Revised Remedial Investigation Report
Tarr, Inc.
2429 North Borthwick Avenue
Portland, Oregon

Prepared for:
Tarr, Inc.

February 11, 2014
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APEX

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1.0 Introduction

This report presents the results of the Remedial Investigation (RI) for the facility located at 2429 North Borthwick Avenue in Portland, Oregon (the Facility; Figure 1). The RI was completed following Oregon Department of Environmental Quality (DEQ)-administered rules for remedial investigation as described in Oregon Administrative Rules (OAR) 340-122-0080. The initial RI Report, dated November 15, 2011, was revised based on comments received from DEQ in their letters dated January 19, 2012 and August 15, 2013. This revised report includes the remedial investigation, the baseline human health risk assessment (HHRA), and the Ecological Risk Assessment (ERA). The baseline HHRA was conducted in accordance with the protocol for performing risk assessments under OAR 340-122-084, DEQ risk assessment guidance documents (DEQ, 2000 and 2003), and the Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual (U.S. Environmental Protection Agency [EPA], 1989), as appropriate. The ERA consists of a Level I Scoping Ecological Risk Assessment and Level II Screening. The ERA activities were conducted consistent with DEQ Guidance for Ecological Risk Assessment (DEQ, 1998b).

The RI and risk assessment were completed with oversight from the DEQ Voluntary Cleanup Program (VCP). The RI Report and risk assessment were prepared as described in the RI Work Plan (Ash Creek Associates, Inc. [Ash Creek], 2006a), RI Work Plan Addenda 1 through 3 (Ash Creek, 2006b; Ash Creek, 2007, Ash Creek, 2008), and the Risk Assessment Work Plan (Ash Creek, 2010a).

1.1 Purpose

The purpose of this RI was to generate data of sufficient quality to evaluate Site risk and, if necessary, analyze and select remedial action alternatives (either interim or final actions). The objectives of the RI are:

- Identify the hazardous substances that have been released to the environment as a result of historical Site activities;
- Determine the nature, extent, and magnitude of hazardous substances in affected media;
- Identify potential hot spots;
- Complete a screening level ecological risk assessment; and
- Complete a deterministic HHRA.

1.2 Report Organization

Facility investigation activities were conducted by various consultants and in multiple phases between 1990 and 2011. In addition to the recent interim actions related to the solvent sources, the underground storage tank (UST) cleanup unrelated to chlorinated solvents on Parcel 1 is the other major cleanup completed at the Site (see discussion in Section 2.3.4). The activities and results for each investigation event have been documented in corresponding reports. These reports are incorporated into the RI by reference where

appropriate. This RI report presents a summary of the previous environmental activities and discusses the results and findings of the RI. This RI report is organized as follows:

Background. Section 2 presents Site background, including Site history, operations, and previous environmental activities.

Site Setting. Section 3 describes the physical characteristics of the Site, including topography, climate, as well as regional and site-specific geology, hydrogeology, and hydrology.

RI Results. Section 4 summarizes the results of investigations conducted from 2006 to present. These results have been presented in prior reports, which are referenced accordingly.

Nature and Extent of Contamination. Section 5 describes the nature and extent of contamination in all affected media.

Land and Beneficial Water Use Summary. Section 6 presents a summary of the Land and Beneficial Water Use Determination from the Risk Assessment Work Plan (Ash Creek, 2010a).

Risk Assessment. Sections 7 and 8 present the human health and ecological risk assessments.

Hot Spot Identification. Section 9 presents the hot spot identification.

Source Control Evaluation. Section 10 presents the source control evaluation (SCE).

Summary and Conclusions. Section 11 summarizes the RI and risk assessment conclusions.

1.3 Facility Ownership

The Facility was initially developed in 1960 by the Art Priestley Oil Company, which changed its name to Priestley Oil and Chemical Company, Inc. in 1967, then Tarr, Inc. in 1994, and Conger Northwest, Inc. in 2003 (Priestley/Tarr). Priestley/Tarr continues to own this Facility today.

2.0 Site Background

The Facility is located at 2429 North Borthwick Avenue. The Facility is 1.49 acres in size. It encompasses the area of current and prior operations on property owned by Priestley/Tarr. When referred to in this RI Report, the term Site includes both the Facility and the remainder of the investigation area (also corresponding to the Locality of Facility described in Section 6.1), as shown on Figure 2. The Site extends from the Facility to the Willamette River.

2.1 Site Description

The Site is shown on Figure 2. Summary information describing the Site and its physical characteristics are provided below.

Topographic Map	USGS, 7.5-minute quadrangle, Portland, OR, 1990
Section, Township, and Range	Section 27, Township 1 North, Range 1 East
Facility Address	2429 North Borthwick Avenue, Portland Oregon
Latitude/Longitude	45°32'24.99"N and 122°40'27.36"W
Facility Approximate Area	1.49 acres
Facility Existing Use	Petroleum and chemical distribution
Geologic Setting	Willamette River Valley
Nearest Surface Water Bodies	Willamette River 1,800 feet west of Facility
Approximate Surface Elevation	Facility is approximately 80 feet above mean sea level (MSL)
Soil and Geologic Conditions	Silt over sand
Depth to Groundwater	Approximately 60 to 65 feet below ground surface (bgs) at Facility and 25 to 30 feet bgs east of North Interstate Avenue
Direction of Shallow Groundwater Flow	West-Southwest

Physical Features. The Facility covers the majority of the block bounded by North Russell and North Page Streets and North Borthwick and North Albina Avenues. In addition to the offices, the Facility has three warehouses, a Clean Room, a maintenance shop, and three aboveground storage tank (AST) containment areas (Figure 3).

The Facility includes eight parcels (tax lots) as shown on Figure 3. The total area of the Facility is 1.49 acres. The surface coverage consists of the following:

- Buildings, 32 percent;
- Paved driveway or parking areas, 60 percent;
- Tank farms with secondary containment, 8 percent; and
- Vegetated areas, less than 1 percent.

Table 1 summarizes the parcel numbers, corresponding tax lot identification numbers, and current development information.

2.2 Facility and Vicinity History

The Facility history is based primarily on a review of existing environmental assessment reports (Wohlers, 2002; 2003a; and 2003b) and historical aerial photographs (for the years 1936, 1948, 1957, 1961, 1963, 1967, 1970, 1972, 1974, 1976, 1977, 1980, 1986, 1996, 2004, and 2010) obtained from the U.S. Army Corps of Engineers or other sources (Appendix A), and information provided by Priestley/Tarr.

Property that comprises the Facility was originally developed for residential uses in the late 1800s. Residential use continued until the 1950s. Commercial/industrial development began on the northern portion of the Facility in the late 1950s (see Section 2.3). By the 1970s, the transition of the area to commercial/industrial use was essentially complete. Industrial and commercial uses predominate within the Site. Limited urban residential, entertainment, and dining uses are present in the immediate Site vicinity.

2.3 Facility Operations

The following operations summary was developed based on the references listed in Section 2.2, and supplemented by information provided by the Priestley/Tarr.

2.3.1 Facility Development

The Facility was developed by Priestley/Tarr as a distribution facility between 1958 and 1961. Facility operations consisting of an office and loading rack are first observed in the 1961 aerial photograph (Appendix A). The original facility was on Parcels 1, 2, and 4, and consisted of an office building (a converted residential structure), a loading rack, presumably USTs (no ASTs associated with the loading rack are observed in the 1961 aerial photograph), and the access drive from North Albina to the loading racks. The office and Warehouse 1 building were constructed between 1961 and 1963, including installation of the solvent ASTs. There are no floor drains in Warehouse 1. It is unclear whether the building to the south of the office and Warehouse 1 was a part of the Facility. Only the loading rack area was paved. Other surfaces within the Facility shown in the 1961, 1963, and 1967 aerial photographs appear to be unpaved. The Facility operated in this configuration until the 1970s. In 1989, the Facility was entirely paved, including any previously unpaved areas.

Between 1967 and 1970, the residential structures on Parcels 5, 7, and 8 were removed. A concrete pad was constructed to the northwest of Warehouse 1 (Parcel 5). In the 1972 aerial photograph, this pad can be viewed with higher resolution, and drums are present outdoors, both on the pad and across the unpaved entryway to the north. Additionally, between 1970 and 1972, the residential structures on Parcels 3 and 6 had been removed and Parcels 6 through 8 were vacant. By 1972, parcel 6 is a paved parking area.

The northern extension of the office was completed between 1972 and 1974, and Warehouse 2 was constructed between 1974 and 1976, enclosing the outdoor drum area. The maintenance shop at the south

end of the Facility (Parcel 8) was constructed in 1977. By 1980, Warehouse 3A, Warehouse 3B, the Clean Room, and the initial 6 of 7 ASTs of the lubrication oil tank farm (South Tank Farm) had been constructed. According to an appraisal report provided by Priestley/Tarr, Warehouse 3A, Warehouse 3B, and the Clean Room were constructed in 1978. There are no floor drains in Warehouses 2, 3A, and 3B.

The North and South Tank Farms were constructed in the 1980s. Construction of the South Tank Farm was incrementally completed. The initial tanks were present in the 1980, 1983, and 1986 aerial photographs. The North and South Tank Farms were fully constructed by the mid-1990s (full construction first observed in the 1996 aerial photograph).

The last change on the Facility observed in the aerial photographs were the north and south office additions, first observed in the 1996 aerial photograph. These additions were for office space and their use did not include product storage or handling.

2.3.2 Product Storage and Handling

This section describes the product storage and handling areas at the Facility. Figure 4 summarizes current and historical product storage and handling areas on each parcel.

Product storage initially was in USTs on Parcel 1. Not all of the USTs were installed during the initial construction. At least the four northern USTs were installed at a later date. The tanks ranged in capacity from 1,000 to 15,000 gallons. They were used to store fuel and non-chlorinated solvents. Chlorinated solvents were not stored in the USTs. Bulk product storage in ASTs began in approximately 1963 with installation of the chlorinated solvent ASTs. Initial lubrication oil ASTs were installed between 1977 and 1980. Bulk product storage converted entirely to ASTs in 1989, and the USTs were removed in 1990. Currently, there are no USTs on the Facility.

Two horizontal ASTs are located on Parcel 1. These were installed shortly after the original development and have been in use since 1963. The tanks were originally 6,000 gallons each. They were used to store chlorinated solvents including tetrachloroethene (PCE), trichloroethene (TCE), and 1,1,1-trichloroethane (TCA). By 1991, these tanks were replaced with compartmentalized tanks, with each compartment having a capacity of 2,000 gallons, and the tanks were no longer used for storage of chlorinated solvents. The tanks are currently located within a concrete-lined secondary containment system, but secondary containment was not present prior to 1989. Solvents were primarily sold and distributed in bulk via tankers. Some dispensing of product to drums reportedly occurred. TCE and TCA were the primary products that were packaged into drums at the ASTs. Some PCE was reportedly packaged into drums as well.

In the early years, product blending, drum packaging, and drum storage activities were reportedly conducted outdoors at the location of Warehouse 2. Outside drum storage occurred on the uncovered concrete pad

visible on Parcel 5 in the aerial photographs from 1970 through 1974. The concrete pad was later enclosed and turned into Warehouse 2 (circa 1975) for the product packaging/storage area. Reportedly, some amount of PCE was packaged into drums when requested by commercial customers.

Empty used drum storage also occurred on Parcel 4, which was unpaved before the late 1980s.

From the time of construction of Warehouse 2 (circa 1975) until 1989, blending was then conducted in a tank outside the southwest corner of Warehouse 2 (see Figure 4). Occasional spills occurred during blending. In 1989, the blending tank was moved inside the secondary containment at the east end of the AST farm on Parcel 4. Since the elimination of bulk storage of chlorinated solvents in 1991, the Facility has handled chlorinated solvents only in pre-packaged drums, and repackaging/blending of chlorinated solvents is no longer conducted at the Facility. Incidents of spillage or leakage from pre-packaged drums have never occurred. In the 1990s, drums were also reconditioned (drained, pressure tested, and repainted) for products other than chlorinated solvents (bulk chlorinated solvents were no longer handled at this time).

Warehouse 3 (including what would become the Clean Room) was constructed in the late 1970s. Reportedly, lubricants were stored in Warehouse 3 before it became the Clean Room. Chlorinated solvents were not stored in Warehouse 3. In 1998, the Clean Room was constructed within Warehouse 3 to package high-purity isopropyl alcohol.

Parcel 8 was owned by Priestley/Tarr until the late 1970s when it was sold and developed with the current building in approximately 1977. From demolition of the residential structures until developed, Parcel 8 was vacant (see aerial photographs from 1967 through 1977). In 1994, Priestley/Tarr purchased Parcel 8 and the facilities for what became the Maintenance Shop. Parcel 8 and the maintenance shop are currently leased to a third party for unrelated activities.

The lubrication oil (Lube) AST farm and loading rack were constructed on Parcel 3 beginning approximately in 1980. The Lube AST farm consists of 18 tanks ranging in capacity from 1,000 to 3,000 gallons. The tanks are located within a concrete-lined secondary containment system, but the tank farm was initially without secondary containment. Piping in this area is above ground.

In 1989, the AST farm on Parcels 4 and 5 was constructed. The tank farm has 18 tanks ranging in capacity from 8,000 to 12,000 gallons. The tank farm is located within a concrete-lined secondary containment system. The tank farm stores fuels and non-chlorinated solvents, but has never been used to store chlorinated solvents.

The card-lock motor fuel (diesel and gasoline) dispenser was constructed at the northeast corner of Parcel 1 in 1989. This dispenser is supplied by underground piping, the only underground piping at the Facility.

2.3.3 Chemicals Handled

Over the history of the Facility, a variety of chemicals have been handled. Table 2 summarizes the known history of chemical handling. In general, chemical groups handled at the Facility included fuels (gasoline, diesel, and kerosene), solvents (e.g., petroleum, alcohol, ketone, chlorinated, and acetate/glycol), and lubricating oils. Figure 4 shows the features/areas where chemical storage or handling has occurred at the Facility (current or historical). These features/areas include ASTs, USTs, loading racks, a card-lock dispenser, drum/tote storage, piping manifolds, blending areas, a paint booth, and maintenance areas.

The function and chemical handling for each area of the Facility is discussed and displayed on Figure 4 and summarized as follows:

- Warehouse 1 – Lubricant and chemical storage in 5- to 55-gallon containers;
- Warehouse 2 – Chemical blending and packaging; drum reconditioning (non-chlorinated solvents only during the 1990s) and packaging; historically, blending sometimes occurred outside the southwest corner of the warehouse;
- Warehouse 3A – Lubricant and chemical storage in 5- to 550-gallon containers;
- Warehouse 3B – Packaging and storage of lubricants in 5- to 330-gallon containers; historically included chemical blending and packaging;
- Clean Room – Storage of isopropyl alcohol in 5- to 330-gallon containers; historically included lubricant and chemical blending and packaging;
- Maintenance Shop – Vehicle maintenance; parts cleaning; storage of several 20- to 55-gallon containers of lubricant, non-flammable solvent, and antifreeze;
- Former UST Farm – Storage of motor fuels and solvents, but never chlorinated solvents or lubricants;
- Lubricant AST Farm – Storage of lubricants only; prior use as vehicle parking;
- Horizontal ASTs on Parcel 1 – Solvent storage; historically the only location used for bulk storage of chlorinated solvents; and
- Solvent AST Farm on Parcels 4 and 5 – Storage of motor fuels and solvents, but never chlorinated solvents.

Potential Source Areas. Based on current or historical Facility operations (see Figure 4), the following potential source areas were identified in the RI Work Plan (Ash Creek, 2006a):

- Card-lock Fuel Dispenser on Parcel 1;
- Former USTs and Loading Rack on Parcel 1;

- ASTs on Parcel 1;
- ASTs and Loading Rack on Parcel 3;
- ASTs on Parcels 4 and 5;
- Warehouses on Parcels 2, 5, 6, and 7;
- Oil/water separators on Parcels 4, 5, and 7;
- Maintenance shop on Parcel 8;
- Historical Blending Area outside the southwest corner of Warehouse 2; and
- Drum Storage on Parcels 4 and 5.

2.3.4 Previous Environmental Activities

In May through July 1990, Obrist Trucking and Excavating decommissioned by removal 18 of 19 USTs at the Facility (Wohlers, 2002). Figure 4 shows the location of the former UST tank farm. The USTs variously contained gasoline, diesel, fuel oil, petroleum solvents, ketone solvents, and alcohols. Petroleum-contaminated soil was encountered around and beneath the USTs. Soil was excavated to depths of 30 to 65 feet bgs. Groundwater was not encountered. Approximately 4,000 cubic yards of petroleum-contaminated soil were disposed of at the St. Johns Landfill. Petroleum-contaminated soil was left in place beneath the manifold on Parcel 1. Based on verification sampling completed, the DEQ issued a no further action determination for the southern portion of the UST tank farm.

The Site was referred to the Site Response Section of Oregon DEQ in 1991 for review of the potential for contamination at the entire Facility. Between 1991 and 1994, the DEQ reviewed information submitted by the owner and the owner's consultants. In a letter dated April 5, 1994, the DEQ listed the Site on the Confirmed Release List and identified the Site with ECSI No. 1139.

In 2002, Tarr entered into an agreement with the DEQ (DEQ letter dated October 17, 2002) for oversight of cleanup at the facility under the DEQ's Independent Cleanup Pathway. Work completed under Independent Cleanup (described in the paragraphs below) included miscellaneous remediation, expanded Preliminary Assessment (Wohler's, 2003a), and initial site assessment (Wohler's 2003b). The Independent Cleanup Pathway is intended for relatively simple sites. Based on the data collected during the initial assessments, it was determined that additional oversight from the DEQ was needed. In a DEQ letter dated February 25, 2005, the Site was entered into the DEQ's Voluntary Cleanup Program.

The vehicle service pit located within Warehouse 1, near the west edge of Parcel 2, was taken out of service in 2001. Soil samples were collected from soil up to 10.5 feet below the floor grade (5.5 feet beneath the bottom of the pit) using a hand auger. The soil contained gasoline-, diesel-, and oil-range petroleum

hydrocarbons and various volatile organic compounds (VOCs). Metals were detected at concentrations consistent with background, and polychlorinated biphenyls (PCBs) were not detected. Soil was excavated from the pit to a depth of 14 feet and transported for thermal desorption treatment (7.3 tons total). One confirmation sample was collected from the bottom of the pit and analyzed for petroleum hydrocarbons and VOCs, with results below the method detection limits.

In 2002, Priestley/Tarr arranged for Armac to decommission by removal the former heating oil UST located north of the building on Parcel 2. It had a capacity of 500 gallons. The UST was removed and soil samples were collected from beneath the UST. Diesel was detected in the soil sample from beneath the east end. A total of 5.9 tons of soil were removed and transported for thermal desorption treatment. Diesel was not detected in the confirmation sample collected at the east end of the heating oil AST following the soil corrective action. The DEQ closed the project file in a letter dated January 14, 2003.

The expanded Preliminary Assessment consisted of soil and grab groundwater sampling for chemical analyses (Wohlers, 2003a). The sampling activities were completed in December 2002. Two hand auger borings were completed to a depth of 4 feet each, and 10 push-probe borings were completed to depths up to 80 feet. Soil samples were analyzed for petroleum hydrocarbons (gasoline-, diesel-, and oil-range), polycyclic aromatic hydrocarbons (PAHs), total and leachable lead (one sample), PCBs (one sample), and VOCs. Petroleum, PAHs, and VOCs were detected. Groundwater samples were analyzed for petroleum hydrocarbons and VOCs with gasoline range hydrocarbons and VOCs (including chlorinated VOCs) being detected.

Additional environmental assessment was completed in July 2003 as a follow-up to the expanded Preliminary Assessment. The environmental assessment consisted of soil and groundwater sampling for chemical analyses (Wohlers, 2003b). Six push-probe borings were completed to depths of 40 to 80 feet, and four of these borings were completed as monitoring wells. Soil samples were analyzed for petroleum hydrocarbons, PAHs, and VOCs with petroleum, PAHs, and VOCs being detected. Groundwater samples were analyzed for petroleum and VOCs, with VOCs being detected.

3.0 Site Setting

This section describes the Site setting, including the physical characteristics of the Site (topography, climate, regional geology and hydrogeology, and surface hydrology) and a summary of land and water uses.

3.1 Topographic Setting

The Site is located in Section 27, Township 1 North, Range 1 East of the Willamette Meridian, Portland, Multnomah County, Oregon and appears on the Portland, Oregon, U.S. Geological Survey (USGS) 7.5-Minute Quadrangle maps (USGS, 1990). The topography varies from the Facility and the remainder of

the Site. Ground surface within the Facility slopes downward to the northwest at an average grade of 4 percent; the ground surface elevation ranges from 70 to 80 feet above MSL. The remainder of the area also slopes to the northwest, at a gentler 2-percent grade. The ground surface elevation varies from 30 to 80 feet above MSL.

According to the Federal Emergency Management Agency Flood Insurance Rate Map, City of Portland, Oregon, Map Number 410183-0035C, dated October 19, 1982, the Facility and majority of the Site is located within Zone C (described as an area of minimal flooding). A very small percent of the Site is Zone B (described as areas between limits of the 100-year flood and 500-year flood, or certain areas subject to 100-year flooding with average depths of less than 1 foot or where the contributing drainage area is less than 1 square mile, or areas protected by levees from the base flood).

3.2 Climate

The region encompassing the Site has a temperate marine climate characterized by cool, wet winters and warm, dry summers. Precipitation, temperature, and wind data for the Site are summarized below (Oregon State University, 1996).

Precipitation:

Average Annual	37 inches (chiefly rain)
Wettest Months	November through February (greater than 4 inches per month)
Driest Months	July and August (less than 1 inch per month)

Temperature:

Average Annual	54 degrees Fahrenheit (°F)
Coldest Month	January – Average Min. 34°F
Warmest Month	August – Average Max. 80°F
Lowest Recorded	-3°F (February 1950)
Highest Recorded	107°F (July 1942)

Wind:

Minimum Monthly Mean (October): 6 miles per hour (mph)
Maximum Monthly Mean (December/January): 10 mph
Maximum Recorded: 88 mph (1962)

3.3 Geology

Regional Geology. The regional geology in the vicinity of the Site is dominated by three primary units. Based primarily on Trimble (1963) and Morgan and MacFarland (1996), these are briefly described below from oldest (deepest) to youngest (shallowest).

