 UJ	5 UJ	5.8 UJ	5 UJ	5.3 UJ	5.7 UJ
1,2,4,5-Tetrachlorobenzene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2,2'-Oxybis(1-chloropropane)	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2,4,5-Trichlorophenol	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
2,4,6-Trichlorophenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2,4-Dichlorophenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2,4-Dimethylphenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2,4-Dinitrophenol	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
2,4-Dinitrotoluene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2,6-Dinitrotoluene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-208B NX 12/16/2005	MW-208D NX 12/16/2005	MW-208S NX 12/16/2005	MW-209B NX 12/21/2005	MW-210S NX 12/20/2005	MW-211D NX 12/20/2005	MW-211S NX 12/20/2005	MW-212B NX 12/20/2005	MW-212D NX 12/20/2005	MW-212D FD 12/20/2005	MW-213B NX 12/19/2005	MW-213D NX 12/19/2005	MW-213S NX 12/19/2005	MW-213S FD 12/19/2005	MW-214S NX 12/19/2005	MW-215B NX 12/19/2005
2-Chloronaphthalene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2-Chlorophenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2-Methylnaphthalene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 U	-- R	0.077 J	0.23 U
2-Methylphenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
2-Nitroaniline	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
2-Nitrophenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
3,3'-Dichlorobenzidine	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	-- R	-- R	5.3 U	5.7 U
3-Nitroaniline	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
4,6-Dinitro-2-methylphenol	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
4-Bromophenyl-phenylether	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
4-Chloro-3-methylphenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
4-Chloroaniline	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	-- R	-- R	5.3 U	5.7 U
4-Chlorophenyl-phenylether	5.2 UJ	5.4 UJ	5.6 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 UJ	5 UJ	5.8 UJ	5 UJ	5.3 UJ	5.7 UJ
4-Methylphenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
4-Nitroaniline	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
4-Nitrophenol	21 U	22 U	22 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	21 U	20 U	23 U	20 U	21 U	23 U
Acenaphthene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	0.94 J	-- R	1	0.23 U
Acenaphthylene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 UJ	5 UJ	0.015 J	0.23 U
Acetophenone	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Anthracene	5.2 U	5.4 U	5.6 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 U	5 UJ	0.76 J	0.72 J	0.49 J	5.7 U
Atrazine	1 U	1.1 U	1.1 U	-- R	5 U	5 U	5 U	5 U	5 U	5 U	1 U	5 U	5.8 U	5 U	0.36 J	1.1 U
Benzaldehyde	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	1.8 J	5 U	5.3 U	5.7 U
Benzo(a)anthracene	0.1 U	0.11 U	0.11 U	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	5.8 U	5 U	0.11 U	0.11 U
Benzo(a)pyrene	0.1 U	0.11 U	0.11 U	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	5.8 UJ	5 U	0.11 U	0.11 U
Benzo(b)fluoranthene	0.1 U	0.11 U	0.11 U	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	5.8 UJ	5 U	0.11 U	0.11 U
Benzo(g,h,i)perylene	0.035 J	0.074 J	0.066 J	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.024 J	0.2 UJ	5.8 UJ	5 U	0.033 J	0.036 J
Benzo(k)fluoranthene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 UJ	5 U	0.21 U	0.23 U
Bis(2-chloroethoxy)methane	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Bis(2-chloroethyl)ether	0.52 U	0.54 U	0.56 U	0.32 J	0.66 UJ	0.5 UJ	0.82 UJ	0.1 J	0.5 UJ	0.51 UJ	0.31 J	0.5 UJ	5.8 U	-- R	0.53 U	0.57 U
Bis(2-ethylhexyl)phthalate	2.1 UJ	2.2 UJ	2.2 UJ	0.5 UJ	2.6 UJ	2 UJ	3.3 UJ	2 UJ	2 UJ	1.9 J	2.1 UJ	2 UJ	5.8 U	5 U	2.1 UJ	2.3 UJ
Butylbenzylphthalate	5.2 UJ	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Caprolactam	5.2 UJ	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 U	5 U	0.21 U	0.23 U
Dibenz(a,h)anthracene	0.026 J	0.05 J	0.05 J	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.019 J	0.1 UJ	5.8 UJ	5 U	0.024 J	0.027 J
Dibenzofuran	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	0.93 J	0.87 J	5.3 U	5.7 U
Diethylphthalate	5.2 UJ	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Dimethylphthalate	5.2 UJ	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Di-n-butylphthalate	5.2 UJ	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Di-n-octylphthalate	5.2 UJ	5.4 U	5.6 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 U	5 UJ	5.8 UJ	5 UJ	5.3 U	5.7 U
Fluoranthene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	0.98 J	5.7 U
Fluorene	5.2 U	5.4 U	5.6 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.2 U	5 UJ	1.2 J	5 UJ	1.8 J	5.7 U
Hexachlorobenzene	1 U	1.1 U	1.1 U	1 UJ	1.3 UJ	1 UJ	1.6 UJ	1 UJ	1 UJ	1 UJ	1 U	1 UJ	5.8 U	5 U	1.1 U	1.1 U
Hexachlorobutadiene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Hexachlorocyclopentadiene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	-- R	-- R	5.3 U	5.7 U
Hexachloroethane	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Indeno(1,2,3-cd)pyrene	0.03 J	0.051 J	0.057 J	0.1 UJ	0.13 UJ	0.1 UJ	0.16 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.021 J	0.1 UJ	5.8 UJ	5 U	0.025 J	0.027 J
Isophorone	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Naphthalene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.065 J	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 U	-- R	0.2 U	0.23 U
Nitrobenzene	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
N-Nitroso-di-n-propylamine	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
N-Nitrosodiphenylamine	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	0.4 J	5.3 U	5.7 U
Pentachlorophenol	1 U	1.1 U	1.1 U	1 UJ	1.3 UJ	1 UJ	1.6 UJ	1 UJ	1 UJ	1 UJ	1 U	1 UJ	5.8 U	5 U	1.1 U	1.1 U
Phenanthrene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.017 J	0.2 UJ	0.33 J	0.31 J	2.1	0.016 J
Phenol	5.2 U	5.4 U	5.6 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2 U	5 U	5.8 U	5 U	5.3 U	5.7 U
Pyrene	0.21 U	0.22 U	0.22 U	0.2 UJ	0.26 UJ	0.2 UJ	0.33 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.21 U	0.2 UJ	5.8 U	0.12 J	0.46	0.23 U
Pesticides/PCBs (ug/L)																
4,4'-DDD	NA	NA	NA	NA	NA	NA	-- R	NA	NA	NA	NA	NA	-- R	-- R	-- R	NA
4,4'-DDE	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	-- R	-- R	0.01 UJ	NA
4,4'-DDT	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	-- R	0.013 J	0.01 UJ	NA
Aldrin	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
alpha-BHC	NA	NA	NA	NA	NA	NA	0.005 UJ	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-208B NX 12/16/2005	MW-208D NX 12/16/2005	MW-208S NX 12/16/2005	MW-209B NX 12/21/2005	MW-210S NX 12/20/2005	MW-211D NX 12/20/2005	MW-211S NX 12/20/2005	MW-212B NX 12/20/2005	MW-212D NX 12/20/2005	MW-212D FD 12/20/2005	MW-213B NX 12/19/2005	MW-213D NX 12/19/2005	MW-213S NX 12/19/2005	MW-213S FD 12/19/2005	MW-214S NX 12/19/2005	MW-215B NX 12/19/2005
alpha-Chlordane	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
beta-BHC	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
delta-BHC	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
Dieldrin	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	-- R	-- R	0.01 UJ	NA
Endosulfan I	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
Endosulfan II	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	0.016 J	-- R	0.01 UJ	NA
Endosulfan Sulfate	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	-- R	-- R	0.01 UJ	NA
Endrin	NA	NA	NA	NA	NA	NA	-- R	NA	NA	NA	NA	NA	-- R	-- R	0.01 UJ	NA
Endrin Aldehyde	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	-- R	-- R	0.01 UJ	NA
Endrin Ketone	NA	NA	NA	NA	NA	NA	0.01 U	NA	NA	NA	NA	NA	0.027 J	0.012 J	0.01 UJ	NA
gamma-BHC(Lindane)	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
gamma-Chlordane	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
Heptachlor	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	0.005 U	NA	NA	NA	NA	NA	-- R	-- R	0.005 UJ	NA
Methoxychlor	NA	NA	NA	NA	NA	NA	0.05 U	NA	NA	NA	NA	NA	-- R	-- R	0.05 UJ	NA
Toxaphene	NA	NA	NA	NA	NA	NA	0.5 U	NA	NA	NA	NA	NA	-- R	-- R	0.5 UJ	NA
Aroclor-1016	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	-- R	-- R	0.1 U	NA
Aroclor-1221	NA	NA	NA	NA	NA	NA	0.2 U	NA	NA	NA	NA	NA	-- R	-- R	0.2 U	NA
Aroclor-1232	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	-- R	-- R	0.1 U	NA
Aroclor-1242	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	-- R	-- R	0.1 U	NA
Aroclor-1248	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	-- R	-- R	0.1 U	NA
Aroclor-1254	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	-- R	-- R	0.1 U	NA
Aroclor-1260	NA	NA	NA	NA	NA	NA	0.1 U	NA	NA	NA	NA	NA	-- R	-- R	0.1 U	NA
Metals (ug/L)																
Aluminum	66.7	50.0 U	89.8	50.0 U	50.0 U	50.0 U	50.0 U	25.5 J	50.0 U	50.0 U	610	56.8	50.0 U	50.0 U	50.0 U	117
Antimony	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Arsenic	4.2	0.11 J	101	4.4	66.1	281	99.5	32.9	22.0	18.5	5.1	0.42 J	1.7	1.7	88.8	4.2
Barium	29.1	36.2	38.9	36.4	40.4	44.1	32.1	13.8	67.1	57.6	16.3	57.3	801	873	41.2	3.9 J
Beryllium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	1.0 U	0.10 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.084 J	0.074 J	1.2	1.0 U	1.0 U	0.075 J	1.0 U	0.088 J
Calcium	43200	20400	9980	62600	44900	80800	30700	55800	23400	24100	44100	39600	127000	124000	8000	16800
Chromium	0.31 J	2.0 U	0.77 J	2.0 U	0.24 J	2.0 U	0.38 J	2.0 U	0.20 J	0.22 J	5.1	0.17 J	4.1	4.0	0.083 J	0.27 J
Cobalt	5.0	0.73 J	3.5	2.6	3.5	10.6	1.6	8.0	2.8	2.4	7.7	2.7	0.75 J	0.73 J	2.3	1.0 U
Copper	2.0 UJ	2.0 UJ	2.9 UJ	0.52 J	2.0 UJ	2.0 U	2.0 UJ	3.0	2.0 UJ	2.0 UJ	11.2 J	2.2 UJ	3.5 UJ	3.4 UJ	2.0 UJ	2.0 UJ
Iron	276	100 U	21400	2250	21100	53800	37000	2560	4920	5290	2150	400	12200	11800	57400	100 U
Lead	0.37 J	1.0 UJ	1.9 J	1.0 U	1.0 UJ	1.0 U	1.0 UJ	0.37 J	0.41 J	0.34 J	17.3 J	0.32 J	3.3 J	3.4 J	0.36 J	0.37 J
Magnesium	8190	3050 J	1740 J	22600	4480 J	12000	3600 J	5420	3700 J	3840 J	6140	7280	24100	23400	1360 J	4040 J
Manganese	281	1690	1050	1290	2770	5140	1180	2770	1130	951	270	224	803	744	4550	30.7
Mercury	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ
Nickel	1.4 J	1.0 J	3.3 J	0.35 J	2.0 J	4.4	1.3 J	3.4	1.5 J	1.2 J	5.5 J	3.1 J	9.9 J	9.5 J	1.0 J	0.44 J
Potassium	3630 J	1560 J	2680 J	6020	6540 J	12600	5220 J	3290 J	3150 J	3350 J	3460 J	4500 J	22200 J	21400 J	878 J	2460 J
Selenium	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 UJ	0.18 J	5.0 UJ	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	2.6 J	2.7 J	5.0 UJ	5.0 UJ
Silver	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Sodium	17400	24000	13700	25500	11000	22800	4900 J	63500	71600	75300	54700	79200	208000	199000	8000	15900
Thallium	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vanadium	0.31 J	1.0 UJ	2.0 J	1.0 UJ	1.0 UJ	1.0 UJ	0.36 J	1.0 J	0.65 J	0.50 J	1.6 J	1.0 UJ	1.0 J	1.0 J	1.0 UJ	1.3 J
Zinc	4.6 J	2.0 U	8.3 J	1.2 J	2.0 U	1.9 J	2.0 U	5.2	3.9 U	2.6 U	32.9 J	2.2 U	32.4 J	30.0 J	86.3 J	9.6 J
1,4-Dioxanes (ug/L)																
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5 J	NA	NA	NA	NA	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
NA - Not Analyzed