- Columbia River Basalt (CRB) – The Portland metropolitan area is underlain at depth by the CRB Formation, a series of lava flows as much as 25 million years old. The CRB has been down-warped into the Portland and Tualatin basins as much as 1,200 feet deep and has subsequently been filled with fine-grained sedimentary lake deposits termed the Troutdale Formation. Around the basin margins, the CRB is exposed at or near the ground surface. In the vicinity of the Facility, the CRB is likely at a depth of about 700 feet.
- Troutdale Formation – Approximately 5 to 7 million years ago, high-velocity floods and debris flows washed materials into the Portland and Tualatin basins, covering the CRB. These deposits are known as the Troutdale Formation. It is composed of a variety of sedimentary materials including unconsolidated sand and gravel, cemented gravels and cobbles (conglomerate), and hard sandstones. The formation is in excess of 1,000 feet thick in places, and the surface is often deeply weathered to fine-grained sandy silts and clayey silts. In the vicinity of the facility, the Troutdale formation is present generally between the depths of 100 and 700 feet.
- Unconsolidated Flood Deposits – The areas of the Portland basin below about elevation 200 feet are overlain by Pleistocene-aged (ending about 14,000 years ago) catastrophic flood gravels deposited throughout the area during the great Missoula (or Spokane) floods. The flood deposits consist of large cobbles and boulders near the source areas of maximum velocity, such as the mouth of the Columbia River Gorge. The more slack water deposits of the same flooding events consist of coarse- to fine-grained sands and slightly silty sands, overlain by silt that settled from the flood waters as they receded. The grain size decreases with distance from the Columbia River Gorge. In the vicinity of the Facility, these flood deposits are present from the ground surface to a depth of about 100 feet.

Local Geology. Figure 5 shows a geologic cross-section through the Facility (cross-section location is shown on Figure 2). The cross-section shows a sandy silt present at the ground surface to a depth of about 18 feet. Underlying the silt is a fine sand unit to the full depth of the explorations. A variable silt zone is intermittently present in the sand between depths of 55 and 75 feet. In the central and east portion of the Facility, this was manifested as a zone of silty sand up to 15 feet thick. To the west (MW-2), this zone was a 2-foot-thick layer of sandy silt at a depth of about 50 feet. These soil types are consistent with the flood deposits described above. Also shown on the cross-section is the backfilled UST excavation. The fill material generally consists of a medium sand but also includes some silt and gravel.

Toward the west, down the slope near Mississippi Avenue, the sandy silt layer is missing and the fine sand is present at the ground surface. Further west, the fine sand transitions to predominantly silt in the vicinity of well MW-10. This is consistent with Willamette River floodplain material.

The Troutdale Formation is present beneath the Site at elevations between 0 and 10 feet MSL. At the Facility, the Troutdale Formation is first encountered at approximately 85 feet bgs. Closer to the Willamette River, the Troutdale Formation is present at approximately 35 feet bgs.

3.4 Hydrogeology

Regional Hydrogeology. The regional water-bearing units follow the regional geology discussed above. The primary units are located within the CRB and the Troutdale Formation, with secondary units present within the flood deposits. The regional aquifers are briefly described below from deepest to shallowest (Trimble, 1963).

- CRB Aquifer – The CRB is exposed at the valley and basin margins ranging from the Cascade Mountains to the Tualatin Mountains to the Oregon Coast Range. The primary recharge areas for the CRB are the hills and mountains, which infiltrate rainwater along the flow margins and interflow zones to the base of the unit. Water yield in the CRB can be large (as much as 23,000 gallons per day [gpd]) or non-existent, depending upon whether the well intercepts the interflow zones. Quality ranges from excellent in active recharge areas to saline in zones of connate water in contact with marine sedimentary rocks.
- Troutdale Formation Aquifer – The most prolific source of water in the area includes the unconsolidated sand and gravel phases of the Troutdale Formation, with a yield of as much as 100,000 gpd in the Lower Troutdale Formation, a high of over 600,000 gpd in the sand and gravel of the Upper Troutdale Formation, and on the order of 30,000 gpd in the Sandstone Aquifer of the Troutdale Formation. These formations are the source of the City of Portland backup drinking water supply (wellheads located miles to the east of the Facility).
- Unconsolidated Sedimentary Aquifer – The unconsolidated sedimentary aquifer consists of catastrophic flood deposits of late Pleistocene age that extend across the central portion of the Portland Basin. This system also includes water-bearing units that occur in flood plain and terrace deposits along rivers and streams within the Portland Basin.

Facility and Vicinity Hydrogeology. Depth to groundwater is approximately 60 feet bgs on and adjacent to the Facility, and approximately 30 feet bgs nearer the river. Shallow groundwater in the site vicinity flows toward the west-southwest, but the flow direction can vary based on river stage. The hydraulic gradient is steeper near the Facility and flattens as the groundwater reaches the low-lying areas closer to the Willamette River.

The table below presents estimates of hydraulic conductivities (derived from literature values), hydraulic gradients, and the corresponding seepage velocities for the three hydrogeologic units of interest that underlie the Site: the unconsolidated sand aquifer, the overbank deposits, and the Troutdale Formation. Estimates of hydraulic conductivities were obtained from McFarland and Morgan (1996) for the unconsolidated sedimentary aquifer that comprises the sand unit under the Facility and vicinity, and the Troutdale Formation that comprises the consolidated gravel formation beneath the entire LOF. The estimate of the hydraulic conductivity of the silt unit that comprises the overbank deposits was taken from Freeze and Cherry (1979).

Hydrogeological Unit	Estimated Hydraulic Conductivity	Estimated Hydraulic Gradient	Porosity	Estimated Seepage Velocity
Silt (Overbank Deposits)	0.3 feet per day	0.002 (Lowland areas)	0.35	0.6 ft/year
Sand (Unconsolidated Sedimentary Aquifer)	200 feet per day	0.005 (Near Facility) 0.001 (Near Miss. Ave.)	0.25	1,500 ft/year (Near Facility) 300 ft/yr (Near Miss. Ave.)
Gravel (Troutdale Formation)	7 feet per day	0.00001	0.25	0.1 ft/year

Groundwater flows are controlled by the Willamette River stage. Figure 6 shows groundwater contours from December 2010, which were used as the basis for the hydraulic gradients in the table above. In the unconsolidated aquifers, the hydraulic gradient varies from 0.005 beneath the facility to 0.001 in the vicinity of Mississippi Avenue, to nearly flat west of Railroad Street. During periods of high river stage, the hydraulic gradient locally reverses near the river. This condition is normally observed in the second quarter of the year, when river stages exceed 10 feet MSL. The high river stage periods usually last for between 2 and 4 weeks. Figure 7 is a plot showing the river stage height, with the river stage height measured at quarterly monitoring events highlighted. Figure 8 is a representative contour showing the gradient reversals.

3.5 Surface Hydrology

The nearest surface water body is the Willamette River located approximately 1,500 feet southwest of the Facility at its closest point. In the downgradient direction (west-southwest) along the axis of the dissolved-phase constituent plume, the river is nearly 2,000 feet from the Facility.

The Facility is generally level with slight grade slopes for drainage to several storm drains located across the property. Stormwater at the Facility drains to catch basins attached to the Facility storm system, which ultimately flows to the City storm sewer system. This system includes three separate subsurface piping

branches, each equipped with oil/water separators that discharge to one of the two drainage outfalls (see Figure 3). One of the outfalls is located in the northwest corner of the Facility, and the other outfall is in the southwest portion of the Facility. Each outfall discharges to the City of Portland storm sewer system, which ultimately discharges to the Willamette River located approximately 0.3 mile southwest of the Facility.

4.0 RI Field Activities

The RI has been ongoing since 2006. Data for the RI were generated during the field activities associated with the following work plan documents as well as routine quarterly groundwater monitoring:

- RI Work Plan (Ash Creek, 2006a);
- RI Work Plan Addendum 1 (Ash Creek, 2006b);
- RI Work Plan Addendum 2 (Ash Creek, 2006c);
- Supplement to Addendum 2 – Remedial Investigation Work Plan (Ash Creek, 2007b);
- RI Work Plan Addendum 3 (Ash Creek, 2008);
- Risk Assessment Work Plan (Ash Creek, 2010); and
- Long-term groundwater monitoring since 2006.

A summary of the RI field activities is presented below. Tables 3 through 9 contain the RI data set. Figure 9 shows the Facility sampling locations and Figure 10 shows the sampling locations for the remainder of the Site. Also shown on Figure 9 are the sampling locations and sample identification for direct-push soil and groundwater samples collected following the 1990 UST removals, and soil samples collected for the 2001 heating oil tank decommissioning and vehicle service pit closure. Appendix B contains the exploration logs for the RI. Monitoring well construction details are provided in Table B-1

4.1 2006 RI Activities

The 2006 RI activities included field work outlined in the RI Work Plan (Ash Creek, 2006a) and the RI Work Plan Addendum No. 1 (Ash Creek, 2006b). This work was completed exclusively on the Facility (Figure 9).

- Soil borings – Thirty-six soil borings (B-1 through B-36) were completed for the purpose of collecting soil samples. The borings were completed in three phases between May 19 and July 13, 2006. Soil samples were analyzed for VOCs, and select samples were analyzed for petroleum hydrocarbons (as gasoline, diesel, and oil), and polycyclic aromatic hydrocarbons (PAHs).
- Soil vapor probes – Six probes (at locations B-1, B-16, B-19, B-34, B-37, and B-38) were installed on May 4, 2006. The probes were installed to depths of 22 to 26 inches and screen lengths of 8 to

10 inches. Soil vapor samples were collected on June 15, 2006 (B-1) and July 19, 2006 (remaining probes) and analyzed for VOCs.

- Monitoring wells – Two monitoring wells (MW-5 and MW-5b) were installed on May 18 and June 2, 2006, respectively. The two new wells and existing wells (MW-1 though MW-4) were sampled on July 10 and 11, 2006, and analyzed for VOCs.

The results of the 2006 RI activities were described in the RI Work Plan Addendum No. 2 (Addendum 2; Ash Creek, 2006c).

4.2 2007 RI Activities

The 2007 RI activities included field work outlined in the Addendum 2 (Ash Creek, 2006b) and the Supplement to Addendum No. 2 – RI Work Plan (Supplement; Ash Creek, 2007b). Addendum 2 included plans for depth-discrete groundwater sampling, well installation, and soil vapor sampling at areas away from the primary sources at the Facility. Additionally, DEQ comments on the Addendum 2 field work required additional soil sampling at one location along North Borthwick Avenue, and soil vapor sampling at several locations on North Albina and North Mississippi Avenue.

- Soil vapor samples were collected at locations B-39 through B-45 and location SV-A within the 740 North Russell building using direct-push soil vapor sampling equipment. Samples were analyzed for chlorinated ethenes. Samples were generally collected from 2.5 to 3.0 feet bgs, except for SV-A, which was collected from 4.5 to 5.0 feet bgs.
- Soil borings – Exploration B-47 and locations SV-A, SV-B, and SV-C within the 740 North Russell Building were completed to collect additional soil samples for VOC analysis. Three soil samples and a field duplicate from B-47, and one soil sample from each of the locations SV-A, SV-B, and SV-C, were collected and analyzed for chlorinated ethenes.
- Depth-discrete groundwater explorations – Depth-discrete groundwater samples were collected from locations B-39, B-41, B-46, and B-48 through B-51. Between two and four groundwater samples were collected from each of these explorations and analyzed for VOCs. Groundwater samples were also screened using the Color-Tec® Method.
- Monitoring well installation – Monitoring wells MW-6 through MW-10 were installed. Well screen intervals were selected based on the results of the depth-discrete sampling described above. Monitoring well construction and locations were described in the memorandum Initial Results – RI Addendum No. 2 Implementation (Ash Creek, 2007a).

4.3 2008 RI Activities

The 2008 RI activities included field work outlined in the RI Work Plan RI Addendum 3 (Addendum 3; Ash Creek, 2008). Addendum 3 included plans to establish a soil vapor sampling network at the Site and to further assess the magnitude and extent of PCE/TCE in the southeastern portion of the Site.

- Soil Vapor Sampling – Permanent soil vapor sampling points VP-8 through VP-12 were installed on the Site, North Russell Street, North Albina Avenue, and North Mississippi Avenue and sampled for VOCs. The permanent soil vapor sampling points VP-15 and VP-16 were installed to a depth of 5 feet, with 14-inch soil vapor ports extending from 3.8 to 5 feet bgs. Existing soil vapor sampling points were renamed as follows: VP-1 (former B-37), VP-2 (former B-19), VP-3 (former B-16), VP-4 (former B-38), and VP-5 (former B-34). A soil vapor sample was also collected from B-54.
- Ambient Air Sampling – Ambient air in on-site buildings and several off-site buildings, as well as several outdoor locations, were sampled and analyzed for VOCs. Each of the indoor samples was co-located with a soil vapor sample location.
- Soil borings – Explorations B-52 and B-53 were completed to assess the magnitude and extent of PCE/TCE in the southeastern portion of the Site.

4.4 2009 RI Activities

RI activities completed in 2009 consisted of groundwater, soil vapor, and ambient air monitoring. Additionally, soil samples were collected during installation of the Soil Vapor Extraction Interim Remedial Action Measure (SVE IRAM) in 2009.

- Soil Vapor Sampling – Soil vapor was sampled from the permanent soil vapor sampling network on two occasions in 2009. Two deep soil vapor points (VP-15 and VP-16) were installed. Additionally, soil vapor samples were collected from five intermediate or deep locations from the SVE IRAM system wells, prior to startup of the system in order to provide baseline deep soil vapor concentrations.
- Ambient Air Sampling – Ambient air was sampled on two occasions concurrent with the soil vapor samples. Ambient air was sampled one additional time in 2009 at the Facility and from the buildings closest to the Facility.
- Soil Sampling – Soil borings B-55 through B-59 were completed prior to construction of the SVE IRAM in order to confirm source materials were not present along the west facility boundary. Multiple soil samples were also collected during the SVE IRAM installation.

4.5 2010 RI Activities

RI activities in 2010 were focused on continued monitoring of soil vapor and ambient air, as well as delineating the downgradient extent of the dissolved-phase groundwater constituent plume, as described in the Risk Assessment Work Plan (Ash Creek, 2010).

- Soil Vapor Sampling – Soil vapor sampling was completed from the permanent soil vapor sampling network on two occasions and analyzed for VOCs. VP-13 and VP-18 through -22 were installed.
- Ambient Air Monitoring – Monthly ambient air monitoring for VOCs was completed from several of the buildings closest to the Facility. Two of the monthly sampling events corresponded to the soil vapor sampling events described above.
- Depth-Discrete Groundwater Explorations – Depth-discrete groundwater samples were collected from locations B-60 through B-66. Groundwater samples were collected from multiple intervals within the silt and underlying gravel in each of these explorations and analyzed for VOCs.
- Monitoring Well Installation – Monitoring wells MW-11 through MW-15 were installed. Well screen intervals were selected based on the results of the depth-discrete sampling described above. Monitoring well construction and locations were described in the memorandum Initial Results – RI Addendum No. 2 Implementation (Ash Creek, 2007a). Well MW-17 (at distal end of plume) has not been installed yet because access at this private property location has not been granted.

5.0 Nature and Extent of Contamination

This section summarizes the nature and extent of contamination using the data generated during the activities described in Section 4.0. Chemicals of potential concern (COPCs) were determined in the Risk Assessment Work Plan (Ash Creek, 2010a) and are primarily chlorinated halogenated VOCs. Petroleum hydrocarbons, fuel additives (e.g. methyl-tertiary butyl ether), and other non-chlorinated VOCs are also COPCs to a lesser extent. Table 10 presents the complete list of COPCs as approved by DEQ (2010).

Sections 5.1 through 5.3 describe the extent of chlorinated VOCs in media at the Site (soil, soil vapor and ambient air, and groundwater) using PCE and TCE as surrogates for the COPCs. The human health risk assessment (Section 7.0) considers all of the identified COPCs, including a discussion of the spatial distribution of compounds other than chlorinated VOCs that are found to be contaminants of concern (COC).

Data tables that summarize soil, groundwater, soil vapor, and ambient air data generated for the Site are included in Tables 3 through 9. Laboratory reports and data quality review are included in Appendix C for the analytical data generated during field work for the Risk Assessment Work Plan (Ash Creek, 2010a), soil vapor and ambient air monitoring since Addendum 2 of the RI Work Plan, and soil and groundwater

sampling for Addenda 2 and 3 of the RI Work Plan. Laboratory reports and data quality review for quarterly groundwater monitoring events are included in each respective report.

5.1 Soil

Isoconcentration contours for PCE and TCE are provided on Figures 11 through 16. The contour plots show PCE and TCE concentration contours from the following intervals: 0 to 4 feet bgs, 4 to 15 feet bgs, and 15 to 57 feet bgs. The data set appears to identify three source areas for PCE and TCE at the Facility.

Soil concentrations indicative of on-site soil sources of VOCs were identified for areas where concentration peaks were evident in the soil concentration contours. The three on-site source areas identified were: the area near the former solvent ASTs and access drive where empty drums were stored; the area near the southwest corner Warehouse 2/north AST tank farm; and an area beneath Warehouse 3B and the Clean Room.

The documented extent of halogenated VOCs in soil encompasses the middle and western half of the Facility, extending from North Russell Street to the southern edge of the Facility warehouse complex. Halogenated VOCs are present within 5 feet of the ground surface at the source areas and at deeper depths at distance from the source areas, except for the southwest corner Warehouse 2 area. Halogenated VOCs at the surface near the southwest corner of the Warehouse 2 area were likely inadvertently removed during construction of the loading dock and tank farm in the late 1980s. Halogenated VOCs extend through the vadose zone to groundwater and have migrated off the Facility in soil vapor and groundwater and, to a lesser extent, in soil.

5.2 Soil Vapor and Ambient Air

Soil vapor and indoor air data have been collected from the Facility and from locations within several blocks adjacent to the Facility. Soil vapor and ambient air sampling locations are shown on Figure 17. Additionally, outdoor air sampling has been completed on the Facility, as well as at three locations in the vicinity of the Facility. Soil vapor and ambient air sampling have been previously reported to DEQ in:

- RI Work Plan Addendum No. 3 (Ash Creek, 2008);
- Risk Assessment Work Plan (Ash Creek, 2010a);
- Vapor Sampling Results Memorandum (Ash Creek, 2010b);
- Periodic update memoranda for specific off-site building testing locations in 2009 and 2010; and
- Results of Ambient Air Sampling (Ash Creek, 2011).

5.2.1 Soil Vapor and Ambient Sampling Locations and Frequency

Soil vapor and ambient air sampling locations are shown on Figure 17. Soil vapor and ambient air samples were collected for the RI at the following locations and frequency.

- Shallow soil vapor data have been collected on several occasions from the permanent shallow soil vapor sampling points installed on the Facility and the remainder of the Site.
- Intermediate and deep subsurface soil vapor data were collected on one occasion from a combination of subsurface soil vapor sampling points and SVE IRAM wells. Subsurface samples (5 to 15 feet deep) were collected from S-2-11, and deep subsurface samples were collected from VP-16 and VP-17 (22 to 27 feet deep) and from SVE IRAM wells D-2i and D-8i (17 to 33 feet deep).
- Indoor ambient air samples have been collected on several occasions from within the Facility office and warehouse buildings, and at two outdoor ambient locations on the Facility.
- Indoor ambient air samples have been collected on several occasions at several off-site buildings.
- Outdoor ambient samples were collected to evaluate area conditions at three sampling stations in the vicinity of the Facility (locations A-1 through A-3). Halogenated VOCs were not detected in these samples.

5.2.2 Soil Vapor Results

Concentration results for PCE and TCE in the shallow soil vapor are shown on Figures 18 and 19. These contours were generated: (1) using the average PCE and TCE concentrations measured prior to the SVE IRAM in 2009 for locations within the radius of influence of the SVE IRAM system; and (2) average of measured PCE and TCE data for data points outside the system's radius of influence.

Figures 18 and 19 show the soil vapor plume extending from the vicinity of the former solvent AST location and below the Facility warehouses. Dashed lines are used for the contours in two areas where soil vapor concentrations are influenced by other sources or there is uncertainty associated with the soil vapor results. In the northwest portion of the shallow soil vapor plume area, the measured concentrations in VP-8 are elevated compared to concentrations in VP-9 and VP-13. VP-8, VP-9, and VP-13 are all a similar distance from VP-14. This indicates an additional contributory source is present in the vicinity of the 807 North Russell Street building. A former dry cleaner was located at 819 North Russell Street. Work conducted by a third party involved with a possible sale of this property indicated a release of dry cleaning solvents has occurred. In the southeast portion of the shallow soil vapor plume area, PCE concentrations in VP-21 are elevated compared to VP-19 and VP-25. There is uncertainty regarding whether the VOCs in soil vapor at VP-21 are from the Facility or are the result of a contributory source that may be present in the vicinity of VP-21.

On Figures 18 and 19, the final contour corresponding to the occupational vapor intrusion risk-based concentration (RBC) for soil vapor is shown. Concentrations of PCE and TCE in shallow soil gas are highest in the vicinity of VP-14, near the former solvent ASTs, as well as at VP-3 and VP-4. Soil vapor concentrations were above the occupational soil vapor RBC in soils along the parts of the blocks of North Russell Street and the right of way of North Albina Avenue. VP-24 represents the farthest downgradient location where soil vapor concentrations were detected above the occupational soil vapor RBC, prior to implementation of the SVE IRAM. In both on-site and off-site soil vapor sampling locations, significant concentration decreases in the shallow soil gas were observed after implementation of the SVE IRAM system.

Concentrations of PCE and TCE were also detected in soil vapor at deeper intervals at the Site (18 to 32 feet bgs). The deeper soil gas sampling locations are shown on Figure 17. The detected concentrations are significantly higher than the concentrations observed in shallow soil vapor at those locations. Each deep soil vapor sample location was located at a source area (see additional discussion in Section 5.4.1), so the samples represent the highest concentrations on the Site. Because there are few deep soil vapor sample data points available, the contours were not plotted. The distribution of VOCs in deep soil vapor will follow a similar distribution as subsurface soil and groundwater concentrations.

In summary, the soil vapor data indicate that a mass of halogenated VOCs in soil vapor was located at depth beneath the Facility. The shallow soil vapor data indicate that halogenated VOCs were present in shallow soils at much lower concentrations than at depth.

Soil Vapor Screening for Vapor Intrusion at Areas Not Represented by Air Monitoring Data. As described previously, ambient air monitoring was generally limited to the Facility and the north and west blocks adjoining the Facility, corresponding to the area of perceived vapor intrusion risks. VOCs are present in soil vapor beyond these locations. In this section, soil vapor data are screened against vapor intrusion RBCs to verify that the ambient air monitoring program sufficiently encompassed the area of potential vapor intrusion risks.

Table 11 is a summary table presenting concentrations of soil vapor COPCs from soil vapor sample locations outside of the area included in the indoor ambient air monitoring program. This includes locations VP-12, VP-13, VP-18, VP-19, VP-20, VP-21, VP-22, VP-23, VP-24, VP-25, and VP-26. The area represented by these samples includes areas zoned for occupational land uses and Central Employment, so occupational RBCs and urban residential RBCs were applied. The concentration of TCE in VP-24 at the 2400 block of North Mississippi Avenue exceeded the urban residential RBC by a factor of approximately 4 (current land use in the area of VP-24 is occupational). These data indicate that the VP-24 area marks the approximate distal extent of potential soil vapor risks, and provide additional lines of evidence that vapor intrusion risks are not present at the Site beyond the areas evaluated with ambient sampling.

5.2.3 Ambient Air Results

Concentration results for PCE and TCE in indoor and outdoor ambient air are shown on Figure 20. Prior to implementation of the SVE IRAM system, concentrations of PCE and/or TCE were above DEQ's ambient air RBC for generally one event in some Facility buildings and other buildings within the vapor intrusion study area. After operation of the SVE IRAM began in 2009, concentrations of halogenated VOCs in Facility and off-site buildings were significantly reduced to concentrations that were at or below DEQ's ambient air RBCs.