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-301B NX 2/23/2006	MW-301D NX 2/23/2006	MW-301S NX 2/23/2006	MW-302S NX 2/20/2006	MW-303S NX 2/20/2006	MW-304B NX 2/21/2006	MW-304D NX 2/21/2006	MW-304D FD 2/21/2006	MW-304S NX 2/21/2006	MW-305D NX 2/21/2006	MW-305S NX 2/21/2006	MW-306S NX 2/23/2006	MW-307B NX 2/22/2006	MW-307D NX 2/22/2006	MW-307S NX 2/22/2006	MW-308B NX 2/22/2006
VOCs (ug/L)																
1,1,1-Trichloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.072 J
1,1,2,2-Tetrachloroethane	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	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	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	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.47 J	0.5 U	0.5 U	0.5 U	3.5 J	0.066 J	0.5 U	1	3.8	0.089 J	2.7
1,1-Dichloroethene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	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	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	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	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.5 UJ	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	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	0.52	0.5 U	0.5 U	0.5 U	0.95	0.5 U	0.38 J
1,2-Dichloroethane	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	4.8	0.5 U	0.5 U	23	11	0.5 U	8.5
1,2-Dichloroethene(total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	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	0.37 J	0.5 U	0.5 U	0.5 U	0.42 J	0.5 U	0.26 J
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.4	5 U	5 U
Benzene	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	0.29 J	0.5 U	0.5 U	0.5 U	0.5 U	6.6 J	0.2 J
Benzene, (1-methylethyl)-	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.27 J	0.057 J	0.5 U	0.5 U	0.26 J	0.5 U	0.5 U	0.25 J	0.5 U	0.5 U	1.4
Bromodichloromethane	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.53 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Bromoform	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.5 U	0.39 J	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.22 J	0.42 J	0.27 J
Chlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.74 U	1.5 U	0.5 U	0.5 U	0.5 U	1.4 U	0.5 U	0.53 U	0.5 U	4.5 J	0.57 U	0.5 U	2.5	0.5 U	0.5 U	7.2
Chloroform	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	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	1.3 J	0.5 U	0.5 U	0.5 U	1.2	0.22 J	7.1
cis-1,2-Dichloroethene	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	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.2 J	0.5 U
Cyclohexane	0.5 UJ	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.19 J
Dibromochloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.5 J	0.5 U
Ethylbenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1 J	0.5 U
Methyl acetate	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	0.5 U	0.21 J	3.4	0.5 U	0.5 U	0.5 U	0.95	1.1	0.5 U	0.38 J	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.27 J
Methylcyclohexane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.7 J	0.5 U
Methylene Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
Tetrachloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.34 J	0.34 J	0.085 J	0.5 U	1.6	0.5 U	0.5 U	0.26 J	0.5 U	0.26 J
Toluene	0.2 J	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U	0.47 J	0.44 J	0.5 U	0.058 J	0.5 U	0.5 U	0.078 J	0.5 U	0.25 J	0.083 J
trans-1,2-Dichloroethene	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	0.52 J	0.5 U	0.5 U	0.5 U	0.14 J	0.5 U	2.1
trans-1,3-Dichloropropene	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	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Trichloroethene	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	0.37 J	0.4 J	0.5 U	0.5 U	0.96	0.5 U	75
Trichlorofluoromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.66	0.74
Xylene (total)	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	250 J	0.5 U
SVOCs (ug/L)																
1,1'-Biphenyl	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-Oxybis(1-chloropropane)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-Trichlorophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.52 J	5 U	5 U	1.1 J	5 U
2,4-Dinitrophenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-301B NX 2/23/2006	MW-301D NX 2/23/2006	MW-301S NX 2/23/2006	MW-302S NX 2/20/2006	MW-303S NX 2/20/2006	MW-304B NX 2/21/2006	MW-304D NX 2/21/2006	MW-304D FD 2/21/2006	MW-304S NX 2/21/2006	MW-305D NX 2/21/2006	MW-305S NX 2/21/2006	MW-306S NX 2/23/2006	MW-307B NX 2/22/2006	MW-307D NX 2/22/2006	MW-307S NX 2/22/2006	MW-308B NX 2/22/2006
2-Chloronaphthalene	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Methylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.48 J	5 U	5 U	5 U	5 U
2-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-Nitrophenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Bromophenyl-phenylether	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloroaniline	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorophenyl-phenylether	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.97 J	5 U	5 U	5 U	5 U
4-Nitroaniline	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Nitrophenol	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acenaphthylene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetophenone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Anthracene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Atrazine	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R	-- R
Benzaldehyde	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(a)anthracene	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
Benzo(a)pyrene	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
Benzo(b)fluoranthene	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
Benzo(g,h,i)perylene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(k)fluoranthene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bis(2-chloroethoxy)methane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-chloroethyl)ether	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.058 J	0.5 U	0.5 U	0.5 U	0.55	0.059 J	0.5 U	0.53	0.7	0.5 U	0.66
Bis(2-ethylhexyl)phthalate	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Butylbenzylphthalate	5 U	5 UJ	5 U	5 U	5 U	0.19 J	5 UJ	5 U	5 UJ	0.71 J	5 U	5 U	5 U	5 U	5 U	5 U