Indoor ambient air sampling locations were initially selected based on proximity to the Facility. Additional indoor ambient air sampling locations were added to include buildings within the area where unacceptable risks were predicted based on soil vapor and groundwater data (see additional discussion in 5.2.2 and 5.3). PCE and TCE were the primary COPCs that were detected in indoor and outdoor ambient air; however, compared to indoor air, PCE and TCE were detected infrequently in outdoor air. Benzene, methylene chloride, 1,4-dioxane, and others have also been detected above the occupational RBC for ambient air, each of which can be present as a result of regional background conditions from other industrial sources or vehicle operation. The indoor ambient air sampling results are described below.

- At the Facility, concentrations of PCE and TCE were consistently detected in the majority of the pre-SVE IRAM indoor air sampling events.
- North of the Facility:
  - At 807 North Russell Street, concentrations of PCE and TCE were detected above RBCs in a sample collected from the unoccupied basement. Ambient air concentrations from samples collected within the occupied spaces of 807 North Russell were relatively lower. The relative concentration differences observed between the ambient air concentrations in the 807 North Russell Street Building compared to 816 North Russell Street and 733 North Russell Street indicate the 807 North Russell Street building has been impacted by the adjacent former drycleaner at 819 North Russell.
  - At 733 North Russell Street, concentrations of PCE and TCE were detected in samples from the unoccupied basement at concentrations that were significantly higher than samples collected within the first floor occupied spaces.
  - At 651 North Russell Street, halogenated VOCs were detected in samples collected from occupied spaces.
  - At 2624 North Borthwick Avenue, ethylbenzene and halogenated VOCs, including PCE, TCE, and 1,2-dichloroethane (1,2-DCA), were detected in ambient air samples collected from the occupied spaces. The detected VOC concentrations are inconsistent with the distribution of VOCs delineated as resulting from the Facility. Soil vapors would be expected to become more diffuse with distance from the Facility. There are no known conduits between the Facility

and this address that would otherwise impact the property between the two facilities. Additionally, soil vapor concentrations from VP-20 do not indicate a vapor intrusion source, which suggests an interior source at this location. Based on these lines of evidence, the VOCs detected in this building are not site-related.

- West of the Facility:
    - At 2405 North Albina, 2503 North Albina, and 816 North Russell, multiple rounds of indoor ambient samples have been collected from the occupied spaces and halogenated VOCs were detected in each of these sampling events.
- East of the Facility:
    - Indoor ambient air samples were not collected because PCE and TCE concentrations in the soil vapor data in VP-19 and VP-25 are below soil vapor RBCs for vapor intrusion.
- South of the Facility:
    - Buildings south of the Facility were not sampled based on the results of soil vapor sampling from VP-12.

The outdoor ambient air sampling results are described below.

- At the Facility, concentrations of PCE and TCE were infrequently detected in outdoor air. In March of 2009, PCE and/or TCE were detected at sampling locations VP-4A and VP-5A, and PCE was detected in the sample from July of 2009.
- For locations away from the Facility, PCE and TCE were largely undetected. The only occasion where PCE or TCE was detected was PCE in the September 2008 sample from A-1.

In summary, contaminant sources have impacted ambient air in buildings on the Facility, as well as buildings to the north and west. PCE and TCE were largely undetected in outdoor air. Contributory sources (not Facility related) to indoor air quality at 2624 North Borthwick, the building at the Northeast Corner of North Page and North Borthwick, and 819 North Russell appear to be present (see additional discussion of contributory sources in Section 5.4.2).

5.3 Groundwater

The groundwater monitoring network for the Site is shown on Figure 2. Quarterly groundwater monitoring has been ongoing since the RI began in 2006. Monitoring wells at the Site were installed during the following field events.

- Monitoring wells installed prior to RI. MW-1 through MW-4 were installed in 2003 by Wohlers (Wohlers, 2003).

- Monitoring wells installed for initial RI. MW-5 and MW-5B were installed in 2006. The well screen intervals were selected based on depth-discrete groundwater sampling as presented in the Addendum 2 of the RI Work Plan (Ash Creek, 2006c).
- Monitoring wells installed for Addendum 2 RI. MW-6 through MW-10 were installed in 2007. The well screen intervals were selected based on depth-discrete groundwater sampling as presented in the memorandum titled Initial Results – RI Addendum No. 2 Implementation, (Ash Creek, 2007a).
- Monitoring Wells Installed in 2010 for Risk Assessment Work Plan (Ash Creek, 2010b). MW-11 through MW-16 were installed in summer 2010. The well screen intervals were selected based on depth-discrete groundwater sampling as presented in the memorandum titled Summary of Reconnaissance Groundwater Monitoring and Proposed Monitoring Well Placement (Ash Creek, 2010b).

The dissolved-phase groundwater plume extends from the Facility to the west-southwest. Plume maps showing the extent of PCE, TCE, and vinyl chloride are shown on Figures 21 through 23, respectively. On the figures, the plume extent is defined by the 5 micrograms per liter (µg/L) contour for PCE and TCE and the 2 µg/L for vinyl chloride representing the area of the plume that exceeds EPA's Maximum Contaminant Level (MCL) for the respective compound. The plume is between 600 and 800 feet wide and approximately 2,000 feet long. The terminus of the plume has not been fully defined by sampling because proposed monitoring well MW-17 was not installed. The location for proposed MW-17 is on private property, and the owner has not granted access for the well installation.

Under baseline conditions described in this RI report, concentrations of PCE and TCE have generally been consistent since groundwater monitoring was initiated. Figures 24 and 25 show concentrations of PCE and TCE over time in monitoring wells MW-4, MW-5, MW-8, and MW-10. The downward trend in MW-4 corresponds to the period of operation of the SVE IRAM system.

Efforts were made to estimate the terminus of the plume assuming a first-order decay model. Natural degradation of most dissolved-phase chlorinated solvents typically fit a first-order decay model. Under this model, the log of the concentration along the plume centerline plotted versus distance will fit a straight line.

Data from wells completed along the plume centerline (MW-5, MW-8, MW-10, MW-13, and MW-14) are plotted on Figure 26. The data that are plotted represent the exposure point concentrations (EPCs) for each well used in the risk assessment (Section 7.0). These data do not fit a straight line for the log concentration versus distance. Potential explanations for the poor fit include:

- Wells not on the plume centerline or not screened at appropriate depth interval;
- Changes in hydrogeology;

- Changes in groundwater chemistry; or
- Contributions from another source.

The first two explanations are inconsistent with site data. Extensive depth-discrete sampling was completed to define monitoring well locations and screen interval depths. The hydrogeology does change approximately at MW-10: the gradient flattens and soil type changes from fine sand to gravel. These changes could result in an increased groundwater velocity (increase in hydraulic conductivity greater than the decrease in gradient), and a corresponding increase in distance needed for the same amount of chemical degradation. However, this has a tendency to "stretch" the plume, making it longer and narrower. As shown on Figures 21 and 22, the plume width increases slightly in the downgradient area.

Inconsistencies between the expected behavior and measured concentration of the groundwater plume, together with the "pinching" of the plume and subsequent spreading as it passes North Interstate Avenue suggest a source of chlorinated solvents in the vicinity of MW-10. This is further supported by the presence of PCE, TCE, and other halogenated VOCs at shallower elevations than the upgradient sources as shown on Figure 5.

Measured concentrations of PCE (117 µg/L) and TCE (41 µg/L) at MW-14 are approximately equal to the Oak Ridge Laboratory Tier II secondary chronic value (SCV) for PCE of 98 µg/L and the TCE SCV of 47 µg/L (DEQ/EPA, 2005), suggesting that aquatic ecological risks will be acceptable. The measured concentrations of PCE (117 µg/L) and TCE (41 µg/L) at MW-14 exceed the respective EPA National Recommended Water Quality Criteria (for whole organism consumption) for PCE of 3.3 µg/L and TCE of 30 µg/L (DEQ/EPA, 2005) and the Portland Harbor fish consumption screening level value (SLV; Portland Harbor Joint Source Control [JSCS] Specific Fish Consumption Rate [DEQ/EPA, 2005]) for PCE of 0.33 µg/L and TCE of 3.0 µg/L. Given the estimated travel distance between MW-14 and the transition zone of approximately 450 feet, the estimated PCE concentration at the transition zone would likely exceed the detected EPA National Recommended Water Quality Criteria (for whole organism consumption) by a factor of less than 10. This information is intended to provide context regarding the uncertainty based on the inability to install MW-17. They are not intended to provide definitive conclusions with respect to potential risks to human receptors or ecological endpoints in the Willamette River.

Groundwater Screening For Vapor Intrusion at Areas Not Represented by Air Monitoring Data. Groundwater data were screened against vapor intrusion RBCs to verify that the ambient air monitoring covered the area of potential vapor intrusion risks. Following the DEQ vapor intrusion guidance for groundwater (DEQ, 2010), data from the uppermost portion of the water table aquifer were used for the occupational and urban residential vapor intrusion screening because the rate of chemical diffusion out of groundwater is controlled by contaminant concentrations at the water-soil interface. Therefore, only

groundwater data representative of conditions at the water-soil interface are applicable to evaluate chemicals potentially volatilizing from groundwater.

Table 12 is a summary table presenting detection frequency, MRL ranges, minimum and maximum concentrations, and the urban residential vapor intrusion RBC for each of the VOC groundwater COPCs. The data set used for the groundwater vapor intrusion screening included the following samples: B-39-1 (51-55), B-41-1 (48-52), B-46-1 (43-47), B-48-1 (36-40), B-49-30 (26-30), B-50-30 (26-30), B-51-34 (30-34), B-60 (61-65), B-61 (61-65), B-63 (31-35), B-64 (26-30), B-65 (31-35), B-66 (31-35). The sample locations are shown on Figures 21 and 22. The area represented by these samples represents a mix of current occupational and reasonably likely future urban residential land uses. Therefore, the more conservative urban residential RBCs were selected for the groundwater vapor intrusion screening.

None of the concentrations of VOC groundwater COPCs came within an order of magnitude of exceeding the urban residential vapor intrusion RBCs. The maximum concentrations of PCE (34.2 µg/L) and TCE (8.8 µg/L) were detected in B-60, located just north of the 807 North Russell Building. The groundwater vapor intrusion screening indicates that vapor intrusion risks are not present beyond the area that includes the Facility and adjoining blocks of North Russell Street and North Albina Avenue. Therefore, the ambient air sampling adequately covered the area with potential for vapor intrusion from groundwater.

5.4 Source Identification

The sources of chlorinated VOCs identified at the Site and the proportionate release volumes are discussed in this section. These source areas include chlorinated VOCs and, to a lesser extent, petroleum hydrocarbons. Additionally, a discussion of possible off-site sources of chlorinated VOCs is described in this section.

5.4.1 On-Facility Sources

Based on the RI soil, soil vapor, and groundwater data set, the following three areas at the Facility have been identified as sources of chlorinated VOCs:

- The area of the former solvent ASTs and drum storage area along the Albina Avenue Facility access drive;
- Warehouse 2/North AST Farm; and
- The area beneath Warehouse 3B and the Clean Room.

The sources are identified based primarily on the VOC distribution at the Facility. Historical handling and storage of solvents were also considered. As described previously, sources were identified based on areas

where localized concentration peaks were observed. Each of these three areas is shown on Figure 27, and discussed further below.

- Former Solvent ASTs/Empty Drum Storage along Access Drive. The former solvent ASTs operated from approximately 1963 (based on 1963 aerial photograph) to approximately 1989. In 1989, these ASTs were replaced with compartmentalized ASTs, and secondary containment was added (containment was not present until approximately 1989). Prior to approximately 1989, when secondary containment was added and the area was paved, solvents were transferred from the ASTs over bare ground. No releases have been reported from these ASTs, so the release mechanisms are presumed to result from product transfer over the course of more than 25 years of product transfer. No reported releases explain the localized concentration peak around those ASTs, and the only explanation available is that the source resulted from occasional small releases over the course of more than 25 years. The amount of VOCs in soil and groundwater are consistent with the activities reported in this area.

  The area along the north edge of the access drive was utilized for outdoor storage of empty used drums, as shown in the aerial photographs from 1961, 1963, 1967, 1970, 1972, 1974, 1976, and 1977. This area was unpaved during the period that drums were stored on the north side of the access drive. This information indicates outdoor drum storage occurred in the time period of approximately 1961 through at least 1977.

- Warehouse 2/North AST Farm. Warehouse 2 (and the area within the Warehouse 2 footprint prior to its construction) is the primary Facility blending and full drum storage area. The area outside of Warehouse 2 was reported to be used for product blending before construction of Warehouse 2. The timing of the outdoor blending activities has not been determined. Aerial photographs from 1970 first show an outdoor pad, and aerial photographs from 1972 and 1974 also show the pad and outdoor drum storage. The aerial photograph from 1976 shows that Warehouse 2 has been constructed. Based on the construction sequence at the Facility, outdoor blending and full drum storage occurred in the time period of approximately 1970 through 1974. The available information does not reveal an exact source for the release in this area. The amount of VOCs in soil and groundwater are generally consistent with infrequent releases during product handling activities reported in this area.

- Warehouse 3B/Clean Room. The area corresponding to the location of Warehouse 3B and the Clean Room was developed with residential properties until the early 1970s. Information from the historical aerial photographs prior to construction of Warehouse 3B and the warehouse where the Clean Room would later be located do not reveal outdoor use of these areas for packaging or storage. By 1978, when these structures were built, these warehouses were used for packaged product storage; filling did not occur in these structures. The warehouse adjacent to Warehouse 3B was modified to become the Clean Room in 1998, and high-purity alcohols were exclusively handled in this area. Chlorinated solvents were not handled in the Clean Room. This

information does not reveal a decisive activity resulting in the release in this area. The information indicates that the outdoor area corresponding to the location of Warehouse 3B and the Clean Room was undeveloped from approximately 1970 to 1978.

In the absence of a reported release of chlorinated solvents, the origin of the chlorinated solvent sources relates to a number of small releases over an extended period of time. These releases were either undetected at the time or presumed to be *de minimis*. The cumulative effect of these multiple small releases has resulted in the soil, groundwater, and soil vapor/ambient air conditions currently observed at the Site.

A conservative estimate of the approximate mass of PCE and TCE present in soil and soil vapor before construction and operation of the SVE IRAM was developed based on the concentrations of PCE and TCE measured at the Facility. In summary, at least 180 gallons (1,100 kilograms) of PCE and TCE were present in Facility soil prior to beginning operation of the SVE IRAM. The estimate is conservative since it does not account for dissolved-phase VOCs resulting from migration of soil sources to groundwater, or mass that has already been degraded or volatilized. It also likely underrepresents the pre-SVE IRAM mass in the soil and soil vapor, as the estimated in-place mass (1,000 kilograms PCE and 100 kilograms TCE) approximately equals the amount of PCE and TCE removed to date by the SVE IRAM system (1,450 kilograms), as reported in Ash Creek, 2011. While the mass estimate underestimates the total residual solvent mass at the Facility, it is useful for describing the proportionate mass of PCE and TCE in each source area, summarized below.

Pre-SVE IRAM Estimate of PCE and TCE Mass in Place

	Kg	gal	%
PCE			
Solvent Tank/Empty Drum Storage next to access drive	565	90	58%
Warehouse 2/North AST Area	240	40	23%
Warehouse 3B/Clean Room	180	30	18%
TCE			
Solvent Tank/Empty Drum Storage next to access drive	75	15	67%
Warehouse 2/North AST Area	35	5	31%
Warehouse 3B/Clean Room	<5	<5	2%
Cumulative			
Solvent Tank/Empty Drum Storage next to access drive	640	105	58%
Warehouse 2/North AST Area	275	45	25%
Warehouse 3B/Clean Room	180	30	16%
Total	1,095	180	--

Based on the mass estimates summarized above, the area in the vicinity of the former solvent tank held the majority of the VOC mass (approximately 60 percent), followed by the Warehouse 2/Truck Alley area (approximately 25 percent), and the Warehouse 3B/Clean Room area (approximately 15 percent).

5.4.2 Possible Off-Site Sources

During the course of the RI, four areas were noted where concentrations of chlorinated VOCs were inconsistent with the distribution of contamination observed to originate from the Facility. Each of these areas is described in more detail below.

North End North Borthwick. Ambient air samples were collected in the building located at 2624 North Borthwick Avenue on four occasions from June 2009 to August 2010. In two of the four sampling events, the detected concentrations in this building exceeded screening levels with concentrations that were significantly higher than other buildings that were located between the Facility and 2624 North Borthwick (Figure 20). The soil vapor concentrations at the intermediate location were below screening levels and were consistent with the distribution of VOCs from the Facility. The weight of evidence indicates that soil vapor from the Facility does not impact ambient air quality at 2624 North Borthwick and the source of the VOCs in ambient air at 2624 North Borthwick originate from an indoor source.

South End North Borthwick. The PCE concentrations in VP-21 (adjacent to warehouse/manufacturing Facility at NE Corner North Borthwick Avenue and North Page Street) are higher than VP-25, closer to the Facility source areas. Therefore, these VOCs are not believed to be derived from the Facility. The address of this business is 2345 North Ross Avenue.

Former Cleaner at 819 North Russell. A dry cleaner was formerly located within the building at 819 North Russell Street. The soil vapor contours shown on Figures 18 and 19 are dashed in the vicinity of this building to reflect that an additional source of chlorinated VOCs is present. Soil vapor concentrations in VP-8 were the highest of the off-site VOC concentrations. Soil vapor data from VP-9, located a similar distance from the on-site source areas, are approximately two orders of magnitude lower than VP-8. VOC concentrations in soil exhibit a similar distribution as the soil vapor data (Figures 11 through 16).

Downgradient Portion of Groundwater Plume. As described in Section 5.3, the dissolved-phase constituent plume appears to be impacted by an additional source of VOC contamination in the vicinity of North Interstate Avenue.

6.0 Land and Beneficial Water Use Determination Summary

The purpose of the Land and Beneficial Water Use Determination (BUD) is to document historical, current, and reasonably likely future land and water uses at the Facility and adjacent properties. The results of the BUD were used to support development of the Conceptual Site Model (CSM) for the Facility.

The BUD for the Facility was presented in the Risk Assessment Work Plan (Ash Creek, 2010a). The BUD was completed in accordance with DEQ guidance documents (DEQ, 1998a and 1998b). DEQ provided comments for the risk assessment work plan in their letter dated May 4, 2010. A summary of the BUD, which reflects the revisions based on DEQ's comments in their letters dated January 19, 2012 and August 15, 2013 is provided below.

6.1 Locality of Facility

The locality of facility (LOF) is defined by DEQ (1998) as: "any point where a human or an ecological receptor contacts or is reasonably likely to come into contact with facility-related hazardous substances. The locality of the facility takes into account the likelihood of the contamination migrating over time so is typically larger than the facility." At the Site, this corresponds to the area comprising the Facility, the areas of off-site soil vapor impacts originating from contaminant sources at the Facility, and the area downgradient of the Facility that is encompassed by the dissolved-phase groundwater plume. The extent of the dissolved groundwater plume has not been fully determined, but is presumed to reach the Willamette River. Determination of the downgradient extent of the groundwater plume is complicated by the denied private party access for proposed well MW-17, at the end of River Street near the Fremont Bridge, and the likelihood that the downgradient portion of the plume may be co-mingled with contamination from at least one other source (see additional discussion, Section 5.4.2). Figure 28 shows the LOF based on the soil, soil vapor and ambient air, and groundwater results from the RI. The downgradient extent of the LOF is defined by the groundwater-surface water transition zone at the Willamette River.

The vertical extent of the LOF includes the impacted soils on the Facility, soil vapor and ambient air, and the vertical extent of the dissolved-phase VOC plume. Close to the Facility, the LOF extends approximately 45 feet into the saturated zone. From North Albina Avenue to the west, the vertical LOF includes only the groundwater plume, extending beneath the water table interface for approximately 45 feet. At MW-14, the top of the dissolved-phase plume occurs 10 to 15 feet beneath the water table. The plume is approximately the same thickness in this area.

6.2 Site Setting, Land Use, and Zoning

The Facility is surrounded by industrial and commercial land uses and limited urban residential land uses. Figure 28 is a map of the Site vicinity showing zoning and land use planning. A summary of the land uses in the Site vicinity is as follows:

- The area north of the Facility is bounded by mixed-use commercial- and residential-zoned buildings. The commercial operations include Streimer Sheet Metal and their subsidiaries operating in the buildings adjacent to the northern Facility boundary across North Russell Street. The closest building with a current urban residential use is an apartment building situated 450 feet to the northwest of the Facility.
- The area east of the Facility contains commercial properties including automotive repair and manufacturing operations.
- The area south of the Facility contains primarily warehouses.
- The area west of the Facility is bounded by three commercial buildings that include Mint Restaurant, two buildings occupied by the Straub Collaborative, and a commercial photo studio.

Three zoning designations are applicable to the Site and surrounding area. Current zoning information indicates the Facility is designated general industrial (IG1) use by the City of Portland's Bureau of Planning. The Site vicinity is primarily designated as IG1, with some central employment (Ex) and Heavy Industrial (IH). As defined under the City of Portland Title 33, Chapter 33.440 regulation, the zones have the following descriptions.

- General Industrial (IG1) – IG1 areas generally have smaller lots and are mostly developed, with sites having high building coverages that are usually close to the street. IG1 areas tend to be the city's older industrial areas.
- Central Employment (Ex) – Ex zoning allows mixed uses and is intended for areas in the center of the city that have predominantly industrial-type development. Residential uses are allowed, but are not intended to predominate or set development standards for other uses in the area.
- Heavy Industrial (IH) – IH zoning provides areas where all kinds of industries may locate, including those not desirable in other zones due to their objectionable impacts or appearance.

Current zoning information indicates adjacent properties along North Page Street, North Albina Avenue, and North Borthwick Avenue, and the majority of the immediate vicinity of the Facility, are also designated for IG1 (see Figure 28). The apartment building situated 450 feet to northwest of the Facility is located on property that is zoned Ex. The zone allows mixed uses and is intended for areas in the center of the city that have predominantly industrial-type development. The intent of the zone is to allow industrial, business, and service uses that need a central location. Residential uses are allowed, but are not intended to

predominate or set development standards for other uses in the area. The Ex zoning adjacent to the Facility starts at the intersection of North Russell Street and North Albina Avenue, and continues west to North Interstate Avenue. Properties on either side of North Russell Street are zoned Ex.

Future Uses. The Facility and adjacent neighborhood are currently, and are reasonably expected to remain, zoned IG1 and Ex for the foreseeable future. Also, the Facility and most of the remainder of the Site are designated by the Portland Comprehensive Plan Map as Industrial Sanctuary in the Lower Albina sub-district of the North/Northeast Quadrant of the Central City 2035 Plan (see http://www.portlandonline.com/bps/index.cfm?c=53289&). While not a zoning designation, the Comprehensive Plan Map is an official description of where and to what level future zoning should be permitted.