Caprolactam	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
Dibenz(a,h)anthracene	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
Dibenzofuran	5 U	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Diethylphthalate	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dimethylphthalate	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	0.54 J	5 U	5 U	5 U	5 U
Di-n-butylphthalate	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-n-octylphthalate	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 U	0.58 J	5 U	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.64 J	5 U	5 U	5 U	5 U
Fluorene	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	0.56 J	5 UJ	5 UJ	5 UJ	5 UJ
Hexachlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	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
Isophorone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.028 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.53	0.2 U
Nitrobenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Phenanthrene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.049 J	0.2 U
Phenol	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)																
4,4'-DDD	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
4,4'-DDE	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
4,4'-DDT	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.0066 J	NA	NA	NA	NA	0.01 UJ
Aldrin	NA	NA	0.005 UJ	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
alpha-BHC	NA	NA	0.005 U	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	MW-301B NX 2/23/2006	MW-301D NX 2/23/2006	MW-301S NX 2/23/2006	MW-302S NX 2/20/2006	MW-303S NX 2/20/2006	MW-304B NX 2/21/2006	MW-304D NX 2/21/2006	MW-304D FD 2/21/2006	MW-304S NX 2/21/2006	MW-305D NX 2/21/2006	MW-305S NX 2/21/2006	MW-306S NX 2/23/2006	MW-307B NX 2/22/2006	MW-307D NX 2/22/2006	MW-307S NX 2/22/2006	MW-308B NX 2/22/2006
alpha-Chlordane	NA	NA	0.005 UJ	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
beta-BHC	NA	NA	0.005 U	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
delta-BHC	NA	NA	0.005 U	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.0054	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
Dieldrin	NA	NA	0.01 UJ	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.013	NA	NA	NA	NA	0.01 UJ
Endosulfan I	NA	NA	0.005 U	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
Endosulfan II	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
Endosulfan Sulfate	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
Endrin	NA	NA	0.01 UJ	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
Endrin Aldehyde	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
Endrin Ketone	NA	NA	0.01 U	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	NA	NA	0.01 UJ
gamma-BHC(Lindane)	NA	NA	0.005 UJ	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
gamma-Chlordane	NA	NA	0.005 U	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
Heptachlor	NA	NA	0.005 U	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
Heptachlor Epoxide	NA	NA	-- R	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	NA	NA	0.005 UJ
Methoxychlor	NA	NA	0.05 U	NA	NA	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	NA	NA	NA	NA	0.05 UJ
Toxaphene	NA	NA	0.5 U	NA	NA	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	NA	NA	NA	NA	0.5 UJ
Aroclor-1016	NA	NA	-- R	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	NA	NA	NA	NA	0.1 U
Aroclor-1221	NA	NA	0.2 U	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	NA	NA	NA	NA	0.2 U
Aroclor-1232	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	NA	NA	NA	NA	0.1 U
Aroclor-1242	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	NA	NA	NA	NA	0.1 U
Aroclor-1248	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	NA	NA	NA	NA	0.1 U
Aroclor-1254	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	NA	NA	NA	NA	0.1 U
Aroclor-1260	NA	NA	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 U	NA	NA	NA	NA	0.1 U
Metals (ug/L)																
Aluminum	3740	7070	46.4 J	275	77.6	11.2 J	153	149	50.0 U	25.7 J	55.8	13.3 J	149	42.9 J	74.9	87.5
Antimony	2.0 U	2.0 U	2.0 U	3.7 J	2.6 J	2.0 UJ	3.2 J	3.3 J	4.2 J	2.0 UJ	2.0 UJ	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
Arsenic	2.7	7.0	22.1	1.1	16.1	6.4	0.53	0.59	0.50 U	3.8	3.3	14.5	10.6	2.8	8.6	1.4
Barium	23.9	84.8	104	43.4	75.4	14.5	19.7	20.2	12.2	22.9	68.2	15.5	11.1	35.8	41.3	26.5
Beryllium	0.37 J	0.43 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	1.0 U	0.061 J	1.0 U	0.061 J	1.0 U	1.0 U	0.081 J	0.072 J	0.082 J	0.15 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.12 J
Calcium	9010	13500	58800	31200	26000	87000	13600	13900	6510	46100	97300	62400	14000	41300	86800	45900
Chromium	7.0	32.2	0.35 J	0.50 J	0.31 J	2.0 U	0.35 J	0.31 J	2.0 U	0.22 J	0.25 J	0.36 J	2.0 U	2.0 U	0.45 J	0.29 J
Cobalt	1.3	4.3	0.50 J	1.0 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U	2.0 U	2.7	0.23 J	1.0 U	4.5	1.3 U	3.1
Copper	3.7 U	9.8	2.0 U	2.7 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	2.5 U	2.1 U	2.0 U	3.1 U	2.0 U	2.7 U
Iron	1570	13300	15400	881	12100	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	645	100 UJ	100 UJ	161 J	100 UJ
Lead	2.8	4.3	1.0 U	2.5	7.9	0.16 J	0.37 J	0.33 J	1.0 U	1.0 U	1.0 U	1.0 U	0.13 J	1.0 U	0.12 J	0.15 J
Magnesium	2640 J	5200	6590	1040 J	2070 J	10900	2270 J	2330 J	1040 J	6030	4140 J	2010 J	4080 J	8530	4940 J	7890
Manganese	130	238	599	45.1	346	75.7	132	143	6.6	6440	1730	205	37.3	133	409	149
Mercury	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ
Nickel	4.1	10.9	1.0 UJ	1.9 U	1.0 U	2.2 U	1.4 U	1.4 U	1.0 U	4.6	2.8	1.0 UJ	1.0 U	3.6	11.8	3.9
Potassium	2060 J	6240	4300 J	1880 J	3130 J	9100 J	3220 J	3400 J	1110 J	7940 J	4800 J	2830 J	2720 J	5680 J	3820 J	6620 J
Selenium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.93 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 UJ
Sodium	22300	27900	15300	9470	15200	193000	17900	18400	5090	195000	22100	8640	26400	135000	7680	104000
Thallium	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vanadium	5.2	16.0	0.27 J	0.46 J	0.27 J	0.38 J	0.34 J	0.39 J	1.0 U	0.41 J	3.3 J	0.38 J	0.53 J	0.49 J	12.4	0.33 J
Zinc	11.2	24.2	2.0 U	10	24.3	2.0 U	2.6 U	4.8 U	62.2	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	3.6 U
1,4-Dioxanes (ug/L)																
1,4-Dioxane	NA	2 U	2 U	NA	NA	NA	2 U	2 U	NA	1.7 J	2.0 U	NA	NA	NA	NA	2