6.3 Beneficial Water Use Determination

Water at the Site is supplied by the City of Portland municipal system. This water is obtained from surface water or groundwater sources miles to the east of the Facility. Beneficial uses of groundwater and surface water are described below.

- Groundwater. In general, shallow groundwater within the Portland area is not used for drinking water. The Troutdale sand and gravel aquifer is a source of drinking water in the region; however, there are no identified drinking water uses of the Troutdale sand and gravel aquifer within the immediate vicinity of the Facility or within the footprint of the understood extent of the dissolved-phase plume that originates at the Facility.

  Records were found for two water supply wells in the general vicinity of the Facility. The approximate locations of these wells are shown on Figure 2. Copies of the well logs are included in Appendix D. Well #1009, installed in 1952, was located in the general vicinity of the interchange of Interstate 5 (I-5) and Interstate 405 (I-405). This well is cross-gradient from the Facility and, based on the presence of the freeways, presumed to be no longer in use. Well #1010, installed in 1958, is located approximately one block west of the Facility. It was installed to supply a galvanizing plant that is no longer present. Based on a 1993 interview with the property owner, the well, if present, is capped and located beneath a paved parking lot (Applied Geotechnology, 1993).

- Surface Water. There are no identified surface water bodies between the Facility and the Willamette River, located approximately 2,000 feet southwest of the Facility. The dissolved-phase constituent plume attenuates as it approaches the Willamette River. The axis of the plume is directed at approximately Willamette River Mile 11.3. The Willamette River is considered to provide a beneficial use of water by supporting aquatic habitat, recreation, and aesthetic uses.

Anticipated future uses of groundwater within and in the area of the dissolved-phase constituent plume are the same as current uses. Properties and potential users within the area above the plume are connected to

the public water supply system. No current domestic or industrial use of groundwater was identified. The public water supply system is expected to meet future area drinking and other domestic water needs. A beneficial use of surface water for maintenance of aquatic habitat, recreation, and aesthetic uses may be present based on the final LOF determination. A beneficial water use checklist, consistent with DEQ guidance, follows.

Beneficial Water Use	Current Use?	Future Use?	Justification
Drinking Water	No	Yes	The Site is served by municipal water and no groundwater wells are present. Industrial groundwater use is not likely but evaluation of pathway is required by DEQ.
Irrigation	No	Yes	The Site is served by municipal water and no groundwater wells are present. While unlikely based on current land uses, a well could be legally installed within the LOF for a future irrigation use, although it would be impractical to do so.
Livestock	No	No	No livestock are raised in the LOF and no groundwater wells are present.
Industrial	No	Yes	The Site is served by municipal water and no groundwater wells are present. While unlikely based on current land uses, a well could be legally installed within the LOF for a future industrial use, although it would be impractical to do so.
Engineering	No	Yes	The Site is served by municipal water and no groundwater wells are present. While unlikely based on current land uses, a well could be legally installed within the LOF for a future engineering use, although it would be impractical to do so.
Aquatic Habitat	Yes	Yes	The Willamette River provides for the protection of aquatic species. It is currently presumed the LOF includes the discharge point into the Willamette River.

Beneficial Water Use	Current Use?	Future Use?	Justification
Recreation	Yes	Yes	The Willamette River is used for fishing and other recreation. It is currently presumed the LOF includes the discharge point into the Willamette River.
Aesthetic Use	Yes	Yes	The Willamette River has aesthetic beneficial uses for the community. It is currently presumed the LOF includes the discharge point into the Willamette River.

7.0 Human Health Risk Assessment

This section describes the scope and results of the baseline HHRA for the Site. The HHRA was conducted in accordance with the Risk Assessment Work Plan (Ash Creek, 2010). The HHRA follows: the protocol for performing risk assessments under OAR 340-122-084; DEQ's Guidance for Conduct of Deterministic Human Health Risk Assessments (DEQ, 2000); and DEQ's guidance, Risk-Based Decision Making (RBDM) for the Remediation of Petroleum-Contaminated Sites (DEQ, 2003). The HHRA evaluates the magnitude of adverse impacts to human health associated with actual or potential exposure to Site-related COPCs. In accordance with EPA and DEQ guidance, the HHRA includes: an Exposure Assessment; Toxicity Assessment; and Risk Characterization. Section 7.5 includes an uncertainty analysis for the HHRA.

In its letter dated January 19, 2012, DEQ provided comments on the RI report, as well as general comments on the HHRA. In a second comment letter dated August 15, 2013, DEQ provided final comments on the HHRA. The revisions in this revised HHRA reflect resolution of the DEQ comments received in both letters.

7.1 Exposure Assessment

The objectives of the exposure assessment are to:

- Identify potentially exposed populations;
- Identify potentially complete exposure pathways; and
- Measure or estimate the magnitude, duration, and frequency of exposure for each receptor (or receptor group).

Figure 29 shows the CSM for the Facility. This model provides the framework for assessing potential exposure pathways to be considered in the risk assessment. To be considered complete, an exposure

pathway must have: (1) an identified source of COPCs; (2) a release/transport mechanism from the source; and (3) a receptor to whom contact can occur. The following summarizes the analysis of these factors that were used to develop the CSM.

7.1.1 Potentially Exposed Populations

The land use analysis demonstrated that current and reasonably likely future land uses in the LOF are primarily industrial and commercial, although urban residential uses are allowed within a small portion of the LOF. Current or reasonably likely future groundwater uses for human consumption are not identified. However, DEQ is requiring evaluation of the industrial groundwater pathway because of the presence of the gravel aquifer beneath the LOF that is a source of groundwater for industrial use elsewhere in the region.

At industrial facilities, potential populations include full- or part-time employees. Facility maintenance or new construction could require construction and excavation workers. Urban residential development, while not a current pathway, was retained for evaluation within the area of Ex zoning (see Figure 28). Therefore, potential receptors include occupational workers, urban residents, construction workers, and excavation workers.

In addition, as discussed in Section 6.3, it is uncertain, but presumed, that a portion of the Willamette River is within the LOF. So, for the purpose of the HHRA, a subsistence fisher was retained as a potential receptor.

7.1.2 Potentially Complete Exposure Pathways

The exposure pathways to receptors that are evaluated in this HHRA include the following.

- Direct Contact – Incidental ingestion of, dermal contact with, and inhalation of vapors from soil (occupational, urban residential, construction worker, and excavation worker receptors). Direct contact with soil containing COPCs is possible for each receptor except the subsistence fisher. Groundwater occurs at depths of approximately 60 feet bgs at the Facility and between 25 and 30 feet bgs east of North Interstate Avenue. Direct contact with groundwater is not likely under current exposure pathways, but evaluation of this pathway is required by DEQ.
- Indoor Air, including vapor intrusion – Inhalation of VOCs infiltrating indoors from soil or groundwater (occupational and urban residential receptors).
- Outdoor Air – Inhalation of VOCs from soil or groundwater is possible for occupational and urban residential receptors. Additionally, inhalation of VOCs that volatilize from groundwater with construction and excavation worker exposure is evaluated separately from the default excavation worker evaluation.

- Water Use – Ingestion, dermal contact, and inhalation of vapors from industrial use of groundwater (occupational receptors). Groundwater is not currently used and future use for industrial purposes is not reasonably likely based on the availability of municipal water. DEQ is requiring evaluation of industrial water use. Groundwater use is not evaluated for urban residential exposures.
- Fish Consumption – Subsistence consumption of fish exposed to surface water impacted by groundwater.

7.1.3 Exposure Point Concentrations

Exposure point concentrations (EPC) representative of chemical concentrations in soil, groundwater, and ambient air were calculated to compare to toxicity criteria. The EPC for the COPCs were developed as discussed below. COPCs were identified in the Risk Assessment Work Plan (Ash Creek, 2010a) and are listed in Table 10. COPC tables from the Risk Assessment Work Plan (RAWP; Ash Creek, 2009) are included in Appendix E.

In 2011, subsequent to approval of the COPC list in the RAWP, DEQ's RBCs for total petroleum hydrocarbons (TPH) were updated to include soil gas RBCs for TPH compounds. In their January 2012 comments, DEQ requested evaluation of TPH as a COPC for soil vapor; soil TPH data were compared to soil RBCs to determine if soil vapor sampling would be required based on DEQ vapor intrusion guidance (DEQ, 2010). None of the concentrations of TPH-G or TPH-Dx in the RI data set exceed applicable soil RBCs for vapor intrusion. Therefore TPH should not be a COPC for soil vapor. Additionally, data collected during the 2002 Preliminary Assessment at deeper soil intervals than included in the RI data set (greater than 15 feet deep) were evaluated to assess whether these concentrations could provide a source of TPH-G or TPH-Dx for vapor intrusion. The maximum concentration of TPH-G in these data was 19,000 mg/kg (sample DP-7-50), and the maximum concentrations of diesel- and oil-range TPH were 9,220 and 16,300, respectively (sample HA-N-1). None of these results exceed the soil vapor-vapor intrusion RBC criterion of greater than 100,000 mg/kg. As described in Figure 1 of the DEQ vapor intrusion guidance (DEQ, 2010), soil vapor testing would not be required based on these sample results. Therefore, TPH-G and TPH-Dx are not considered COPCs for soil vapor.

Exposure Areas. In selecting data sets representative of the potential exposure pathways and receptors, consideration was given to both the lateral and vertical extent of the data to be used. For lateral extent, a receptor exposure area was defined representing the area typically occupied by a potential receptor. Exposure areas are represented on Figure 30. The exposure areas for the Site are summarized as follows:

- For soil, the extent of soil contamination associated with the Facility is virtually coincident with the Facility, so soil has only one exposure area (the Facility).
- For groundwater, exposures were evaluated using data from monitoring wells completed within gravel aquifer at multiple locations across the Site. The exposure area includes the gravel aquifer

beginning at 60 feet bgs at areas near the Site and 25 to 30 feet bgs at locations closer to the river (MW-14).

- For indoor air, specific exposure areas included: three areas on the Facility (office, warehouse, and shop); and six representative businesses adjacent to the Facility. To evaluate other indoor air exposure areas (apart from the 6 adjacent indoor building exposure areas identified above) where indoor ambient air was not collected, indoor exposure was evaluated based on concentrations at each gravel zone well location. The depth-discrete groundwater data at these locations was used to evaluate vapor intrusion concentrations at exposure points where indoor ambient air was not collected.
- For outdoor air, there are two exposure areas: the Facility; and the remainder of the Site.
- For surface water, the exposure area is the Willamette River at the edge of the LOF.

For vertical extent, occupational workers are assumed to be exposed to surface soil only (0 to 3 feet in depth). Excavation and construction workers are assumed to be exposed to soil up to typical depths of utilities (0 to 15 feet in depth). In groundwater, only chemicals present at the surface of the water table are able to volatilize into soil vapor. Therefore, data from the uppermost groundwater were used for volatilization from groundwater.

Data Sets. In selecting data representative of exposure point concentrations under baseline conditions, the following data were excluded.

- Data within the radius of influence of the SVE IRAM system, which includes ambient air data collected after implementation of the SVE IRAM in November 2009.
- Indoor air data from 2624 North Borthwick, as described in Section 5.2, indicate the VOCs detected in indoor air are from a source other than the Facility.
- Samples collected prior to the soil removal actions for the 2002 heating oil UST removal and vehicle pit decommissioning.

Note that indoor air data collected at 807 North Russell Street (adjacent to the former Campbell's Cleaner dry cleaner at 819 North Russell) are included in the exposure point concentration data sets. Because the risks within indoor air at 807 North Russell cannot be solely attributed to the former Campbell's Cleaners, 807 North Russell is evaluated in this HHRA. The corresponding uncertainty based on this additional source is discussed in Section 7.5.

In two cases, data collected after implementation of some IRAMs were used:

- Indoor ambient air data collected after November 2009 were used for the 651 North Russell building. This building may be within the fringe of the radius of influence of the SVE IRAM system and data may be biased low.
- Indoor ambient air samples collected within the Facility were collected after the initial office sub-slab venting IRAM was constructed and operated beginning in 2007. These data are used but are likely biased low for baseline purposes.

The following summarizes the data sets used for the EPC calculations for exposure areas where risks were calculated:

- Soil; Excavation and Construction Workers; Direct Contact – Data from soil samples collected within 15 feet of the ground surface.
- Soil; Occupational Worker; Direct Contact – Data from soil samples collected within 3 feet of the ground surface.
- Groundwater; Occupational Worker Use – Data from wells MW-8, MW-10, MW-12, and MW-14, each screened within the gravel or at the sand/gravel interface, were used to evaluate this pathway. MW-12 and MW-14 are completely screened in the gravel, and MW-8 and MW-10 are screened at the sand/gravel interface within the highest concentration zone. While not screened completely within the gravel zone, MW-8 and MW-10 best represent the groundwater concentrations that would be captured by a well screened in the shallowest portion of the gravel zone.
- Air Inhalation – Indoor and outdoor ambient air data collected before operations of the SVE IRAM in November 2009 were used to evaluate the vapor intrusion and volatilization to outdoor air pathways. Post-SVE IRAM data were used on two occasions for the 651 North Russell building and the Facility (as described previously).
- Vapor Intrusion from Groundwater – Areas away from the Facility where vapor intrusion was not evaluated using indoor ambient air data were evaluated using groundwater data. Groundwater data from the uppermost sample intervals from depth-discrete groundwater samples are used evaluate vapor intrusion from groundwater. Chemical diffusion out of groundwater is controlled by contaminant concentrations at the water-soil interface (water table). Thus, only groundwater data representative of the uppermost zone were used to the RBCwi to evaluate the potential for vapor intrusion.

Additional risk screening was completed for excavation worker vapor exposure and the subsistence fisher pathway. EPC for each of these pathways are described below.

- Excavation Worker; Air Inhalation – Groundwater data from MW-8 and soil vapor data from the permanent shallow soil vapor monitoring network were used to develop the EPCs for excavation

worker exposure to soil vapor coming from PCE and TCE in groundwater. This area represents the area where maximum groundwater concentrations are detected. Soil sources are not present, so volatilization from groundwater is the controlling vapor migration route in this area.

- Surface Water; Subsistence Fisher – This pathway is evaluated using groundwater data from MW-14.

Selection of Exposure Point Concentrations. In general, the 90-percent upper confidence limit (90% UCL) on the arithmetic mean concentration of COPCs (within each environmental medium of concern and within each exposure area) was used to evaluate the reasonable maximum exposure (RME) scenario, while the arithmetic mean was used to evaluate the central tendency exposure (CTE) scenario (EPA, 1989). The RME scenario is intended to be a conservative estimate of potential exposure, while the CTE exposure scenario is intended to be a more realistic exposure scenario. Using both the RME and CTE is intended to provide perspective to users of the risk assessment. The 90% UCL was calculated using ProUCL version 4.00.05 (EPA, 2010). When calculating the 90% UCL, both detected concentrations and non-detected (ND) were entered. ProUCL 4.00.5 returns general statistics and UCL calculations incorporating ND values. For cases with limited frequency of detections, professional judgment was used to select the RME and CTE values, as discussed below.

Table 13 summarizes the results of the EPC calculations. The method for calculating EPC was as follows.

- A data set was created for each chemical and each group according to the medium, receptor, and pathway discussed above.
- For each data set with sufficient detection frequency (see below for discussion of data sets with infrequent detections), EPA's ProUCL (EPA, 2010) was used to obtain data distribution evaluations and estimates for various statistical results. Input and output from the ProUCL calculations are presented in Appendix E. Following ProUCL guidance, the 90% UCL for these data sets were selected as follows:
    - Within the soil data set, the samples returned a non-parametric distribution and the 90% Kaplan-Meier (KM) Bootstrap or 90% KM Chebyshev was selected for the UCL.
    - Within the groundwater data set, the samples returned normal and gamma distributions, so the 90% Students-t, or 90% Approximate Gamma, respectively, were selected for the UCL.
    - The ambient air data set was a mix of normal, non-parametric, and gamma distributions. Accordingly, the 90% Students-t, 90% modified Students-t, 90% KM, or Approximate Gamma UCLs, respectively, were selected.
- Some data sets had infrequent detections of the chemical, and for several of the ambient air exposure areas, fewer than 8 samples comprised the data set. For these data sets (with less than

25% detection frequency or fewer than 8 samples) the mean, maximum, CTE, and RME values were selected as follows:

- Mean – The arithmetic mean of detected values was calculated.
- Maximum – The maximum detected concentration was selected.
- CTE – The mean value was used unless not calculated, in which case the maximum detected concentration was used.
- RME – The maximum detected concentration was used.

7.2 Toxicity Assessment

The objectives of the toxicity assessment are to evaluate the inherent toxicity of the compounds under investigation and to identify and select toxicological measures for use in quantifying the significance of the exposure. Consistent with DEQ guidance, this risk assessment was streamlined by comparing the EPC to corresponding RBCs from DEQ's RBDM guidance (DEQ, 2003, with RBC table updates in June 2012). Consistent with the DEQ's Risk Based Decision Making (RBDM) guidance, non-carcinogenic effects were also estimated for the following COPCs that are considered to have both significant carcinogenic and non-carcinogenic toxicity: PCE, TCE, and 1,1,2-trichloroethane. Default RBCs were used where available. Non-default RBCs were determined as discussed in the following paragraphs. Tables F-1 and F-2 include the RBDM outputs. Table 14 lists the RBC for each of the pathways where EPCs were calculated.

Non-Default RBC. DEQ's default RBC table includes all COPCs except 1,3-butadiene; 1,2-dichloropropane; and 1,1,2,2-tetrachloroethane; and hexachlorobutadiene. For these chemicals, the RBDM spreadsheet was used to calculate RBCs using DEQ default exposure parameters and chemical properties from EPA's Integrated Risk Information System (IRIS). Appendix F (Tables F-3 through F-6) includes the RBDM calculations and the calculated RBCs are included in Table 14.

7.3 Risk Characterization

Risk characterization is the process of comparing the chemical intake by a receptor to the toxicity of the chemical. This comparison is expressed either as a hazard index (non-carcinogens) or an excess lifetime risk of cancer (carcinogens). Potential hazards and risks were calculated using the RBC Method as described below.

Non-carcinogenic effects and carcinogenic risk levels were calculated for the pathways in the risk assessment for which default RBCs are available (direct contact, industrial groundwater, and air inhalation). Sections 7.3.1 and 7.3.2 include evaluation of two other pathways where the standard RBC approach was not applied, summarized as follows.

- Section 7.3.1 – DEQ requested that an RBC be developed for excavation and construction worker exposure to vapors from groundwater. A screening level RBC was developed for the Site and presented in this section, and excavation worker risks were estimated.
- Section 7.3.2 – The fish consumption pathway is evaluated in this section using data from MW-14, the closest monitoring point to the Willamette River.

Non-Carcinogenic Effects. For each non-carcinogen, the EPC is divided by the non-carcinogenic RBC to compute a hazard quotient (HQ) as follows:

HQ = EPC/RBC

where:

EPC = Exposure point concentration calculated as described in Section 7.1.3 and listed in Table 13.

RBC = Risk-based concentration determined as described in Section 7.2 and listed in Table 14.

For simultaneous exposure to multiple chemicals with similar toxic effects or target organ, a Hazard Index (HI) is calculated as the sum of chemical-specific HQ. A toxic effect is considered possible if an HI or HQ exceeds 1.

Table 15 presents the results of the non-carcinogenic hazard estimates. In Table 15, hazard estimates are first provided for occupational and urban residential outdoor air inhalation pathways, followed by excavation, construction, and occupational hazard estimates for Facility exposures, and then occupational and urban residential (where applicable) hazard estimates for the remainder of the exposure areas. For receptors and pathways evaluated, the HI for each exposure area is summarized in the table below, and bolded when greater than 1. Figure 31 summarizes the unacceptable non-carcinogenic effects that were calculated.

Hazard Index (HI) Summary					
		DEQ Required Exposure Scenario		Current Land Use (does not include industrial groundwater hazards)	
Receptor	Location	CTE	RME	CTE	RME
Outdoor Air					
Occupational Worker	Facility Areas	0.11	0.14	0.11	0.14
Occupational Worker	Non-Facility Areas	0.044	0.045	0.044	0.045

Hazard Index (HI) Summary					
		DEQ Required Exposure Scenario		Current Land Use (does not include industrial groundwater hazards)	
Receptor	Location	CTE	RME	CTE	RME
Urban Resident	Non-Facility Areas	0.18	0.19	0.18	0.19
Facility (2429 North Borthwick Ave)					
Excavation Worker	Facility Areas	0.00094	0.0017	0.00094	0.0017
Construction Worker	Facility Areas	0.59	2.0	0.59	2.0
Occupational Worker	Facility Office	200	250	0.74	1.7
Occupational Worker	Facility Warehouse	210	250	1.4	3.5
Occupational Worker	Facility Shop	200	250	0.52	1.0
2503 North Albina					
Occupational Worker	Office and Studio	200	250	0.44	0.65
2405 North Albina					
Occupational Worker	Office and Studio	200	250	0.89	1.1
651 North Russell					
Occupational Worker	Office	200	240	0.18	0.18
733 North Russell					
Occupational Worker	Warehouse	200	250	0.48	0.8
807 North Russell					
Occupational Worker	Retail Shop	200	250	0.9	2.0
Urban Resident	Retail Shop	3.8	8.6	3.8	8.6
816 North Russell					
Occupational Worker	Restaurant	200	240	0.05	0.06
Urban Resident	Restaurant	0.22	0.24	0.22	0.24

Hazard Index (HI) Summary					
		DEQ Required Exposure Scenario		Current Land Use (does not include industrial groundwater hazards)	
Receptor	Location	CTE	RME	CTE	RME
North Mississippi Block					
Occupational Worker	MW-8 Area	200	240	0.00001	0.00001
North Larabee Block					
Occupational Worker	MW-12 Area	0.31	0.36	--	--
North Railroad Street					
Occupational Worker	MW-10 Area	9.2	10	0.0007	0.0007
Occupational Worker	MW-15 Area	0.30	0.43	--	--
North Loring					
Occupational Worker	MW-13 Area	4.9	5.5	0.0007	0.0007
North River Street					
Occupational Worker	MW-14 Area	4.0	5.4	--	--

In summary,

- For outdoor air, calculated HI are acceptable for each exposure area and pathway.
- For excavation workers at the Facility, calculated HI are acceptable.
- For construction workers at the Facility, HI were 0.59 (CTE) and 2.0 (RME). The RME hazard estimate is approximately twice the acceptable level, primarily due to diesel concentrations at B-7-2 where the maximum diesel concentration (8,720 mg/kg) was detected.
- For office, warehouse, and shop exposures at the Facility, HI were approximately 200 (CTE) and 250 (RME). The majority of the HI is the result of the industrial groundwater use pathway (cis-1,2-DCE, TCE, and PCE). When only the applicable pathways for current land use are used, HI for CTE range is from 0.74 to 1.4, and from 1.0 to 3.5 for RME. The majority of the hazard estimate is from 1,2,4- trimethylbenzene in the warehouse air, yielding an HI of 1.4 and 3.5, for the CTE and RME case, respectively.

- Similar trends were observed for the other specific building exposure areas. The majority of the HI is the result of the industrial groundwater use pathway. When only applicable pathways for current land use are used, occupational HI for the CTE were all below 1 and ranged from 0.06 to 2.0 for the RME case. When industrial groundwater use is not assumed and evaluated:
    - Calculated HI are greater than 1.0 only at 807 North Russell Street (2.0 RME).
    - For the two exposure areas where urban residential risks are possible, 807 North Russell Street and 816 North Russell Street, calculated HI were 0.24 (RME) at 816 North Russell Street and 8.6 (RME) at 807 North Russell Street.
- For areas of the Site within the downgradient portion of the LOF, HI ranged from 240 (Mississippi Block) to 5.4 (North River Street near MW-14), along the plume centerline.

  The majority of the HI in these areas is from cis-1,2-DCE, PCE, and TCE ingestion from the assumed potential industrial groundwater use pathway. When industrial groundwater is not included, calculated HI are acceptable.

Carcinogenic Effects. For each carcinogen, the EPC is divided by the carcinogenic RBC, then multiplied by the acceptable risk level from which the RBC was calculated (1×10^{-6}) to compute the excess lifetime cancer risk (ELCR) estimate as follows:

$$\text{Risk} = (\text{EPC}/\text{RBC}) \times (1 \times 10^{-6})$$

where:

EPC = Exposure point concentration calculated as described in Section 7.1 and listed in Table 13.

RBC = Risk-based concentration determined as described in Section 7.2 and listed in Table 14.

For simultaneous exposure to multiple chemicals, individual ELCRs are summed to provide pathway, media, and receptor total ELCRs. Combining potential cancer risks as a result of exposure to multiple chemicals through multiple exposure pathways assumes that each COPC exerts its effect independently (i.e., there is no synergism or antagonism).

OAR 340-122-115 considers 1×10^{-6} and 1×10^{-5} to be acceptable risk levels for individual and multiple carcinogens, respectively.

Table 16 presents the results of the carcinogenic excess risk estimates. A summary of cumulative ELCRs for each pathway is provided below. Risk levels presented in boldface type in the table below indicate that the calculated cumulative ELCR is greater than 1.0×10^{-5}. Figure 32 summarizes the unacceptable ELCRs that were calculated.

		DEQ Required Exposure Scenario		Current Land Use (does not include industrial groundwater risk)	
Receptor	Location	CTE	RME	CTE	RME
Outdoor Air					
Occupational Worker	Facility	1×10^{-6}	2×10^{-6}	1×10^{-6}	2×10^{-6}
Occupational Worker	Non-Facility Areas	4×10^{-6}	5×10^{-6}	4×10^{-6}	5×10^{-6}
Urban Resident	Non-Facility Areas	8×10^{-6}	9×10^{-6}	8×10^{-6}	9×10^{-6}
2429 North Borthwick Ave					
Excavation Worker	Facility Areas	1×10^{-8}	2×10^{-8}	1×10^{-8}	2×10^{-8}
Construction Worker	Facility Areas	3×10^{-7}	5×10^{-7}	3×10^{-7}	5×10^{-7}
Occupational Worker	Facility Office	9×10^{-4}	1×10^{-3}	5×10^{-6}	8×10^{-6}
Occupational Worker	Facility Warehouse	9×10^{-4}	1×10^{-3}	5×10^{-6}	7×10^{-6}
Occupational Worker	Facility Shop	9×10^{-4}	1×10^{-3}	5×10^{-6}	8×10^{-6}
2503 North Albina Ave.					
Occupational Worker	Office and Studio	9×10^{-4}	1×10^{-3}	5×10^{-6}	6×10^{-5}
2405 North Albina Ave.					
Occupational Worker	Office and Studio	9×10^{-4}	1×10^{-3}	7×10^{-6}	8×10^{-6}
651 North Russell St.					
Occupational Worker	MW-8 Area	9×10^{-4}	1×10^{-3}	1×10^{-6}	1×10^{-6}
733 North Russell St.					
Occupational Worker	MW-8 Area	9×10^{-4}	1×10^{-3}	2×10^{-6}	3×10^{-6}
807 North Russell St.					
Occupational Worker	MW-8 Area	9×10^{-4}	1×10^{-3}	4×10^{-6}	8×10^{-6}
Urban Resident	MW-8 Area	8×10^{-6}	2×10^{-5}	8×10^{-6}	2×10^{-5}
816 North Russell St.					
Occupational Worker	MW-8 Area	9×10^{-4}	1×10^{-3}	3×10^{-6}	3×10^{-6}

		DEQ Required Exposure Scenario		Current Land Use (does not include industrial groundwater risk)	
Receptor	Location	CTE	RME	CTE	RME
Urban Resident	MW-8 Area	5×10^{-6}	5×10^{-6}	5×10^{-6}	5×10^{-6}
North Mississippi Ave.					
Occupational Worker	MW-8 Area	9×10^{-4}	1×10^{-3}	2×10^{-9}	2×10^{-9}
North Larabee Ave.					
Occupational Worker	MW-12 Area	2×10^{-6}	2×10^{-6}	--	--
North Railroad Ave.					
Occupational Worker	MW-10 Area	5×10^{-5}	6×10^{-5}	3×10^{-9}	3×10^{-9}
Occupational Worker	MW-15 Area	1×10^{-6}	2×10^{-6}	--	--
Occupational Worker	MW-13 Area	2×10^{-5}	2×10^{-5}	2×10^{-9}	2×10^{-9}
North Loring St.					
Occupational Worker	MW-13 Area	2×10^{-5}	2×10^{-5}	2×10^{-9}	2×10^{-9}
North River Street					
Occupational Worker	MW-14 Area	2×10^{-5}	2×10^{-5}	--	--

- For outdoor air, individual and cumulative ELCRs were acceptable at the Facility. For areas away from the Facility, cumulative ELCRs were acceptable for both occupational and urban residential exposures. The individual compound ELCR for chloroform was above acceptable levels for occupational exposures (4×10^{-6}) and urban residential exposures (7×10^{-6}). The calculated individual compound ELCR for benzene was also slightly above acceptable levels for an urban residential exposure (2×10^{-6}).
- For excavation and construction workers at the Facility, the calculated ELCR was acceptable.
- Baseline individual ELCR for Facility areas is primarily associated with PCE, TCE, and chloroform exposure via the presumed potential industrial groundwater use pathway. When industrial groundwater risks are not evaluated, cumulative ELCR at Facility areas are acceptable.

- The individual compound occupational ELCR was above the acceptable risk level for benzo(a)pyrene from soil direct contact, PCE in air within the office, and benzene in air within the shop.
- Similar trends were observed for the other specific building exposure areas. The majority of the ELCRs are the result of the industrial groundwater pathway. When only applicable pathways for current land use are used (i.e., industrial groundwater use is not evaluated):
    - 2503 North Albina Avenue is the only area that exceeds cumulative acceptable risk levels for occupational exposure (RME case = 6×10^{-5}) – primarily due to benzene (individual compound RME risk 6×10^{-5}) and, to a lesser extent, 1,2-dichloroethane (individual compound RME risk 1×10^{-6}) from air inhalation.
    - 807 North Russell Street exceeded cumulative acceptable ELCR, in this case for urban residential exposures (RME case = 2×10^{-5} for urban residential), due to 1,2-dichloroethane (individual compound RME risk 2×10^{-6}), trichloroethene (individual compound RME risk 5×10^{-6}), and tetrachloroethene (individual compound RME risk 8×10^{-6}).
    - Individual compound risk ELCR occupational exposures at specific building exposure areas were found to be above acceptable risk levels at:
        - 2503 North Albina (benzene)
        - 2405 North Albina (chloroform and 1,4-dioxane)
        - 807 North Russell (TCE and PCE); and
        - 816 North Russell (chloroform).
- For areas within the downgradient portion of the LOF, calculated ELCR ranged from 1×10^{-3} (Mississippi Block with MW-8) to 2×10^{-5} (River Street with MW-14), along the plume centerline. The ELCR exceedences were due to application of the assumed potential industrial groundwater use pathway. No unacceptable risks were calculated for the vapor intrusion pathway for the downgradient portion of the LOF.

7.3.1 Excavation Worker Risk Screening

DEQ required that risk screening for excavation and construction workers include an RBC for worker exposure to vapors that could volatilize from groundwater. Such risk could exist at areas away from the Site where vapor-phase transport from soil sources is considered negligible. The excavation and construction worker exposure scenario includes dermal contact, ingestion, and inhalation of vapors from soils. However, contaminated groundwater is present at distance away from subsurface soil sources such that, at locations where soil sources are not present, excavation or construction workers could be exposed to vapor volatilizing from groundwater beneath the excavation. Therefore, these RBCs are intended to screen for

potential excavation worker risks from vapor at locations away from the Facility where the standard excavation worker exposure scenario may not apply.

Following DEQ's recommendation, a box model developed by the Virginia Department of Environmental Quality was used to estimate vapor concentrations from the groundwater plume. At the time of this report, the model can be found here:

> *http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/RemediationProgram/VoluntaryRemediationProgram/VRPRiskAssessmentGuidance/Guidance.aspx*

Excavation and construction worker risks were assessed using the three-step process summarized below.

1) Separate calculations for areas in the LOF that are higher elevation (60-foot depth to water [DTW]) and lower elevation (40-foot DTW) were completed. Exposure point concentrations were calculated for a "typical" trench dimension (10 feet long, 6 feet wide, 10 feet deep) and a "typical" building footprint (2,500 square feet). The box model is sensitive to area (smaller areas generating higher vapor concentrations). The trench dimension used represents the reasonably likely smallest trench size. Additional input parameters include average temperature (54 degrees F), and a diffusion coefficient (set at 1, which is the highest rate).
2) The EPCs for MW-8 were used for both calculations as the concentration input for the box model to calculate the EPC since such concentrations represent worst case.
3) PCE and TCE RBCs were calculated for both carcinogenic risk and non-carcinogenic hazards using a unit risk approach following DEQ risk assessment guidance (DEQ, 2010). Inhalation Uptake Rate (IUR) and Reference Concentrations (RfD) were taken from the DEQ RBDM Guidance (DEQ, 2003).

Calculations for each step of this process are summarized in the worksheets included in Appendix F (Tables F-7 through F-10). The estimated EPCs, Excavation and Construction worker RBCs, and corresponding risk levels are summarized in the table below.

Compound	Excavation Worker RBC (µg/m3)	EPC (µg/m3)	Excavation Worker Lifetime Risk Estimate
Carcinogenic Risk			
Shallow (40 feet DTW)			
Tetrachloroethene	10,919	151	1×10^{-8}
Trichloroethene	692	33.6	5×10^{-8}
Deep (60 feet DTW)			

Compound	Excavation Worker RBC (µg/m3)	EPC (µg/m3)	Excavation Worker Lifetime Risk Estimate
Tetrachloroethene	10,919	90.7	8×10^{-9}
Trichloroethene	692	20.2	2×10^{-8}
Non-Carcinogenic Risk			
Shallow (40 feet DTW)			
Tetrachloroethene	1,622	151	0.1
Trichloroethene	81	33.6	0.4
Deep (60 feet DTW)			
Tetrachloroethene	1,622	90.7	0.06
Trichloroethene	81	20.2	0.3

Compound	Construction Worker (µg/m3)	EPC (µg/m3)	Construction Worker Risk Estimate
Carcinogenic Risk			
Shallow (40 feet DTW)			
Tetrachloroethene	393	0.84	2×10^{-9}
Trichloroethene	25	0.19	7×10^{-9}
Deep (60 feet DTW)			
Tetrachloroethene	393	0.5	1×10^{-9}
Trichloroethene	25	0.12	5×10^{-9}
Non-Carcinogenic Risk			
Shallow (40 feet DTW)			
Tetrachloroethene	58	0.84	0.01
Trichloroethene	3	0.19	0.06
Deep (60 feet DTW)			
Tetrachloroethene	58	0.5	0.009
Trichloroethene	3	0.12	0.04

The results of the RBC development and risk calculations indicate that the predicted excavation and construction worker risks from working over areas of the groundwater plume are acceptable in all instances.

7.3.2 Subsistence Fisher Pathway

The terminus of the dissolved-phase constituent plume extends past MW-14 near the Willamette River. A monitoring well on the river bank has not been installed because access has not been granted by the private

property owner. MW-14, which is approximately 300 feet from the river, is the farthest downgradient monitoring point.

A semi-quantitative estimate of risk for the subsistence fisher pathway was developed that estimates the average exposure over a river mile of groundwater discharge at the transition zone. Considering exposure over a river mile is considered more representative of an actual exposure because it accounts for movement of both the aquatic species that will be consumed and also the subsistence fisher (i.e., the fish or the fisher do not constantly reside at a single point). This approach is consistent with the exposure scenarios that are being used in the draft Portland Harbor Superfund Site FS.

Risk estimates are based on the predicted average concentration at the groundwater/surface water transition, accounting for lateral and vertical dispersion based on the approximate concentration distributions. The EPCs for PCE and TCE were estimated as follows.

- Using the linear trend-line of log PCE concentrations along the plume centerline, the peak PCE and TCE concentrations at the transition zone (defined as a point 1,950 feet from MW-4) were estimated to be 16.6 µg/L and 5.2 µg/L, respectively (Figure 26).
- Data from MW-14 and B-66 were then used to identify the vertical contamination distribution within the approximately 40-foot contaminated aquifer thickness and to calculate a depth averaged concentrations at the groundwater/surface water transition. Depth-averaged concentrations of 8.3 µg/L for PCE and 2.6 µg/L for TCE and were calculated by applying the PCE/TCE vertical concentration distribution observed in depth-discrete sample location B-66 and MW-14 (data are shown on Figure 5a) to the estimated 16.6 µg/L PCE and 5.2 µg/L TCE concentration at the transition zone. Concentrations in the contaminated aquifer thickness are highest across the screen depth at MW-14 and decrease both above and below the screen – approximately a 50% reduction within 5 feet and a 75% reduction between 5 and 15 feet.
- For the lateral concentration component, estimated average concentrations were assigned for the corresponding portions of the plume width (see Figures 21 and 22), and average concentrations were calculated for both cases. Discharge to the bottom of the river (a 400-foot half-river width) for the river mile was also accounted for in this area-weighted average. To simplify the calculations, all of the contaminant mass was assumed to be discharged from the bank and the groundwater flux through the bank is assumed to be the same as through the river bottom.
- The input concentrations and derivation of the average concentrations are summarized below for TCE and PCE.

Predicted TCE Exposure Point Concentration – Subsistence Fisher

TCE Concentration (µg/L)		2.6	1.3	
Representative Width (Feet)		450	300	
Contaminated Area Concentration Average (µg/L)	(2.6 µg/L x 450 ft) + (1.3 µg/L x 300 ft) / 750 ft			2.1 µg/L
Contaminated Bank Area	750 feet by 40 feet = 30,000 square feet			62,400 µg * sf/L
Remaining RM Bank Area (non-contaminated)	211,200 sf (5,280 feet by 40 feet)-28,000 sf = 183,200 sf			0 µg * sf/L
RM Bottom Area (non-contaminated)	5,280 feet by 400 feet = 2,112,000 sf			0 µg * sf/L
Average RM Conc. (µg/L)	62,400 (µg * sf/L)/2,323,200 sf			0.03 µg/L

Predicted PCE Exposure Point Concentration – Subsistence Fisher

PCE Concentration (µg/L)	8.3	4.1	2.1	
Representative Width (Feet)	300	400	400	
Contaminated Area Concentration Average (µg/L)	(8.3 µg/L x 300 ft)+(4.1 µg/L x 400 ft)+(2.1 µg/L x 400 ft)) / 1,100 ft			4.5 µg/L
Contaminated Bank Area	1,100 feet by 40 feet = 44,000 square feet			198,800 µg * sf/L
Remaining RM Bank Area (non-contaminated)	211,200 sf (5,280 feet by 40 feet)-44,000 sf = 167,000 sf			0 µg * sf/L
RM Bottom Area (non-contaminated)	5,280 feet by 400 feet = 2,100,000 sf			0 µg * sf/L
Average RM Conc. (µg/L)	198,800 (µg * sf/L)/2,300,200 sf			0.09 µg/L

Using the Portland Harbor Specific Fish Consumption SLV for PCE (0.33 µg/L) and TCE (3.0 µg/L) as the acceptable level, the estimated ELCR for the subsistence fisher pathway is 3 x 10^{-7} for PCE and 9 x 10^{-9} for TCE. Both predicted ELCR are below the 10^{-6} risk level.

7.3.3 Short Term Exposure to TCE

DEQ requested evaluation of short term exposure to TCE based on other changes included in EPA's IRIS evaluation of TCE toxicity in 2011. The changes identified fetal cardiac malformation as a developmental

effect used in setting the revised RfD and RfC. Fetal cardiac developmental changes occur within a short time frame, not the longer averaging times that are used for long term cleanup levels. Subsequently, EPA Region 10 issued a memorandum (EPA, 2012) with screening values based on a 21-day averaging time. In their August 2013 comment letter, DEQ provided several "not to exceed" RBCs for short-term exposure to TCE. The table below screens "not to exceed" RBCs and maximum applicable media concentrations.

Pathway and Units	Occupational Short Term TCE RBC	Maximum Concentration	Notes
Soil Direct Contact (mg/kg)	270	76	Maximum Soil Concentration
Soil Outdoor Air Volatilization (mg/kg)	280	76	Maximum Soil Concentration
Soil Vapor Intrusion (mg/kg)	8.1	76	Maximum Soil Concentration
Groundwater Outdoor Air Volatilization (µg/L)	56,000	13,000	Maximum Groundwater Concentration
Groundwater Vapor Intrusion (µg/L)	97,000	13,000	Maximum Groundwater Concentration
Groundwater in Excavation (µg/L)	440	13,000	Maximum Groundwater Concentration
Soil Vapor – Vapor Intrusion (µg/m^3)	8,800	140,000	Maximum shallow soil vapor concentration.
Air Inhalation (µg/m^3)	8.8	6.5	Maximum ambient air concentration.

For the residential RBCs, data from the vicinity of the north Russell and North Albina intersection, corresponding to the area where Urban Residential land uses are allowed, were screened against the "not to exceed" short-term RBCs.

Pathway and Units	Residential Short Term TCE RBC	Maximum Concentration	Notes
Soil Direct Contact (mg/kg)	17 mg/kg	NA	No soil sources away from Facility
Soil Outdoor Air Volatilization (mg/kg)	67 mg/kg	NA	No soil sources away from Facility
Soil Vapor Intrusion (mg/kg)	0.64 mg/kg	NA	No soil sources away from Facility
Groundwater Outdoor Air Volatilization (µg/L)	13,000 µg/L	100	Estimated groundwater concentration at Russell/Albina area
Groundwater Vapor Intrusion (µg/L)	770 µg/L	100	Estimated groundwater concentration at Russell/Albina area

Groundwater in Excavation (μg/L)	NA[4]	NA	Exposure pathway incomplete
Soil Vapor – Vapor Intrusion (μg/m^3)	420 μg/m^3	9,800	Maximum shallow soil vapor concentration at VP-8
Air Inhalation (μg/m^3)	2.1 μg/m^3	0.24	Maximum air concentration near Russell/Albina area

As shown in the screening table above, concentrations of TCE are generally not above the "not to exceed" RBCs for short-term TCE exposure, with limited exceptions that are described below:

- For short-term TCE exposure for an excavation worker to groundwater, the maximum concentrations of TCE exceed the RBC. The area where TCE is predicted to exceed the short-term RBC is the general centerline of the plume, extending from the Facility to North Interstate Avenue (see Figure 22). Excavation worker direct contact is unlikely since depth to groundwater ranges from 40 to 60 feet in this area.
- The maximum soil concentration (76 mg/kg) exceeds the respective occupational RBC for vapor intrusion from soil. In general, the area where TCE is predicted to exceed the occupational short-term RBC for vapor intrusion from soil (8.1 mg/kg) is the source area at the former solvent tanks (see Figure 14 and Figure 15).
- The maximum soil vapor concentration (140,000 μg/m^3) exceeds the respective occupational vapor intrusion RBC. In general, the area where TCE is predicted to exceed the occupational soil vapor – vapor intrusion short-term RBC (8,800 μg/m^3) is limited to the warehouse area of the Facility and an adjacent area under North Russell Street (see Figure 19).
- The maximum soil vapor concentration (9,800 μg/m^3) exceeds the urban residential short-term TCE vapor intrusion RBC. This concentration was measured at VP-8, at the corner of Russell and Albina. Baseline TCE concentrations at VP-8 ranged from 1,900 to 9,800 μg/m^3 at this location.

While soil and soil vapor concentrations do exceed the short-term TCE vapor intrusion RBC for both occupational and residential exposures, in indoor air spaces where exposure is evaluated, measured concentrations of TCE do not exceed the short-term TCE RBC in ambient air. Therefore, baseline risks are predicted to be acceptable for occupational and urban residential exposures. It should also be noted that these baseline concentrations have been significantly reduced by the SVE IRAM system to concentrations that are well below the short-term TCE RBCs for occupational air inhalation (8,800 μg/m^3) and residential soil vapor (420 μg/m^3; Apex, 2013).

7.4 Human Health Risk Assessment Summary

In this section, the risk assessment results are summarized, confounding sources are identified and discussed, and the final COC are identified. The results of the risk assessment are summarized on Figures 31 and 32.

7.4.1 Non-Carcinogenic Effects from COPC

When industrial groundwater is considered, concentrations of cis-1,2-DCE, TCE, and PCE resulted in HI in excess of 1. Along the centerline of the plume, calculated HI ranged from 250 at the Facility, to 5.4 at MW-14 (River Street). The industrial water use pathway is currently not complete within the LOF. Evaluation of this pathway was required by DEQ.

For current exposure pathways, excess non-carcinogenic risks were generally acceptable. The limited exceptions where a hazard index (HI) was greater than 1 were:

- Construction worker direct contact with diesel. Nearly all of the 2.0 HI is the result of the diesel concentration corresponding to the maximum detected concentration at B-7-2. B-7-2 is a shallow boring under asphalt paving near the ASTs. When this sample is removed, the range of detected TPH-D concentrations is 72 mg/kg to 292 mg/kg, all well below construction worker RBCs.
- Occupational exposure to 1,2,4-trimethylbenzene in ambient air in the Warehouse exposure area. These potential effects are attributed to current operations at the Facility, not the historical releases (see additional discussion, below).
- Occupational and urban residential exposures to PCE vapor at 807 North Russell Street. These potential effects are attributed to the former Campbell's dry cleaner at 819 North Russell Street (see additional discussion, below).

The non-carcinogenic risk from 1,2,4-trimethylbenzene is attributed to active chemical handling operations at the Facility and not attributed to historical releases. 1,2,4-trimethylbenzene is a component of petroleum products handled in the warehouse, adjacent to the office. Additionally, concentrations of 1,2,4-trimethylbenzene in soil (maximum concentration is 86 mg/kg) are a factor of 10 less than the occupational soil-vapor intrusion RBC (1,000 mg/kg), and the concentration of 1,2,4-trimethylbenzene in Facility soil vapor (maximum concentration is 6.2 micrograms per meter cubed [$\mu g/m^3$]) is four orders of magnitude below the occupational soil vapor-vapor intrusion RBC (31,100 $\mu g/m^3$). Note that while the EPC for 1,2,4-trimethylbenzene (68.6 $\mu g/m^3$) exceeds the DEQ RBC, the detected concentration is orders of magnitude below work place levels which would require action to protect workers. For example, workplace exposure limits posted by the National Institute of Occupational Safety and Health are 25 ppm or 1.2×10^5 $\mu g/m^3$. Please see additional discussion in Section 7.4.1.