Notes
NX - Normal Field Sample
FD - Field Duplicate
NA - Not Analyzed

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	OW-01 NX 12/20/2005	OW-02 NX 12/20/2005	OW-07 NX 2/22/2006	OW-08 NX 2/22/2006	OW-09 NX 12/15/2005	OW-10 NX 12/15/2005	OW-12 NX 12/15/2005	OW-20 NX 12/21/2005	OW-25 NX 12/13/2005	OW-26 NX 12/13/2005	OW-35 NX 12/21/2005	OW-37 NX 12/21/2005	OW-38 NX 12/21/2005	OW-49 NX 12/14/2005	OW-50 NX 12/14/2005	OW-51 NX 12/14/2005
VOCs (ug/L)																
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	22	0.66	0.64	0.5 U	9.1	0.94	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
1,1-Dichloroethane	1.4	0.5 U	0.34 J	38	4.8	4.7	0.5 U	11	1.6	0.28 J	0.5 U	1.7	15	1.3	0.23 J	0.5 U
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.8 J	0.5 U	0.5 U	0.5 U	0.26 J	1.7	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	1.4	1.5	0.5 U	0.46 J	0.29 J	0.41 J	0.5 U	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U
1,2-Dichloroethane	0.74	0.5 U	0.54 U	2.7 U	2.6	2.6	0.5 U	0.66	1.3	0.5 U	0.5 U	0.47 J	0.5 U	5	0.5 U	0.5 U
1,2-Dichloroethene(total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.21 J	0.5 U	0.5 U	0.5 U	0.56	0.81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5 U	0.5 U	0.5 U	1.6	0.32 J	0.31 J	0.5 U	0.6	0.5 U	0.27 J	0.5 U	0.5 U	1.7	0.14 J	0.5 U	0.5 U
2-Butanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	59	0.5 U	0.5 U	0.37 J	0.26 J	0.5 U	0.5 U	0.5 U	0.5 U	0.63	0.5 U	0.5 U	0.5 U
Benzene, (1-methylethyl)-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.34 J	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
Bromochloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
Bromoform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.73 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	0.5 U	0.5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	7.8 J	0.5 U	0.5 U	0.5 U	0.56	37	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	46	0.86	0.87	0.5 U	0.5 U	0.17 J	0.41 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	0.5 U	0.5 U	1.6	0.58	0.5 U	0.5 U	0.5 U	3.2	0.5 U	0.5 U	0.5 U	0.11 J	0.48 J	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.87	0.85	0.24 J	0.5 UJ	0.6	0.31 J	0.5 U	0.5 U	0.5 U	2.4	0.5 U	0.5 U
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	8.6	0.5 U	0.5 U	0.5 UJ	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 UJ
Cyclohexane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	0.5 U	0.5 U	0.5 U	0.39 J	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	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.52	0.5 U	0.5 U	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U
Methyl acetate	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	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
Methyl tert-butyl ether	0.5 U	0.5 U	0.5 U	0.5 U	0.089 J	0.5 U	0.093 J	0.98	0.25 J	0.5 U	0.5 U	0.5 U	0.11 J	0.26 J	1.4	0.62
Methylcyclohexane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.76	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5 U	0.5 U	0.5 U	0.5 U	3.2	3.2	0.5 U	39	4.4	0.5 U	0.5 U	1.3	14	0.5 U	0.5 U	0.5 U
Toluene	0.5 U	0.5 U	0.5 U	0.52	0.5 U	0.5 U	0.32 J	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
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.58	0.5 U	0.093 J	0.076 J	0.5 U	0.21 J	0.5 U	0.096 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
Trichloroethene	1.5	0.5 U	4.6	0.13 J	2.2	2.2	0.5 U	7 J	3.2	0.08 J	0.5 U	0.28 J	2	7.8	0.18 J	0.5 U
Trichlorofluoromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	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	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Xylene (total)	0.5 U	0.5 U	0.5 U	4.8	0.5 U	0.5 U	1.7	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
SVOCs (ug/L)																
1,1'-Biphenyl	5 UJ	5 UJ	5 U	5 U	5.7 UJ	5.7 UJ	5.7 UJ	5 UJ	5 U	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-Oxybis(1-chloropropane)	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-Trichlorophenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrotoluene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	6.7	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	1.3 J	5 U	5 U	5 U	5 U