807 North Russell Street is adjacent to the former Campbell's Cleaners at 819 North Russell Street (ECSI 5680). HI at 807 North Russell Street are attributed to the release at the Campbell's Cleaners site, currently under investigation. Please see additional discussion in Section 7.5.

In summary, when only current exposure pathways are evaluated, baseline non-carcinogenic HI greater than 1 were either of limited extent or not attributed to historical releases from Priestley/Tarr. The hypothetical future industrial drinking water scenario results in HI greater than 1. After accounting for chemicals not attributed to Priestley/Tarr, the non-carcinogenic COCs include diesel in soil at the Facility, and cis-1,2-DCE, TCE, and PCE in groundwater.

7.4.2 Risks from Carcinogenic COPCs

When industrial groundwater use is considered, unacceptable risks are present in all exposure areas, except the areas represented by MW-12 and MW-15 (the north and south lateral extents of the groundwater plume in the area west of Interstate Avenue). The unacceptable risk is from 1,1-DCA, PCE and TCE, except:

- Chloroform, benzene, and methylene chloride at MW-8; and
- Chloroform at MW-10.

Methylene chloride is a frequent lab contaminant and was only detected 2 of 19 times at MW-8. It is unlikely that methylene chloride is the result of historical releases from Priestley/Tarr.

For current exposure pathways at the facility, ELCRs were acceptable, except as follows:

- Occupational direct contact with soil – an individual compound ELCR of 3×10^{-6} for benzo(a)pyrene results from the two samples with detectable benzo(a)pyrene concentrations (B-4-2 and B-9-1.5). Benzo(a)pyrene was not detected in the other six samples where benzo(a)pyrene was a target analyte.
- Occupational air inhalation in the office – an individual compound ELCR of 2×10^{-6} is calculated for PCE.
- Occupational air inhalation in the Shop – an individual compound ELCR of 3×10^{-6} is calculated for benzene.

At the time of sampling, the Shop building was an active vehicle shop and the benzene concentration is attributed to shop operations and/or regional urban baseline concentrations. Note that the EPC for benzene (5.2 $\mu g/m^3$) is well below the Permissible Exposure Limit established by the Occupational Safety and Health Administration of 100 ppm or 6.7×10^5 $\mu g/m^3$).

For current exposure pathways at areas away from the facility, ELCRs were generally acceptable. Exceptions where unacceptable individual or cumulative carcinogenic ELCRs were calculated included the following.

- Occupational air inhalation from outdoor areas – chloroform 4 x 10^{-6};
- Urban residential air inhalation from non-Facility outdoor areas, chloroform 7 x 10^{-6}, benzene 2 x 10^{-6};
- Occupational air inhalation at 2503 North Albina – benzene 6 x 10^{-6};
- Occupational air inhalation at 2405 North Albina – chloroform 2 x 10^{-6}, 1,4-dioxane 3 x 10^{-6};
- Occupational air inhalation at 807 North Russell TCE 3 x 10^{-6}, PCE 4 x 10^{-6};
- Urban residential air inhalation at 807 North Russell – 1,2-DCA 2 x 10^{-6},TCE 5 x10^{-6}, PCE 8 x 10^{-6}
- Occupational air inhalation at 816 North Russell - chloroform 2 x 10^{-6};
- Urban residential air inhalation at 816 North Russell – chloroform 3 x 10^{-6};
- Cumulative ELCR at 2503 North ALBINA Avenue (2 x 10^{-5}); and
- Cumulative ELCR at 807 North Russell (2 x 10^{-5}).

The highest relative individual compound ELCRs are found at the 807 North Russell Building, adjacent to the former dry cleaner at 819 North Russell. These ELCRs are attributed to the former Campbell's Cleaners, not historical releases from Priestley/Tarr.

Unacceptable ELCR from chloroform were calculated for several areas away from the Facility. Chloroform is present above acceptable risk levels at MW-8, MW-10 (groundwater), outdoor areas away from the Facility, 2405 North Albina, and 816 North Russell (air). Priestley/Tarr indicated that they do not currently and have not historically handled chloroform, carbon tetrachloride, or drinking water chemicals and refrigerants trihalomethanes (chloroform can also be present as a result of breakdown of carbon tetrachloride or trihalomethanes). Priestley/Tarr is a distributor of petroleum and petroleum- and alcohol-based solvents. They do not distribute carbon tetrachloride, refrigerants, or drinking water chemicals. Several lines of evidence contribute uncertainty with regard to whether the Facility is a source of chloroform.

- The area has a history of water leaks and the storm sewer system is among the oldest in the City. As an example, a prolific water leak at the initial location of VP-13 frequently interfered with soil vapor sample collection. This leak was identified and repaired during the 2011 street-scaping improvements completed by the City.
- Chloroform has never been detected in Site soil (it was a target analyte in 147 samples). This indicates the source of chloroform in soil vapor and groundwater is not likely from Priestley/Tarr.

- When detected, concentrations are sporadic and do not indicate a gradient consistent with a source from Priestley/Tarr.
- Carbon tetrachloride has never been detected in groundwater at the Facility. Chloroform is not present as a result of carbon tetrachloride breakdown.

The weight of evidence is inconclusive at this time with regard to the origin of the chloroform contamination in groundwater and outdoor air. Chloroform is retained as a COC for air and groundwater; however, this conclusion may be revised in the Feasibility Study, prior to final remedy.

Unacceptable risks were calculated at single exposure areas for 1-4-dioxane at 2405 North Albina and benzene at 2503 North Albina.

- Priestley/Tarr indicated that they do not currently and have not historically handled 1,-4-dioxane. 1,1,1-TCA was handled at the Facility and 1,4-dioxane can be associated with 1,1,1-TCA as a stabilizer at proportions up to approximately 10% by volume. The 1-4-dioxane has only been detected in Facility soil vapor only on two occasions (2.2 $\mu g/m^3$ in VP-1 and 1.3 $\mu g/m^3$ in VP-2), and on only three occasions away from the facility.
- All of the 1,4-dioxane risk is the result of a single monitoring event in June, 2009. 1,4-dioxane was not detected in the remaining 7 sampling events, and the reporting limits are below the corresponding RBC.

The majority of the benzene risk at 2503 North Albina also results from a single detected concentration (35 $\mu g/m^3$) in July 2009. Benzene concentrations in the remaining sampling events ranged from 0.46 to 1.4, below the corresponding RBC of 1.6 $\mu g/m^3$.

The discussion points above (infrequent/erratic detections and low concentrations in Facility soil vapor) provide a weight of evidence evaluation that 1-4-dioxane at 2405 North Albina and benzene at 2503 North Albina are not the result of migration from Priestley/Tarr.

7.4.3 Excavation Worker Risk Screening

In Section 7.3.1, additional risk screening was conducted to assess excavation worker exposure to vapors that could volatilize from groundwater. This RBC was applied to areas away from the Facility where vapor phase transport from soil sources is considered negligible. Groundwater data from MW-8 and a box model from Virginia DEQ were used to calculate an estimated vapor concentration for exposures with a 40-foot and 60 foot depth to groundwater. The vapor concentration was then compared to RBCs. Non-carcinogenic HI and ELCRs were found to be acceptable.

7.4.4 Subsistence Fisher Pathway

In Section 7.3.2, the groundwater-surface water pathway was evaluated using estimated concentrations at the transition zone developed using data from MW-14 and the first order degradation profile along the plume centerline. The average flux of PCE and TCE concentrations in groundwater over a river mile are predicted to attenuate sufficiently before the transition zone to a point where risks are acceptable.

7.4.5 Short Term TCE Exposure

In Section 7.3.3, screening for short-term exposure to TCE was completed based on information in EPA's IRIS evaluation of TCE toxicity in 2011, re-calculated for short-term exposure. The screening is based on "not to exceed" RBCs that are based on a 21-day averaging time. The RBCs were provided by DEQ and followed a 2010 memorandum prepared by USEPA Region 10 (EPA, 2010). Based on screening using the "not to exceed" RBCs and maximum applicable media concentrations for occupational exposures, concentrations of TCE are generally not above the "not to exceed" RBCs for short-term TCE exposure. The exceptions where the short-term TCE is exceeded are described below.

- Short-term TCE exposure for excavation worker contact with groundwater – Concentrations of TCE exceed the RBC. The area where TCE is predicted to exceed the short-term RBC is the general centerline of the plume, extending from the Facility to North Interstate Avenue (see Figure 22). Excavation worker direct contact is unlikely since depth to groundwater ranges from 40 to 60 feet in this area.
- The maximum soil concentration (76 mg/kg) exceeds the respective occupational RBC for vapor intrusion from soil. In general, the area where TCE is predicted to exceed the occupational short-term RBC for vapor intrusion from soil (8.1 mg/kg) is the source area at the former solvent tanks (see Figure 14 and Figure 15).
- The maximum soil vapor concentration (140,000 $\mu g/m^3$) exceeds the respective occupational vapor intrusion RBC. In general, the area where TCE is predicted to exceed the occupational soil vapor - vapor intrusion short-term RBC (8,800 $\mu g/m^3$) is limited to the warehouse area of the Facility and an adjacent area under North Russell Street (see Figure 19).
- The maximum soil vapor concentration (9,800 $\mu g/m^3$) exceeds the urban residential short-term TCE vapor intrusion RBC. This concentration was measured at VP-8, at the corner of Russell and Albina. Baseline TCE concentrations at VP-8 ranged from 1,900 to 9,800 $\mu g/m^3$ at this location.

While soil vapor concentrations exceed the short-term TCE vapor intrusion RBC for both occupational and urban residential exposures, in indoor air spaces where exposure is evaluated, measured concentrations of TCE do not exceed the short-term TCE RBC in ambient air. Therefore, baseline risks from short-term TCE exposure are predicted to be acceptable for the occupational and urban residential exposures. It should also be noted that these baseline concentrations have been significantly reduced by the SVE IRAM system

to concentrations that are well below the short-term TCE RBCs for occupational air inhalation (8,800 μg/m^3) and residential soil vapor (420 μg/m^3; Apex, 2013).

7.5 Uncertainty Evaluation

This section identifies assumptions and uncertainties inherent in the risk assessment in order to place the risk estimates in proper perspective. In general, the risk assessment was conducted in a manner such that the net result of assumptions made to address uncertainties was more likely to overestimate risk. For this risk assessment, the general sources of uncertainty addressed include:

- Data Collection and Evaluation;
- Exposure Assessment;
- Toxicity Assessment; and
- Risk Characterization.

7.5.1 Data Collection and Evaluation

The identification of the types and numbers of environmental samples, sampling procedures and sample analyses each contain components that contribute to uncertainties in this risk assessment. For example, it is generally not practical to sample all locations and media at a site. Decisions were made to select a subset of the potential sampling locations and media based upon the anticipated presence of the chemical. These decisions were made with the use of historical and background information on the Site and the potential contaminants' chemical and physical properties. Exposure doses for the Site that are based on non-random—or source area—samples may be overestimated.

Data Set Depth Range. The construction worker was assumed to be exposed to soil over the depth range of 0 to 15 feet. Selecting a shallower depth range may result in a change in the risk estimate. Similarly, soil vapor-vapor intrusion RBCs were applied for the permanent shallow soil vapor monitoring data set since these concentrations are closest to the receptor. Near the identified source areas, concentrations of VOCs in soil vapor are higher at depth. Increasing the depth of the soil vapor evaluation to include deeper intervals would increase the risk estimates.

Ambient Air Data Set Used to Evaluate Vapor Intrusion Risks. Ambient air data were used to evaluate the vapor intrusion pathway. Ambient air samples could not be collected within every building located within the extent of the soil vapor plume, which contributes uncertainty to the completeness of the identified exposure areas. In this risk assessment, two additional lines of evidence (soil vapor and groundwater screening) were used to identify whether all of the areas with potential vapor intrusion risks were identified and included in the risk assessment (see discussion sections 5.2.2 and 5.3).

Indoor ambient air samples collected within the Facility office were collected after the initial office sub-slab venting IRAM was constructed and operated beginning in 2007. Ambient air data prior to the office sub-slab venting system are not available. The data from the office area likely results in a low bias in the risk assessment calculations. Calculated risks were generally within one order of magnitude of acceptable risk levels. So it may be possible that individual compound baseline ELCR was present.

Two of the three indoor ambient air samples collected from 651 North Russell Street were collected after the SVE IRAM was started. The initial office sub-slab venting IRAM was constructed and operated beginning in November 2009. The EPCs were based on the maximum concentration, and calculated risks were several orders of magnitude below acceptable risk levels. It is likely that individual compound baseline risks from HVOCs are acceptable at 651 North Russell Street.

The 2007 soil and soil vapor samples (see Section 4.2) collected within the 740 North Russell Street building are the only data for this exposure area. No other sampling access has been granted. Based on these results, unacceptable baseline risks are present. Concentrations of PCE and TCE in these samples exceed the Soil Vapor – Vapor Intrusion RBC. Interim actions have been in place for this building since 2007.

Exposure Areas Not Included in Ambient Air Sampling. There are four off-site exposure areas where unacceptable risks may be present based on screening of soil gas data. These areas located off of the Facility were not included in the ambient air monitoring program but were either historically addressed as IRAM's, or monitored as part of the overall IRAM monitoring program. These areas are:

- 740 North Russell Building (sampling access has not been granted. IRAMs have been operating here since 2007));
- Two Warehouses Between 733 North Russell Street and 651 North Russell Street (733 North Russell was sampled as surrogate for these warehouses); and
- Warehouses and Shop on North Mississippi (these buildings were brought into the vapor intrusion study area based in 2011 based on soil vapor data).

Additional HVOC Sources. The former Campbell's Cleaners site at 820 North Russell Street (ECSI 5680) is a documented source of HVOCs to the environment. Investigations in 2011 and 2013 have documented the presence of HVOCs (including PCE and TCE), benzene, and/or chloroform in soil, soil vapor, and ambient air. During the 2013 Phase I ESA, PCE was detected in soil samples in one location at concentrations as high as 46 mg/kg, and PCE was detected in the indoor air samples at concentrations from 54 to 58 $\mu g/m^3$. Low concentrations of benzene and chloroform (below the RBCs) were detected in the air sample. The soil data point to a source on this property, but do little to quantify the magnitude and extent of impacts. Additional investigation, including groundwater sampling are planned for the Winter 2013/2014.

The detected PCE concentrations in ambient air in both samples at 820 North Russell Street are higher than nearly all the indoor air samples collected for the Priestley/Tarr RI. This property is believed to be the primary source of PCE and TCE detected at 807 North Russell Street, and a contributory source to the PCE detected at 816 North Russell Street. DEQ has determined that contamination at the Campbell's Dry Cleaner site poses significant current and ongoing threats to human health and the environment, and that immediate investigative, removal, and/or remedial actions are needed to reduce or eliminate these threats (DEQ, 2013). A partnership between the City of Portland Brownfield Program and the Oregon DEQ Orphan Site Program will provide for the investigation and DEQ oversight of this project moving forward.

The contribution of HVOCs to groundwater from the former Campbell's Cleaners has not been determined. In addition, there are numerous other potential sources within the downgradient portion of the plume. These potential sources have generally not been assessed.

Chemicals from Operations. The non-carcinogenic risk from 1,2,4-trimethylbenzene is attributed to chemical handling operations at the Facility. 1,2,4-trimethylbenzene is a component of petroleum products handled in the warehouse. Additionally, concentrations of 1,2,4-trimethylbenzene in soil (maximum concentration is 86 mg/kg) are a factor of 10 less than the occupational soil-vapor intrusion RBC (1,000 mg/kg), and the concentration of 1,2,4-trimethylbenzene in Facility soil vapor (maximum concentration is 6.2 $\mu g/m^3$) is four orders of magnitude below the occupational soil vapor-vapor intrusion RBC (31,100 $\mu g/m^3$).

The carcinogenic risk due occupational air inhalation of benzene in the Shop (calculated individual compound risk level of 3×10^{-6}) is also influenced by operations. At the time of sampling, this building was an active vehicle shop and the benzene concentration is attributed to shop operations.

Infrequent/Erratic Chemicals from Other Sources. The 1-4-dioxane at 2405 North Albina and benzene at 2503 North Albina that result in individual compound risk are not the result of migration from Priestley/Tarr. As described in Section 7.4.2, infrequent/erratic detections of these compounds and low concentrations of these compounds in Facility soil vapor provide a weight of evidence that these compounds are not derived from Facility activities.

Chloroform. Unacceptable risks from chloroform were calculated for several areas away from the Facility. Chloroform is present above acceptable risk levels at MW-8 and MW-10 (groundwater), outdoor areas away from the Facility, 2405 North Albina, and 816 North Russell (air). To the best of their knowledge, Priestley/Tarr indicated that they do not currently, and have not historically, handled chloroform or other chemicals known to break down to chloroform. Section 7.4.2 describes several lines of evidence regarding the source of the chloroform. However, the weight of evidence is not conclusive and chloroform is conservatively retained as a COC for groundwater and air. This conclusion may be revised in the Feasibility Study, prior to final remedy.

Groundwater Data Set Used for Subsistence Fisher. The lack of a riverfront monitoring well (MW-17) contributes to uncertainty in the evaluation of subsistence fisher risks.

7.5.2 Exposure Assessment

The exposure estimation methods are subject to varying degrees of uncertainty. The degree of uncertainty generally depends on the amount of site-specific data available. The following sources of uncertainty have been identified.

Exposure Scenario Identification. This HHRA assumes that receptors are limited to occupational, construction and excavation workers on the Facility, occupational users in the remainder of the LOF, and urban residential users in the area where zoning allows urban residential land uses. If these assumptions are incorrect, future risks and hazards could be under- or overestimated.

Including industrial use of groundwater as potential future use greatly overestimates the cumulative baseline risk. Use of industrial groundwater is not a current water use, nor is it reasonably likely based on the ready availability of municipal water.

Exposure Parameters and Assumptions. The standard and Site-specific exposure assumptions may or may not be representative of the actual exposure conditions and could under- or overestimate future risks and hazards.

Assumption of Steady-State Conditions. The inherent assumption is that future COPC concentrations are the same as current concentrations.

7.5.3 Toxicity Assessment

Toxicity Factors. Uncertainty is present in the derivation of the toxicity factors used to derive the RBCs used in this HHRA. Toxicity factors are derived primarily from animal studies. These necessarily require extrapolation to humans, extrapolation from high-dose to low-dose situations, and extrapolation from one exposure pathway to another (e.g., oral to dermal). In addition, the studies have difficulty accounting for population variability, and the quality of studies varies among chemicals. All of these factors may result in either an over- or underestimation of risk. These uncertainties are typically addressed with the use of uncertainty factors such that reference doses for non-carcinogens and slope factors for carcinogens result in upper-bound estimates of risk.

Uncertainty associated with determining chemical carcinogenicity is reflected in the weight-of-evidence classification groups assigned to carcinogens. In addition, uncertainties are introduced because slope

factors are derived from the low-dose end of the dose-response curves, and the experimental studies are usually conducted at the high-dose end of the curve. The selected 95% UCL of the slope of the dose-response curve is considered an upper-bound toxicity value. Therefore, it is unlikely that the slope factors will underestimate risk. Actual cancer risk may range from a low of zero to the upper limit defined by the model.

Uncertainty is also associated with using oral toxicity factors to evaluate dermal exposures. The use of oral toxicity factors as surrogates is necessary because there are no dermal toxicity factors approved by EPA. Most of the uncertainty exists because it is not known whether the compounds in question exhibit the same toxicity via dermal contact as they do via the oral pathway. Default oral absorption factors were used to adjust the oral toxicity factors so the absorbed doses calculated for the dermal pathway could be evaluated. The use of the oral absorption factors may bias the risk and hazard estimates high or low.

7.5.4 Risk Characterization

This HHRA used EPA/DEQ standard algorithms to calculate health risks and hazards. There are certain assumptions inherent in the use of these equations that add uncertainty. For example, calculations of carcinogenic risks and non-carcinogenic HI assume the additivity of toxic effects. This assumption adds uncertainty to the assessment and may result in an overestimation or underestimation of the potential risks, depending on whether synergistic or antagonistic conditions apply. Exposure pathway risks are combined assuming that a single receptor may be exposed to contamination through a selected number of pathways concurrently. This is a conservative estimate that may overestimate risks and hazards. Additionally, the standard algorithms used do not consider certain factors, such as absorption or matrix effects. In cases where these processes are important, the risk estimates may overestimate or underestimate the potential human risks at this Site.

8.0 Ecological Risk Assessment

A Level I Scoping ERA was completed for the Site, following DEQ Guidance for Ecological Risk Assessment (DEQ, 1998b). The Level I ERA consists of a narrative summary of the Site land use and contaminant information, publicly available information describing sensitive environments and protected species, and the Level I scoping checklist.

8.1 Existing Data Summary

The Level I Scoping ERA outline in DEQ (1998) provides a suggested outline for the Level I deliverable. The first four items have been previously described in this report, as follows:

- Site Location – Section 2;

- Site History – Section 2;
- Site Land and Water Use – Section 6; and
- Known or Suspected Hazardous Substance Releases – Section 5.

8.2 Sensitive Environments

The Facility and the remainder of the Site are located in a heavily industrialized area. The Facility is entirely paved, and there is no open space, parks, or other locations at the Site that would be considered to provide habitat to terrestrial ecological receptors.

The Willamette River is considered to be a sensitive environment based on the possibility of discharge of dissolved-phase VOCs from groundwater to the river. The Willamette River is 1,800 feet from the Site at its closest point. At the river, groundwater discharges at approximately 25 feet bgs. Therefore the riverbank is not considered a sensitive environment that could be impacted by releases from the Site.

8.3 Protected Species

The Willamette River contains protected aquatic species including salmon and steelhead. In March 1999, NOAA Fisheries listed upper Willamette River Chinook and steelhead under the Endangered Species Act (ESA).

8.4 Site Visit Summary

Appendix G contains Attachments 1 (Ecological Scoping Checklist) and 2 (Evaluation of Receptor-Pathway Interactions) for the Level I Scoping ERA. The checklists were prepared based on observations made during the many site investigation and remedial activities completed during the ongoing RI.

In summary:

- No ecological impacts or ecologically important habitat are present (except for the Willamette River). Shallow contamination (less than 10 feet) is limited to the Facility and immediate vicinity. No terrestrial habitat is present at the Facility and immediate vicinity.
- The Willamette River is the only ecologically important habitat near the Site.
- Contaminants from the Site are present in groundwater at distance from the Site and have the potential to discharge into surface water of the Willamette.
- Other than the groundwater-surface water connection, no other complete exposure pathways to ecological receptors were identified.

8.5 Recommendations

In the absence of ecologically significant habitat and receptors, additional Level II Screening is not required at the Site, except for the groundwater-surface water pathway.

8.6 Level II Screening

As described previously, a data gap exists because MW-14 has not been installed and concentrations cannot be measured at the point of discharge to the river. Level II screening of the groundwater-surface water pathway uses a weight-of-evidence approach that compares DEQ's aquatic SLVs (DEQ, 1998b), and the Oak Ridge Laboratory Tier II Secondary Chronic Values (SCVs; DEQ/EPA, 2005) to the:

1) groundwater results in MW-14; and
2) PCE and TCE average concentrations calculated in Section 7.3.2 for evaluation of the Subsistence Fisher Pathway.

Table 17 summarizes detected concentrations of VOCs in groundwater in MW-14 in December 2010 and March 2011, compared to DEQ's SLVs (DEQ, 1998b), and the Oak Ridge Laboratory Tier II Secondary Chronic Values (SCVs; DEQ/EPA, 2005). Four VOCs were detected in MW-14: cis-1,2-dichlorethene, PCE, 1,1,1-trichloroethane, and TCE. Detected concentrations are below the respective DEQ SLVs. The measured concentrations of PCE (117 and 148 μg/L) and TCE (41 and 53 μg/L) at MW-14 are approximately equal to the Oak Ridge Laboratory Tier II SCV for PCE of 98 μg/L and the TCE SCV of 47 μg/L (DEQ/EPA, 2005). Within the estimated travel distance between MW-14 and the transition zone of approximately 450 feet, the concentrations of PCE and TCE will continue to attenuate to a concentration which is below the SCV.

In Section 7.2.3, predicted peak concentrations of PCE and TCE at the groundwater-surface water transition zone were calculated and then used to generate an average concentration to evaluate the Subsistence Fisher Pathway. The predicted concentrations of PCE and TCE at the groundwater-surface water transition zone were 0.03 μg/L for PCE and 0.09 μg/L for TCE. Both concentrations are multiple orders of magnitude lower than the SLV and SCV.

In conclusion, risks to aquatic ecological receptors in the Willamette River from the groundwater to surface water pathway are predicted to be acceptable:

- Concentrations of VOCs detected in MW-14 are approximately equal to, or below, DEQ aquatic SLVs and Oak Ridge Tier II SCVs approximately 300 feet from the river; and
- The predicted concentrations of PCE and TCE at the groundwater-surface water transition zone, 0.03 μg/L for PCE and 0.09 μg/L for TCE, are all significantly lower than DEQ aquatic SLVs and Oak Ridge Tier II SCVs.

9.0 Hot Spot Identification

The Oregon cleanup rules require the RI to evaluate hot spots of contamination for media other than water (OAR 340-122-080(7)). The Oregon cleanup rules define a hot spot in water as any concentration of a hazardous substance that has a significant adverse effect on beneficial uses of water or waters that would reasonably be likely to migrate (OAR 340-122-080 (6)). The determination of water hot spots is completed during the Feasibility Study. The potential for hot spots are identified in this section for media other than water (i.e., soil, soil vapor, and ambient air), and a preliminary discussion of potential water hot spots is also provided.

Soil and Other Media. A hot spot in soil or other media is defined as the presence of a substance that presents a risk to human health and the environment exceeding the acceptable risk level, and if:

- Contaminants are present at concentrations corresponding to:
  - The individual compound cancer risk is 100 times the acceptable level (corresponding to a risk level of 10^{-4});
  - The individual compound non-cancer risk is 10 times the acceptable level (corresponding to a hazard quotient of 10); or
  - The acceptable ecological risk level for exposure to individual ecological receptors or populations of ecological receptors to each individual substance is 10 times the acceptable risk level;
- Contaminants are reasonably likely to migrate such that a hot spot in another media would be created; or
- Contaminants are not reliably able to be contained.

The presence of a hot spot mandates the application of a higher threshold for evaluating the reasonableness of cost for removing or treating hot spots of contamination during the Feasibility Study process.

The data set was reviewed to evaluate the potential for soil, soil vapor, and ambient air hot spots to be present. The results are summarized below.

- No soil hot spots were identified based on the risk to excavation or occupational workers.
- Soil vapor hot spots were identified based on the risk of occupational vapor intrusion of PCE and/or TCE concentrations within a limited area of the shallow zone (VP-14) and from deeper sampling locations ranging from approximately 10 to 35 feet (locations VP-16, VP-17. S-2-11, D-2i, and

D-8i). The extent of the soil vapor hot spots estimated for non-carcinogenic effects and carcinogenic risks are shown on Figures 31 and 32, respectively.

- Hot spots for baseline indoor air inhalation were not identified.

The soil data set was reviewed to identify whether detected soil concentrations could be present at concentrations that would migrate and affect another media. The results are summarized below.

- Soil concentrations of chemicals greater than the three-phase partitioning equilibrium concentrations may indicate the presence of non-aqueous phase liquid (NAPL). The presence of NAPL could indicate a soil hot spot based on "highly mobile" or "not reliably contained" criteria for Hot Spot determination. Based on three-phase partitioning equilibrium concentrations in DEQ's risk-based decision making (RBDM) guidance (DEQ, 2003), as represented by the Csat concentration, no concentrations of polycyclic aromatic hydrocarbons (PAHs) or VOCs identified a hot spot based on mobility (note that the indeno(cd-1,2,3)pyrene concentration in sample B-4-2 of 0.555 mg/kg exceeds the Csat concentration [0.4 mg/kg] published in the RBDM guidance, but this sample concentration was not identified as a hot spot since the occupational direct contact RBC was established at a higher level than the Csat).

  For petroleum hydrocarbons, the residual saturation concentration in the RBDM guidance of 10,000 mg/kg was used to identify whether TPH concentrations indicative of mobile product were present. A concentration of 19,000 mg/kg of TPH-G was detected in sample DP-7-50 (collected from 50 feet bgs). This sample was collected below the terminus of the 1990 UST excavation. While this individual sample concentration exceeds the hot spot criterion for mobility, the sample does not represent a substantial source that is available for migration. Additionally, concentrations of gasoline-range petroleum VOCs (e.g., BTEX) are largely undetected in MW-4, the closest monitoring well to location DP-7.

- Based on the calculated non-carcinogenic effects and carcinogenic risks from the industrial use, concentrations of PCE are likely present in soil at concentrations that could migrate and affect this possible future beneficial use of water. The extent of the soil sources with the potential to effect this possible beneficial use of water will be mapped in the Feasibility Study.

Groundwater. In groundwater, a hot spot is present if there is an impact to beneficial use and treatment can restore that beneficial use within a reasonable timeframe. Potential hot spots in groundwater for PCE and TCE are likely present based only on potential industrial groundwater use. While groundwater consumption is not a current beneficial use, and development of shallow groundwater as a resource is unlikely, development of shallow groundwater is an allowed use and concentrations of PCE and TCE exceed EPA's MCL. The Feasibility Study will evaluate this potential hot spot.

For urban residential land uses, no hot spots were identified.

10.0 Source Control Evaluation

This section presents a SCE for the Facility prepared in accordance with Portland Harbor JSCS guidance. The pathway analysis presented below identifies groundwater as the only potentially complete pathway for migration of COPCs from the Facility to the Willamette River. Figures 21 through 23 show the location of the Facility and the dissolved-phase constituent plume in groundwater. This SCE was prepared as requested by the DEQ in their letter dated September 13, 2011.

10.1 Source Control Evaluation Objective

The objectives of the SCE for the Priestley/Tarr groundwater plume are to: (1) evaluate whether the groundwater plume represents a source of contaminants to the Willamette River; and (2) if necessary, recommend controls of potential sources of contamination that may adversely impact the Willamette River.

10.2 SCE Organization

The groundwater SCE relies on the results of the RI report as described in the following sections:

- Site Background, Description and Site Uses – Section 2
- Site Setting – Section 3
- Nature and Extent of Contamination – Section 5

The groundwater SCE is divided into four sub-sections that describe the groundwater source control screening and evaluation:

- Section 10.3 – Identification of Migration Pathways
- Section 10.4 – Identification of Source Control COPCs
- Section 10.5 – Groundwater SCE Screening
- Section 10.6 – SCE Conclusions

10.3 Identification of Migration Pathways

In accordance with the JSCS guidance, the approach to the SCE includes the identification of each known or potentially complete migration pathway to the river. The Facility is greater than 1,800 feet from the Willamette River. Given the distance of the Facility from the river, only the groundwater pathway represents a potential source to the Willamette River. Discussion of the groundwater pathway and the basis by which other pathways were excluded from the SCE are described below.

- Groundwater Pathway – Section 5 presents a detailed evaluation of the nature and extent of COPCs in groundwater. The dissolved-phase groundwater plume, which includes contaminants

from the Facility, extends from the vicinity of the Facility to the west-southwest. Plume maps showing the extent of PCE, TCE, and vinyl chloride are shown on Figures 21 through 23, respectively. The plume is between 600 and 800 feet wide and approximately 2,000 feet long. The plume attenuates with distance from the Facility but the exact terminus of groundwater exceeding applicable standards has not been definitively established. A groundwater monitoring well to be designated as MW-17 was proposed on private property adjacent to the river, but the owner has not granted access for well installation. The value of a well on accessible property is questionable, so this pathway is carried forward for future evaluation. Sources of VOCs in soil have been actively controlled since construction and operation of the SVE IRAM system in 2009.

The following pathways were found to be incomplete for transport of Facility COPCs to the river and were not carried forward in the source control evaluation:

- Stormwater Pathway – Stormwater at the Facility drains to catch basins attached to the Facility storm system. This system includes three separate subsurface piping branches, each equipped with oil/water separators that discharge to one of the two drainage outfalls (see Figure 3). Each outfall discharges to the City of Portland storm sewer system, which ultimately discharges to the Willamette River located approximately 0.3 mile southwest of the Site. The Facility is entirely paved and there is no outside storage of bulk raw materials that are available for stormwater contact. Potential sources at the Facility include petroleum from product transfer at the loading racks or the cardlock dispenser. Stormwater within each tank farm containment is inspected for sheen before it is discharged. Stormwater discharges are permitted under a National Pollution Discharge Elimination System (NPDES) General 1200-Z industrial stormwater permit (#OR11162) that is administered by the City of Portland. There have been no reported spills of hazardous substances to the City stormwater system. The Facility maintains and implements a Spill Prevention Control and Countermeasures Plan (SPCC Plan) and an Emergency Response Plan (ERP). The existing containment equipment and spill prevention procedures protect stormwater discharges. Therefore this pathway is not further assessed.
- Stormwater Conveyances as Preferential Groundwater Migration Pathway – This pathway is incomplete. The depth to groundwater is approximately 60 to 65 feet at the Facility. As described in the Risk Assessment Work Plan (RAWP; Ash Creek, 2010a), stormwater and other utility pipes are located between 2 and 8 feet bgs. Since groundwater is not in contact with buried utilities in the vicinity of the Facility, the groundwater preferential migration pathway is incomplete. Therefore this pathway is not further assessed.
- Over Water Activities – This pathway is not applicable. The Facility is greater than 1,800 feet from the river.
- Riverbank Erosion Pathway – This pathway is not applicable. The Facility is greater than 1,800 feet from the river.

10.4 Identification of Source Control COPCs

Groundwater COPCs for the Facility were identified in the RAWP (Ash Creek, 2010a) and are listed in Table 10. To identify Source Control COPCs (SCOPCs), COPC data were first screened in wells downgradient from the Facility. Wells included in this screening were MW-7, MW-8, MW-9, MW-10, MW-12, and MW-15. Table 18 presents the SCOPC screening. Any COPC detected in a downgradient well was retained for further evaluation in the SCE as a preliminary SCOPC.

10.5 Groundwater SCE Screening

In this section, preliminary SCOPCs in groundwater from MW-14 are compared to JSCS SLVs. MW-14 is most representative of groundwater potentially entering the Willamette River because it is located on the centerline of the groundwater plume and it is the monitoring well located closest to the riverfront.

Table 19 summarizes the SCOPC screening including frequency of detection, detection limits, and magnitude of SLV exceedances for groundwater from MW-14. Based on the screening in Table 19, PCE and TCE were identified as SCOPCs. The maximum detected concentrations of PCE and TCE exceeded the JSCS SLVs by a factor of 1,400 and 300, respectively.

The remaining SCOPCs are not potential sources to the Willamette River for the following reasons:

- Benzene, 1,1-DCA, trans-1,2-DCE, and methylene chloride were not detected; detection limits are less than the JSCS SLVs; and these SCOPCs were infrequently detected in wells upgradient from MW-14.
- Although detection limits for chloroform exceed the JSCS SLV by 6 to 12 times, MW-14 is located 450 feet from the Willamette River. Even if present at concentrations below the detection limit, natural attenuation processes would likely reduce concentrations to at or below the JSCS screening level prior to the river.
- The maximum detected concentration of cis-1,2-DCE is less than the JSCS SLV.

10.6 SCE Conclusions

Human health exposure pathways that are considered complete for groundwater at the transition zone include the subsistence fisher pathway and direct contact with ecological receptors. Risk screening for human health risks and ecological effects was completed to describe current conditions. The PCE and TCE EPCs in MW-14 are compared to JSCS human health SLVs (the Portland Harbor Specific Fish Consumption Rate) and ecological SLVs (ORNL Tier II SCV) in the table below.

Compound	MW-14 EPC Concentration (µg/L)	Human Health SLV		Ecological SLV	
		PDX Harbor Specific Fish Consumption Rate (µg/L)	Conc.:SLV Enrichment Ratio	ORNL Tier II SCV (µg/L)	Conc.:SLV Enrichment Ratio
Trichloroethene	52	3	17.3	47	1.1
Tetrachloroethene	167	0.33	506	98	1.7

Exceedance ratios between the MW-14 EPC and the ORNL Tier II SCV are less than two for both TCE and PCE. Given the estimated travel distance between MW-14 and the transition zone of approximately 450 feet, both TCE and PCE will attenuate to concentrations that are less than the ecological SLVs prior to reaching the transition zone.

Exceedance ratios between the MW-14 EPCs and the Portland Harbor Specific Fish Consumption Rate SLV are approximately 20 and 500 for TCE and PCE. In section 7.3.2, estimates of TCE and PCE concentrations over a river mile at the transition zone were estimated to be 0.03 µg/L and 0.06 µg/L, respectively, corresponding ELCR of 3×10^{-7} for PCE and 9×10^{-9} for TCE. Based on these average concentrations, TCE and PCE concentrations are predicted to attenuate sufficiently before the transition zone to a concentration below the human health SLV.

The screening results described above indicate that TCE and PCE are not predicted to discharge to the Willamette River at concentrations that exceed the JSCS human health SLVs. Consequently, the Priestley/Tarr site should be considered a low priority for source control measures based on the following weight of evidence evaluation:

- TCE and PCE dissolved in groundwater are not considered highly sorptive contaminants, so each has low potential to accumulate in river sediments.
- TCE and PCE are not considered harbor-wide COC.
- Active controls were implemented for soil sources at the Facility. These controls both prevented additional migration of VOCs from soil sources to groundwater, and evaluated the effectiveness and level of long term controls need for final remedy.
- Remedial action for the Priestley/Tarr Site will act as additional source controls. Since the human health risks are based on lifetime exposure and there is not a substantive current exposure for the most conservative screening level (drinking water), Site remediation will take place within a timeframe sufficient to acceptably address potential sources to the river.

Based on the data evaluation and consideration of other lines of evidence, the groundwater migration pathway is considered to represent a low priority for source control. Actions completed as part of the RI/FS,

interim actions, and subsequent remedial action will address this potential source. Implementation of additional source control measures beyond the future groundwater remedy is not required

11.0 Summary and Conclusions

The RI for this Site included chemical analysis of soil, soil vapor and ambient air, and groundwater samples conducted in phases since 2006. Contaminant sources at the Facility have resulted in impacts to each of these media within the LOF. During the RI, interim engineering controls and interim actions have been implemented to protect human health and evaluate subsurface conditions for future remedial actions, including:

- Building pressurization for the Facility office, as well as the buildings at 2405 and 2503 North Albina Avenue;
- Sub-slab venting systems for the Facility office and the adjacent 740 North Russell Building; and
- SVE IRAM for the Site soil sources.

The fate and transport of Facility-derived COPCs were evaluated, and these evaluations concluded that the extent of COPCs in both soil and groundwater are defined sufficiently for evaluating baseline risk and potential remedial alternatives. PCE and TCE are the primary COPCs for the Site. The extent of these primary COPCs are shown on Figures 11 through 23 as follows:

- PCE in soil at various depths (Figures 11 through 13);
- TCE in soil at various depths (Figures 14 through 16);
- PCE concentrations in shallow soil vapor (Figure 18);
- TCE concentrations in shallow soil vapor (Figure 19);
- PCE and TCE in ambient air (Figure 20);
- PCE in groundwater (Figure 21);
- TCE in groundwater (Figure 22); and
- Vinyl chloride in groundwater (Figure 23).

Non-carcinogenic effects and ELCRs were calculated for the pathways in the risk assessment for which default RBCs are available (direct contact, air inhalation, groundwater use). Three other pathways or non-default exposures were evaluated outside of the standard RBC approach. They included:

- DEQ requested that an RBC for excavation worker exposure to soil vapor be developed. A screening level RBC was developed for the Site and excavation worker risks were estimated.

- The fish consumption pathway was evaluated using data from MW-14, the closest monitoring point to the Willamette River.
- DEQ requested evaluation of short-term exposure to TCE, based on information in EPA's IRIS evaluation of TCE toxicity in 2011, re-calculated for short-term exposure.

Tables 20 and 21 present a summary of the HI and ELCR for each pathway. The tables account for the baseline condition, HI, or ELCR that are adjusted to account for non-Priestley/Tarr sources, and the current risk scenario (also adjusted to account for non-Priestley/Tarr sources).

Under the DEQ required exposure scenario, RME HI ranged from a high of 250 at the Facility, to 5.4 at MW-14. Nearly all of the calculated HI is the result of risk from the industrial groundwater (drinking water) pathway and the COCs for this pathway are cis-1,2 DCE, TCE, and PCE. In Table 20, HI are shown for each pathway and individual compounds with HQ > 1. In the table, individual compounds that are attributed to sources other than releases from Priestley/Tarr are shown in strikethrough. These include:

- 1,2,4-trimethylbenzene in the warehouse at the Facility; and
- PCE and TCE at 807 North Russell Street.

The non-carcinogenic hazards are also summarized on Figure 31.

After considering non-carcinogenic effects that are not attributed to Priestley/Tarr, the following compounds are considered COCs based on the HQ greater than 1:

- Diesel in soil based on the maximum detected concentration at B-7-2; and
- Concentrations of cis-1,2 DCE, TCE, and PCE in groundwater.

The ELCRs reported in Table 21 reflect the baseline condition, ELCRs adjusted to account for non-Priestley/Tarr sources, and the current risk scenario (also adjusted to account for non-Priestley/Tarr sources). A graphical summary of ELCRs is provided on Figure 32.

For current exposure pathways, ELCRs were generally acceptable under current land uses (i.e., potential groundwater use is not included in the evaluation). When industrial groundwater use is considered, unacceptable risks are present in each exposure area except the areas represented by MW-12 and MW-15 (the north and south lateral extents of the groundwater plume in the area west of Interstate Avenue). Along the centerline of the plume, ELCRs ranged from 1×10^{-3} at the Facility to 2×10^{-5} at MW-14. In Table 21, ELCRs for each pathway are shown, along with individual compounds where unacceptable ELCR were calculated. In the table, individual compounds that are attributed to sources other than releases from Priestley/Tarr are shown in strikethrough. These include:

- Methylene chloride in MW-8;
- Benzene in the shop at the Facility; and
- 1,2-DCA, TCE, and PCE at 807 North Russell Street.

After accounting for exposures that are not attributed to Priestley/Tarr, pathways with ELCRs exceeding 1×10^{-5} or individual compounds exceeding 1×10^{-6} are:

- Occupational air inhalation from outdoor areas – chloroform 4×10^{-6};
- Urban residential air inhalation from non-Facility outdoor areas, chloroform 7×10^{-6}, benzene 2×10^{-6}.
- Occupational direct contact with soil – an individual compound ELCR of 3×10^{-6} is calculated for benzo(a)pyrene. The risk results from the two samples with detectable benzo(a)pyrene concentrations (B-4-2 and B-9-1.5). Benzo(a)pyrene was not detected in the other six samples where benzo(a)pyrene was a target analyte.
- Occupational air inhalation in the Facility office – an individual compound ELCR of 2×10^{-6} is calculated for PCE.
- Occupational air inhalation at 2405 North Albina – chloroform 2×10^{-6}
- Occupational air inhalation at 816 North Russell – chloroform 2×10^{-6};
- Industrial groundwater use in MW-8 - Chloroform, benzene, 1,1-DCA, PCE, and TCE;
- Industrial groundwater use in MW-10 - Chloroform, PCE, and TCE;
- Industrial groundwater use in MW-13 and MW-14 - PCE, and TCE; and
- Urban residential air inhalation at 816 North Russell – chloroform 3×10^{-6}.

Unacceptable ELCRs from chloroform were calculated for several areas away from the Facility. The weight of evidence is inconclusive at this time with regard to the origin of the chloroform contamination in groundwater and outdoor air. Chloroform is retained as a COC for air and groundwater; however, this conclusion may be revised in the FS, prior to final remedy.

In Section 7.3.1, additional risk screening was conducted to assess excavation worker exposure to vapors that could volatilize from groundwater. This assessment was applied to areas away from the Site where vapor-phase transport from soil sources is considered negligible. Groundwater data from MW-8 and a box model from Virginia DEQ were used to calculate an estimated vapor concentration for exposures with a 40-foot and 60-foot depth to groundwater. The vapor concentration was then compared RBCs. Non-carcinogenic HI and ELCR were found to be acceptable.

In Section 7.3.2, the groundwater-surface water pathway was evaluated using estimated concentrations at the transition zone developed using data from MW-14 and the first order degradation profile along the plume centerline. Using the Portland Harbor Specific Fish Consumption SLV for PCE (0.33 µg/L) and TCE (3.0 µg/L) as the acceptable level, the estimated ELCR for the subsistence fisher pathway is 3×10^{-7} for PCE and 9×10^{-9} for TCE. Both predicted ELCR slightly are below the 10^{-6} risk level.

In Section 7.3.3, 2, screening for short-term exposure to TCE was completed based on information in EPA's IRIS evaluation of TCE toxicity in 2011, re-calculated for short-term exposure. The screening is based on "not to exceed" RBCs that are based on a 21-day averaging time. The RBCs were provided by DEQ and followed a 2010 memorandum prepared by USEPA Region 10 (EPA, 2010). Based on screening using the "not to exceed" RBCs and maximum applicable media concentrations for occupational exposures, concentrations of TCE are generally not above the "not to exceed" RBCs for short-term TCE exposure.

Soil and soil vapor concentrations exceed the short-term TCE vapor intrusion RBC for both occupational and residential exposures. However, measured concentrations of TCE do not exceed the short-term TCE RBC in ambient air, where exposure is evaluated. Therefore, baseline risks from short-term TCE exposure are predicted to be acceptable for the occupational and urban residential exposures.