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	OW-01 NX 12/20/2005	OW-02 NX 12/20/2005	OW-07 NX 2/22/2006	OW-08 NX 2/22/2006	OW-09 NX 12/15/2005	OW-10 NX 12/15/2005	OW-12 NX 12/15/2005	OW-20 NX 12/21/2005	OW-25 NX 12/13/2005	OW-26 NX 12/13/2005	OW-35 NX 12/21/2005	OW-37 NX 12/21/2005	OW-38 NX 12/21/2005	OW-49 NX 12/14/2005	OW-50 NX 12/14/2005	OW-51 NX 12/14/2005
2-Chloronaphthalene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.23 U	0.23 U	1.2	0.1 J	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
2-Methylphenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitroaniline	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-Nitrophenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ	5 UJ
3-Nitroaniline	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	6.2 J	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Bromophenyl-phenylether	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-methylphenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloroaniline	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorophenyl-phenylether	5 UJ	5 UJ	5 U	5 U	5.7 UJ	5.7 UJ	5.7 UJ	5 UJ	5 U	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U
4-Methylphenol	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Nitrophenol	20 U	20 U	20 U	20 U	23 U	23 U	23 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.044 J	0.035 J	0.23 U	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Acenaphthylene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Acetophenone	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Anthracene	5 UJ	5 UJ	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Atrazine	5 U	5 UJ	-- R	-- R	1.1 U	0.13 J	1.1 U	-- R	0.28 J	1 U	-- R	-- R	-- R	1 U	1 U	1 U
Benzaldehyde	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	2 J	5 U	5 U	5 U	5 U
Benzo(a)anthracene	0.12 UJ	0.12 UJ	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.12 UJ	0.12 UJ	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	0.12 UJ	0.12 UJ	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.2 UJ	0.097 J	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Benzo(k)fluoranthene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Bis(2-chloroethoxy)methane	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-chloroethyl)ether	0.065 J	0.58 UJ	0.093 J	0.5 U	0.44 J	0.058 J	0.57 U	0.5 UJ	0.02 J	0.11 J	0.5 UJ	0.5 UJ	0.5 UJ	0.21 J	0.034 J	0.058 J
Bis(2-ethylhexyl)phthalate	2.4 UJ	2.3 UJ	2 UJ	2 UJ	2.3 UJ	2.3 UJ	2.3 UJ	0.5 UJ	0.2 U	0.38 U	0.5 UJ	0.5 UJ	0.5 UJ	0.2 U	0.2 U	0.23 U
Butylbenzylphthalate	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Caprolactam	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.24 UJ	0.23 UJ	0.2 UJ	0.2 UJ	0.23 U	0.23 U	0.23 U	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Dibenz(a,h)anthracene	0.12 UJ	0.12 UJ	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Dibenzofuran	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Diethylphthalate	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dimethylphthalate	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.015 J
Di-n-butylphthalate	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-n-octylphthalate	5 UJ	5 UJ	5 U	5 U	5.7 U	5.7 U	5.7 U	5 UJ	5 U	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U
Fluoranthene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	5 UJ	5 UJ	5 UJ	5 UJ	5.7 U	5.7 U	0.46 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobenzene	1.2 UJ	1.2 UJ	1 U	1 U	1.1 U	1.1 U	1.1 U	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-cd)pyrene	0.12 UJ	0.12 UJ	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U
Isophorone	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	0.77 J	5 U	5 U	5 U	5 U
Naphthalene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.23 U	0.23 U	1.1	0.2 UJ	0.2 U	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Nitrobenzene	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-di-n-propylamine	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	5 U	5 U	5 U	5 U	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	1.2 UJ	1.2 UJ	1 U	1 U	1.1 U	1.1 U	1.1 U	1 UJ	1 U	1 U	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U
Phenanthrene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.23 U	0.23 U	0.23 U	0.04 J	0.083 J	0.031 J	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Phenol	5 U	5 U	5 U	5.7	5.7 U	5.7 U	5.7 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	0.24 UJ	0.23 UJ	0.2 U	0.2 U	0.039 J	0.23 U	0.23 U	0.2 UJ	0.095 J	0.2 U	0.2 UJ	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)																
4,4'-DDD	NA	NA	0.01 UJ	0.01 UJ	-- R	NA	NA	-- R	NA	0.01 U	-- R	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Aldrin	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
alpha-BHC	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	0.005 UJ	NA	NA	NA	NA	NA

TABLE F-1. GROUNDWATER MONITORING RESULTS - WINTER 2005-2006

ANALYTE	OW-01 NX 12/20/2005	OW-02 NX 12/20/2005	OW-07 NX 2/22/2006	OW-08 NX 2/22/2006	OW-09 NX 12/15/2005	OW-10 NX 12/15/2005	OW-12 NX 12/15/2005	OW-20 NX 12/21/2005	OW-25 NX 12/13/2005	OW-26 NX 12/13/2005	OW-35 NX 12/21/2005	OW-37 NX 12/21/2005	OW-38 NX 12/21/2005	OW-49 NX 12/14/2005	OW-50 NX 12/14/2005	OW-51 NX 12/14/2005
alpha-Chlordane	NA	NA	0.005 UJ	0.005 UJ	0.0051 J	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
beta-BHC	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
delta-BHC	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
Dieldrin	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Endosulfan I	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
Endosulfan II	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Endosulfan Sulfate	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Endrin	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ	NA	NA	0.01 UJ	NA	0.01 UJ	0.01 UJ	NA	NA	NA	NA	NA
Endrin Aldehyde	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
Endrin Ketone	NA	NA	0.01 UJ	0.01 UJ	0.01 U	NA	NA	0.01 U	NA	0.01 U	0.01 U	NA	NA	NA	NA	NA
gamma-BHC(Lindane)	NA	NA	0.005 UJ	0.005 UJ	0.005 UJ	NA	NA	0.005 UJ	NA	0.005 U	0.005 UJ	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
Heptachlor	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
Heptachlor Epoxide	NA	NA	0.005 UJ	0.005 UJ	0.005 U	NA	NA	0.005 U	NA	0.005 U	0.005 U	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	0.05 UJ	0.05 UJ	0.05 U	NA	NA	0.05 U	NA	0.05 U	0.05 U	NA	NA	NA	NA	NA
Toxaphene	NA	NA	0.5 UJ	0.5 UJ	0.5 U	NA	NA	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA	NA	NA
Aroclor-1016	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.2 U	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA
Aroclor-1221	NA	NA	0.2 U	0.2 U	0.2 U	NA	NA	0.4 U	NA	0.4 U	0.4 U	NA	NA	NA	NA	NA
Aroclor-1232	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.2 U	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA
Aroclor-1242	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.2 U	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA
Aroclor-1248	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.2 U	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.2 U	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA	0.2 U	NA	0.2 U	0.2 U	NA	NA	NA	NA	NA
Metals (ug/L)																
Aluminum	50.0 U	50.0 U	60.6	28.0 J	3200	1870	419	50.0 U	61.7 J	81.7 J	50.0 U	50.0 U	50.0 U	50.0 UJ	643 J	23.2 J
Antimony	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 U	20.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Arsenic	2.4	11.9	7.2	14.4	1.5	0.25 J	13.6	10.7	2.0 J	24.7	8.3	7.4	8.1	0.48 J	6.9	23.1
Barium	2.6 J	26.1	32.4	23.7	105	62.4	11.8	69.8	313	5.1 J	21.8	107	19.8	36.3	25.8	30.0
Beryllium	1.0 U	1.0 U	1.0 U	1.0 U	3.1 J	1.6 J	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 J	1.0 U
Cadmium	0.18 J	0.38 J	1.0 U	1.0 U	18.3	0.96 J	0.051 J	0.056 J	1.3 J	1.0 U	1.0 U	1.0 U	0.41 J	0.43 J	0.18 J	1.0 U
Calcium	71300	36700	44200	37700	304000	51900	25700	34700	563000	19800	43300	105000	25200	52100	22600	25000
Chromium	0.095 J	0.15 J	2.0 U	0.48 J	1.4 J	0.32 J	0.16 J	2.0 U	20.0 U	1.1 J	2.0 U	2.0 U	2.0 U	2.0 U	1.4 J	2.0 U
Cobalt	0.40 J	2.2	1.2 U	1.0 U	341	41.5	0.28 J	24.7	12.2	1.0 U	0.53 J	5.3	1.5	2.1	4.4	2.0
Copper	2.0 UJ	2.0 UJ	2.2 U	2.0 U	135 J	8.6 J	2.0 UJ	1.0 J	20.0 U	2.0 U	0.77 J	0.66 J	0.66 J	2.0 U	3.2 U	2.0 U
Iron	100 U	1280	1270	3160	770	443	293	9160	489 J	100 UJ	536	8000	619	606 J	1230 J	8750 J
Lead	1.0 UJ	0.24 J	0.25 J	0.11 J	6.1 J	0.60 J	1.0 UJ	1.0 U	10.0 U	0.78 J	0.73 J	1.0 U	1.0 U	1.0 U	1.1	1.0 U
Magnesium	6700	5110	7870	6580	60800	9500	5000 U	5350	74700	1190 J	12500	19700	5440	10600	4550 J	4460 J
Manganese	158	2320	2110	567	22600	2820	82.2	3480	5970 J	7.6 J	327	1390	1700	516 J	1350 J	1470 J
Mercury	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ
Nickel	1.2 J	2.5 J	1.0 U	1.0 U	286 J	36.2 J	2.2 J	11.4	10.0 U	1.6	1.0	1.4	0.48 J	1.7	1.7	1.0 U
Potassium	2090 J	3050 J	4600 J	5850 J	17900 J	3150 J	18800 J	6660	47300	3620 J	3280 J	11400	3270 J	4600 J	4150 J	3600 J
Selenium	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 UJ	0.15 J	5.0 UJ	5.0 U	50.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	1.0 U	1.0 U	1.0 U	1.0 U	0.63 J	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Sodium	36000	77700	48400	39500	311000	68800	39800	111000	4070000	141000	15400	122000	23200	34400	36000	41700
Thallium	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 UJ	5.0 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	0.50 U	0.50 U
Vanadium	0.31 J	0.51 J	0.31 J	0.43 J	1.4 J	1.0 UJ	1.1 J	1.0 UJ	1.4 J	0.64 J	1.0 UJ	1.0 UJ	0.35 J	0.25 J	2.6 J	1.2 J
Zinc	2.0 U	2.0 U	2.0 U	2.0 U	357 J	80.9 J	2.0 U	4.6	45.9 UJ	10.2 UJ	2.3	2.4	2.9	6.4 UJ	14.8 J	8.7 UJ
1,4-Dioxanes (ug/L)																
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	NA	0.59 J	NA

Notes
NX - Normal Field Sample
FD - Field Duplicate
NA - Not Analyzed

Subsurface Soil - TOC/Grain Size

TABLE F-2. SUBSURFACE SOIL ANALYTICAL RESULTS - TOC AND GRAIN SIZE

ANALYTE	MW-302S 6-8' NX 1/16/2006	MW-303S 8-10' NX 1/17/2006	MW-303S 8-10' FD 1/17/2006	MW-301S 9-11' NX 2/7/2006	MW-301D 34-36' NX 2/11/2006	MW-304S 9-11' NX 1/17/2006	MW-304D 19-21' NX 1/24/2006	MW-305S 9-11' NX 1/19/2006	MW-306S 6-8' NX 1/17/2006	MW-307S 14-16' NX 1/30/2006	MW-307D 48-50' NX 1/30/2006	MW-308B 34-36' NX 2/1/2006
TOC (mg/kg)												
Total Organic Carbon	3110	1550	1660	1880	771 J	1110	360 U	788	364 U	1240	407 J	574
Grain Size (%)												
<0.075 mm (Silt & Clay)	20.3	51.6	1.4	21.5	50.1	11.7	49	2	0.6	3	NA	2.8
>= 0.075 mm (Sand)	79.7	48.4	98.6	78.5	49.9	88.3	51	98	99.4	97	NA	97.2
Sieve #4 (Gravel)	5.8	0.6	0.6	5.2	4.5	29.3	13.3	31.2	0.9	0	NA	0.9
Sieve #10 (Coarse Sand)	5.2	2.6	3	16.3	5.4	20.5	9.4	16.2	0.8	0	NA	2.8
Sieve #140 (Medium Sand)	87.2	92.7	92.8	75.5	74.1	47.2	61.3	51.5	96.5	97.5	NA	95
Sieve #200 (Fine Sand)	1.8	4.2	3.7	3	13.1	3	16.1	1	1.7	2.5	NA	1.3

Notes
NX - Normal Field Sample
FD - Field Duplicate
NA - Not Analyzed

LNAPL -Petroleum Hydrocarbon Fingerprinting

SITE: Iron Horse Park Superfund Site
CASE NO.: 0269M
SDG NO.: D06839

DATA SUMMARY TABLE
Petroleum Hydrocarbon Fingerprinting (D-087)
NAPL (mg/Kg)

	Traffic Report Sample No.	D06839
	M&E Sample ID	PZ-115
	Lab Sample ID	0602075-01
	Date Sampled	02/21/06
	Date Extracted	02/28/06
	Date Analyzed	03/03/06
	% Solids	100
	Dilution Factor	1
	Mass/Volume of Sample	0.232 g
	Comments	
Analyte	RL	
Total Petroleum Hydrocarbons as Fuel Oil #6	5000	160000

Asbestos Monitoring

HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
(781) 893-8330 (781) 893-4414 (fax)

January 23, 2006

Report For:	Laurie O'Connor Metcalf and Eddy 701 Edgewater Drive Wakefield, MA 01880
Project I.D.:	Iron Horse Park, North Billerica MA
Hub I.D.:	17701
Date Received:	January 19, 2006
Scope:	Hub Testing Laboratory collected four (4) PCM air samples during installation of monitoring wells MW 305S and MW 305D at Iron Horse Park. The samples were collected and analyzed to assess the extent of asbestos disturbance during the well installations.
Methods:	Air samples were collected on 25mm MCE cassettes (0.8 μm) with flow rates between 10-12 LPM. Samples were collected for the duration of the installation activities at each well. Two samples were collected for each well, one at the well location (approximately 5 feet N-NE) and another at a distance of approximately 40-50 feet NE (downwind) of the well. Results are listed in **Table 1**.
Analysis:	Fiber densities were analyzed using Phase Contrast Microscopy (NIOSH 7400(A) Method, 1994).

Results:

Table 1: PCM Samples

Sample	Location	Sample Volume (L)	Fibers	Fibers/cc
17701-1	Downwind of 305S	572	1	<0.005
17701-2	At 305S	572	1	<0.005
17701-3	Downwind of 305D	976	0.5	<0.003
17701-4	At 305D	976	3	<0.003

NVLAP #102079-0

Comments: The weather during sample collection was clear and cold, with a constant light to moderate northeasterly wind. Wet conditions were maintained during drilling, and no visible particulate emissions to the air were observed. The wells were installed by GeoLogic of Norfolk, MA.

The NIOSH 7400 Method identifies fibers according to dimensional criteria only and does not distinguish between asbestos and other fiber types.

This analysis pertains only to the samples analyzed. This report shall not be reproduced except in full, without the written approval of the laboratory.

for Susan Boyle, Vice President
Hub Testing Laboratory, Inc.