Unacceptable baseline risks are present in soil, groundwater, and air within the LOF as a result of the contamination sources at the Facility. Because unacceptable risks are present, an FS is warranted for the Site. The FS will evaluate potential remedial actions to address soil, soil vapor, and groundwater remediation sufficient to reduce the Site to acceptable risk levels. The FS will include identifying and evaluating a range of alternatives, including both site-wide and source treatment.

The SCE presented in Section 10 identified that TCE and PCE are not predicted to be discharging to the Willamette River at concentrations exceeding the JSCS human health SLVs. Additional source control considerations include the fact that PCE, TCE, and other HVOCs do not readily accumulate in river sediments, the successful source controls that have already been implemented at the Facility, and remedial actions that will result from the RI/FS. This weight of evidence indicates PCE in groundwater represents a low priority for additional source control measures. The final remedy that will be required based on the results of this RI/FS will provide sufficient source control for the groundwater plume.

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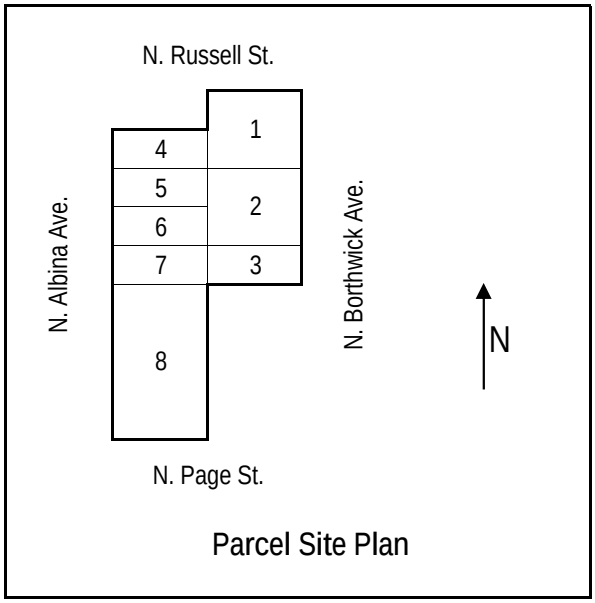
Table 1
Facility Property Data
Tarr, Inc.
Portland, Oregon

Address	Parcel	Tax Lot ID		Parcel Area in Square Feet	Building Area in Square Feet	Paved Area in Square Feet
2429 N. Borthwick Ave.	1	1N1E27CA -	01800	10,000	0	10,000
	2	1N1E27CA -	01900	10,000	5,770	3,830
	3	1N1E27CA -	02000	5,000	800	4,200
	4	1N1E27CA -	02600	5,000	0	5,000
	5	1N1E27CA -	02500	5,000	2,500	2,500
	6	1N1E27CA -	02400	5,000	2,500	2,500
	7	1N1E27CA -	02300	5,000	5,000	0
2320 N. Albina Ave.	8	1N1E27CA -	02200	20,000	4,000	16,000
			Totals	65,000	20,570	44,030

Source: Metro Database at http://topaz.metro-region.org/metromap/metromap.cfm



Parcel Site Plan

Table 2
History of Known Chemical Handling or Storage
Tarr, Inc.
Portland, Oregon

Location	Facility	Period Facility Present	Chemicals Handled at Any Time*									
			Lubricating Oil	Fuel	Waste Oil	Paint	Solvents					
							Petroleum	Ketones	Alcohols	Acetates	Glycols	Chlorinated[2]
Parcel 1	USTs	1950s - 1990		X			X	X	X	X		
	Loading Rack	1950s - Present		X			X	X	X	X	X	
	Horizontal ASTs	1963 - 1990 (+/-)										X
	Horizontal ASTs	1990 (+/-) - Present		X								
	Card Lock Dispenser	1989 - Present		X								
Parcel 2	Warehouse No. 1	1950s - Present	X				X	X	X	X	X	X
Parcel 3	ASTs	1980s - Present	X									
	Loading Rack	1980s - Present	X									
Parcel 4	ASTs	1989 - Present		X			X	X	X	X	X	
	Oil/Water Separator	1992 - Present			X							
Parcel 5	ASTs	1989 - Present					X	X	X	X	X	
	Warehouse No. 2	1972(+/-) - Present				X	X	X	X	X	X	X
	Oil/Water Separator	1992 - Present			X							
Parcel 6	Warehouse No. 3A	1977(+/-) - Present	X				X	X	X	X	X	
Parcel 7	Warehouse No. 3B	1977(+/-) - Present	X				X	X	X	X	X	
	Oil/Water Separator	1992 - Present			X							
	Clean Room	1977(+/-) - Present	X				X	X	X	X	X	
Parcel 8	Maintenance Shop	1980 - Present	X		X						X	X

Note:
1. See Section 2.3 for discussion of known periods of product handling.
2. Does not include chloroform. Chloroform was not handled at the Facility.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	HA-N-1	Tarr-165	HA-11-4	HA-12-3	DP-1-45	DP-2-53	DP-5-72	DP-6-70	DP-7-45	DP-7-50	DP-8-35	DP-10-40	DP-13-3	DP-13-19	DP-13-31	DP-13-47	DP-14-3	DP-14-23	DP-14-31	DP-14-39	MW-2-65	MW-4-44
Lab ID:	J6330.D	J7624.D	J9592.D	J9571.D	J9567.D	J9587.D	J9569.D	J9576.D	J9598.D	J9599DUP.D	J9607.D	J9604DUP.D	K7955.D	K7959.D	K7962.D	K7966.D	K7945.D	K7950.D	K7952.D	K7954.D	K8016.D	K7935.D
Date Sampled:	10/03/2002	10/31/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	07/16/2003	07/16/2003	07/16/2003	07/16/2003	07/16/2003	07/16/2003	07/16/2003	07/16/2003	07/17/2003	07/16/2003
Depth (feet):	6	14	4	3	45	53	72	70	45	50	35	40	3	19	31	47	3	23	31	39	65	44
Volatile Organic Compounds (mg/kg)																						
Acetone	7.1 U	1.2 U	0.8 U	0.8 U	0.8 U	8.1 U	0.8 U	0.8 U	0.7 U	0.7	4	0.9 U	0.6 U	0.6 U	0.6 U	0.8 U	0.6 U	1 U	0.8 U	0.8 U	0.7 U	0.6 U
Benzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.03 U	0.04 U	0.04 U	0.05 U	0.04 U	0.06 U	0.05 U	0.04 U	0.04 U	0.03 U
Bromobenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromochloromethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromodichloromethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromoform	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Bromomethane	1.4 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
2-Butanone (MEK)	3.8 U	0.6 U	0.4 U	0.4 U	0.4 U	4.3 U	0.4 U	0.4 U	0.3 U	0.4 U	1.6	0.5 U	0.3 U	0.4 U	0.4 U	0.5 U	0.4 U	0.6 U	0.5 U	0.4 U	0.4 U	0.3 U
n-Butylbenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	4.4	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
sec-Butylbenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	2.5	0.1 U	0.1 U	0.1 U	2.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
tert-Butylbenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Carbon Disulfide	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon Tetrachloride	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chlorobenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloroethane	2.9 U	0.5 U	0.3 U	0.3 U	0.3 U	3.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	0.3 U
Chloroform	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloromethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Chlorotoluene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chlorotoluene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dibromo-3-chloropropane (DBCP)	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibromochloromethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dibromoethane (EDB)	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibromomethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichlorobenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,3-Dichlorobenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,4-Dichlorobenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dichlorodifluoromethane (CFC 12)	1.9 U	0.3 U	0.2 U	0.2 U	0.2 U	2.2 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	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane (1,1-DCA)	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloroethane (EDC)	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-Dichloroethene (1,1-DCE)	2.4 U	0.4 U	0.3 U	0.3 U	0.3 U	2.7 U	0.3 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U	0.4 U	0.3 U	0.3 U	0.3 U	0.2 U
cis-1,2-Dichloroethene	1.4 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6 U	0.2 U	0.2 U	5.7	0.1 U	0.1 U	0.2 U	0.2	0.3	0.6	0.2 U	0.9	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
trans-1,2-Dichloroethene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,3-Dichloropropane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2-Dichloropropane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-Dichloropropene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
cis-1,3-Dichloropropene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
trans-1,3-Dichloropropene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Ethylbenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	12.8	0.1 U	0.1 U	36.2	30.5	0.4	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
Hexachlorobutadiene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Hexanone	3.8 U	0.6 U	0.4 U	0.4 U	0.4 U	4.3 U	0.4 U	0.4 U	0.3 U	0.4 U	0.4 U	0.5 U	0.3 U	0.4 U	0.4 U	0.5 U	0.4 U	0.6 U	0.5 U	0.4 U	0.4 U	0.3 U
Isopropylbenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	5.4	0.1 U	0.1 U	12	10.6	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
p-Isopropyltoluene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	2.4	0.1 U	0.1 U	2.8	2.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Methyl-2-pentanone (MIBK)	3.8 U	0.6 U	0.4 U	0.4 U	0.4 U	4.3 U	0.4 U	0.4 U	0.3 U	0.4 U	0.4 U	0.5 U	0.3 U	0.4 U	0.4 U	0.5 U	0.4 U	0.6 U	0.5 U	0.4 U	0.4 U	0.3 U
Methyl-t-butylether (MTBE)	1.9 U	0.3 U	0.2 U	0.2 U	0.2 U	2.2 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	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride (Dichloromethane)	5.7 U	0.9 U	0.6 U	0.6 U	0.6 U	6.5 U	0.8 **	0.6 U	0.5	1.9	0.6 U	0.7 U	0.5 U	0.6 U	0.6 U	0.7 U	0.5 U	0.8 U	0.7 U	0.7 U	0.6 U	0.5 U
Naphthalene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	5.5	0.1 U	0.1 U	6.5	5.4	0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
n-Propylbenzene	1.4 U	0.2 U	0.2 U	0.2 U	0.2 U	11.5	0.2 U	0.2 U	27.9	24.0	0.4	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
Styrene	7.2	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,1,2-Tetrachloroethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2,2-Tetrachloroethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Tetrachloroethene (PCE)	28.6	0.2 U	0.7	0.1 U	0.1 U	1.3	0.1 U	0.1 U	10.2	4.8	0.1	0.1 U	1.2	7.6	5.3	0.1	4.7	0.1	0.2	0.2	0.6	0.2
Toluene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	103	0.1 U	0.1 U	291	251	4	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
1,2,3-Trichlorobenzene	1.4 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
1,2,4-Trichlorobenzene	1.4 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
1,1,1-Trichloroethane (TCA)	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2-Trichloroethane	1 U	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Trichloroethene (TCE)	0.2	0.2 U	0.1 U	0.1 U	0.1 U	1.1 U	0.1 U	0.1 U	0.8	0.3	0.1 U	0.1 U	0.5	0.7	0.8	0.1 U	2.3	0.1 U	0.1 U	0.1 U	0.1	0.1 U
Trichlorofluoromethane (CFC 11)	1.4 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
1,2,3-Trichloropropane	1 U	0.2 U	0.2 U	0.2 U	0.2 U	1.6 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U
1,2,4-Trimethylbenzene	1 U	0.2 U	0.1 U	0.1 U	0.1 U	45.4	0.1 U	0.1 U	86.3	75.8	1.4	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
1,3,5-Trimethylbenzene	1.9 U	0.2 U	0.1 U	0.1 U	0.1 U	20.3	0.1 U	0.1 U	46.6	38.7	0.6	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
Vinyl Chloride	1 U	0.3 U	0.2 U	0.2 U	0.2 U	2.2 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	0.3 U	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	1 U	0.2 U	0.1 U	0.1 U	0.1 U	63.9	0.1 U	0.1 U	155	158	2.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

Notes:
1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-4-56	MW-4-64	MW-5-1.5	MW-5-1.5-Dup	MW-5-7.8	MW-5-20.3	B-1-2	B-1-23	B-1-58.5	B-2-2	B-3-2	B-3-7.5	B-3-41	B-3-58	B-4-2	B-5-2.5	B-5-2.5-Dup	B-5-12.5	B-5-31	B-5-37	B-5-66.5	B-5-66.5-Dup	B-5-72.5	B-5-82	B-6-3	B-6-16.5	B-7-2
Lab ID:	K7938.D	K7940.D	PPE0991-01	PPE0991-12	PPE0991-02	PPE0991-03	PPE1080-14	PPE1080-15	PPE1080-16	PPE1080-17	PPE1080-01	PPE1080-02	PPE1080-03	PPE1080-04	PPE1080-18	PPE0991-04	PPE0991-13	PPE0991-05	PPE0991-06	PPE0991-07	PPE0991-08	PPE0991-14	PPE0991-09	PPE0991-10	PPE1080-05	PPE1080-06RE	PPE1080-07
Date Sampled:	07/16/2003	07/16/2003	5/18/2006	5/18/2006	5/18/2006	5/18/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/23/2006	5/22/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/19/2006	5/23/2006	5/23/2006	5/23/2006
Depth (feet):	56	64	1.5	1.5	7.8	20.3	2	23	58.5	2	2	7.5	41	58	2	2.5	2.5	12.5	31	37	66.5	66.5	72.5	82	3	16.5	2
Volatile Organic Compounds (mg/kg)																											
Acetone	0.7 U	0.5 U	4.48 U	4.48 U	8.45 J	0.0284 U	13 U	2.4 U	2.18 U	1.74 U	2.95 U	2.42 U	1.18 U	4.92 U	2.01 U	4.5 U	4.5 U	4.93 U	5.06 U	5.62 U	5.02 U	5.02 U	9.46 U	0.0281 U	0.998 U	1.22 U	57 U
Benzene	0.04 U	0.03 U	0.0359 U	0.0359 U	0.0392 U	0.00142 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.036 U	0.036 U	0.0394 U	0.0405 U	0.0449 U	0.0402 U	0.0402 U	0.0757 U	0.00141 U	0.0998 U	0.122 U	5.7 U
Bromobenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Bromochloromethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Bromodichloromethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Bromoform	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Bromomethane	0.2 U	0.1 U	0.897 U	0.897 U	0.981 U	0.00946 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.00938 U	0.0998 U	0.122 U	5.7 U
2-Butanone (MEK)	0.4 U	0.3 U	1.79 U	1.79 U	1.96 U	0.0142 U	13 U	2.4 U	2.18 U	1.74 U	2.95 U	2.42 U	1.18 U	4.92 U	2.01 U	1.8 U	1.8 U	1.97 U	2.02 U	2.25 U	2.01 U	2.01 U	3.78 U	0.0141 U	0.998 U	1.22 U	57 U
n-Butylbenzene	0.1 U	0.1 U	0.897 U	0.897 U	0.981 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	1.51	0.242 U	0.118 U	0.492 U	0.201 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.00469 U	0.0998 U	0.122 U	5.7 U
sec-Butylbenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.907	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
tert-Butylbenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Carbon Disulfide	--	--	1.79 U	1.79 U	1.96 U	0.00284 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	1.8 U	1.8 U	1.97 U	2.02 U	2.25 U	2.01 U	2.01 U	3.78 U	0.00281 U	0.0998 U	0.122 U	5.7 U
Carbon Tetrachloride	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Chlorobenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00189 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00188 U	0.0998 U	0.122 U	5.7 U
Chloroethane	0.3 U	0.2 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Chloroform	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00237 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00234 U	0.0998 U	0.122 U	5.7 U
Chloromethane	0.1 U	0.1 U	0.897 U	0.897 U	0.981 U	0.00946 U	6.51 U	1.2 U	1.09 U	0.868 U	1.48 U	1.21 U	0.589 U	2.46 U	1.00 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.00938 U	0.499 U	0.609 U	28.5 U
2-Chlorotoluene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
4-Chlorotoluene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,2-Dibromo-3-chloropropane (DBCP)	0.1 U	0.1 U	0.897 U	0.897 U	0.981 U	0.00946 U	6.51 U	1.2 U	1.09 U	0.868 U	1.48 U	1.21 U	0.589 U	2.46 U	1.00 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.00938 U	0.499 U	0.609 U	28.5 U
Dibromochloromethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,2-Dibromoethane (EDB)	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Dibromomethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,2-Dichlorobenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,3-Dichlorobenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,4-Dichlorobenzene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Dichlorodifluoromethane (CFC 12)	0.2 U	0.2 U	0.897 U	0.897 U	0.981 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,1-Dichloroethane (1,1-DCA)	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00986	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00281	0.0998 U	0.122 U	5.7 U
1,2-Dichloroethane (EDC)	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00118 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00117 U	0.0998 U	0.122 U	5.7 U
1,1-Dichloroethene (1,1-DCE)	0.3 U	0.2 U	0.179 U	0.179 U	0.196 U	0.00284 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00281 U	0.0998 U	0.122 U	5.7 U
cis-1,2-Dichloroethene	0.5	0.1 U	0.179 U	0.179 U	0.504	0.0379 E	1.3 U	0.288	0.767	0.229	6.93	3.51	0.238	0.743	4.27	0.925	0.977	2.03	0.435	0.225 U	2.94	3.15	2.98	0.0416	0.0998 U	1.03	5.7 U
trans-1,2-Dichloroethene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00237 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00234 U	0.0998 U	0.122 U	5.7 U
1,2-Dichloropropane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,3-Dichloropropane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
2,2-Dichloropropane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00946 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00938 U	0.0998 U, Q-41	0.122 U	5.7 U, Q-41
1,1-Dichloropropene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
cis-1,3-Dichloropropene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
trans-1,3-Dichloropropene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00118 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00117 U	0.0998 U	0.122 U	5.7 U
Ethylbenzene	0.1 U	0.1 U	3.87	3.98	0.573	0.00379 U	1.3 U	0.24 U	0.218 U	0.174 U	0.458	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00375 U	0.0998 U	0.122 U	17.3
Hexachlorobutadiene	0.1 U	0.1 U	0.717 U	0.717 U	0.785 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.72 U	0.72 U	0.788 U	0.809 U	0.899 U	0.804 U	0.804 U	1.51 U	0.00469 U	0.0998 U	0.122 U	5.7 U
2-Hexanone	0.4 U	0.3 U	1.79 U	1.79 U	1.96 U	0.0189 U	13 U	2.4 U	2.18 U	1.74 U	2.95 U	2.42 U	1.18 U	4.92 U	2.01 U	1.8 U	1.8 U	1.97 U	2.02 U	2.25 U	2.01 U	2.01 U	3.78 U	0.0188 U	0.998 U	1.22 U	57 U
Isopropylbenzene	0.1 U	0.1 U	0.69	0.712	0.392 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	1.38	0.242 U	0.118 U	0.492 U	0.201 U	0.36 U	0.36 U	0.394 U	0.405 U	0.449 U	0.402 U	0.402 U	0.757 U	0.00469 U	0.0998 U	0.122 U	5.7 U
p-Isopropyltoluene	0.1 U	0.1 U	0.359 U	0.359 U	0.392 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	2.92	0.242 U	0.118 U	0.492 U	0.201 U	0.36 U	0.36 U	0.394 U	0.405 U	0.449 U	0.402 U	0.402 U	0.757 U	0.00469 U	0.0998 U	0.122 U	5.7 U
4-Methyl-2-pentanone (MIBK)	0.4 U	0.3 U	0.897 U	0.897 U	0.981 U	0.0189 U	13 U	2.4 U	2.18 U	1.74 U	2.95 U	2.42 U	1.18 U	4.92 U	2.01 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.0188 U	0.998 U	1.22 U	57 U
Methyl-t-butylether (MTBE)	0.2 U	0.2 U	0.179 U	0.179 U	0.196 U	0.00095 U	6.51 U	1.2 U	1.09 U	0.868 U	1.48 U	1.21 U	0.589 U	2.46 U	1.00 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00094 U	0.499 U	0.609 U	28.5 U
Methylene Chloride (Dichloromethane)	0.6 U	0.5 U	0.897 U	0.897 U	0.981 U	0.00331 U	13 U	2.40 U	2.18 U	1.74 U	2.95 U	2.42 U	1.18 U	4.92 U	2.01 U	0.9 U	0.9 U	0.985 U	1.01 U	1.12 U	1 U	1 U	1.89 U	0.00328 U	0.998 U	1.22 U	57 U
Naphthalene	0.1 U	0.1 U	0.359 U	0.359 U	0.392 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.464	0.242 U	0.118 U	0.492 U	0.201 U	0.36 U	0.36 U	0.394 U	0.405 U	0.449 U	0.402 U	0.402 U	0.757 U	0.00469 U	0.0998 U	0.122 U	5.7 U
n-Propylbenzene	0.2 U	0.1 U	2.05	2.09	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	1.56	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.81
Styrene	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00095 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00094 U	0.0998 U	0.122 U	5.7 U
1,1,1,2-Tetrachloroethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,1,2,2-Tetrachloroethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
Tetrachloroethene (PCE)	5.3	0.3	0.274	0.23	0.196 U	0.268 E	45	6.74	17.5	3.36	240	6.74	5.70	17.1	0.201 U	10.7	10.6	13	5.44	0.748	38.1	37.2	42.3	0.0253 A-01a	0.951	11.9	5.7 U
Toluene	0.1 U	0.1 U	15.5	16.1	4.64	0.00906	1.3 U	0.24 U	0.218 U	0.174 U	0.52	0.242 U	0.118 U	0.492 U	0.514	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00141 U	0.0998 U	0.122 U	31.5
1,2,3-Trichlorobenzene	0.2 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,2,4-Trichlorobenzene	0.2 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,1,1-Trichloroethane (TCA)	0.1 U	0.1 U	0.194	0.195	0.196 U	0.0139	1.3 U	0.24 U	0.218 U	0.174 U	0.328	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.356	0.402	0.382	0.00234 U	0.0998 U	0.122 U	5.7 U
1,1,2-Trichloroethane	0.1 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00118 U	1.3 U	0.24 U	0.218 U	0.174 U	1.38	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00117 U	0.0998 U	0.122 U	5.7 U
Trichloroethene (TCE)	0.8	0.06	0.179 U	0.179 U	0.196 U	0.0474 E	1.35	0.879	3	0.576	76.1	1.38	0.675	2.27	0.201 U	1.12	1.11	1.83	0.716	0.225 U	6.62	6.77	7.58	0.0128	0.134	1.95	5.7 U
Trichlorofluoromethane (CFC 11)	0.2 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,2,3-Trichloropropane	0.2 U	0.1 U	0.179 U	0.179 U	0.196 U	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	5.7 U
1,2,4-Trimethylbenzene	0.1 U	0.1 U	12.4	12.5	0.918	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	6.19	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	76.5
1,3,5-Trimethylbenzene	0.1 U	0.1 U	5.51	5.7	0.412	0.00473 U	1.3 U	0.24 U	0.218 U	0.174 U	4.38	0.242 U	0.118 U	0.492 U	0.201 U	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	0.0998 U	0.122 U	30.9
Vinyl Chloride	0.2 U	0.2 U	0.179 U	0.179 U	0.196 U	0.00237 U	1.3 U	0.24 U	0.218 U	0.174 U	0.295 U	0.242 U	0.118 U	0.492 U	0.323	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00644	0.0998 U	0.122 U	5.7 U
o-Xylene	--	--	10.4	10.3	2.28	0.00503	--	--	--	--	--	--	--	--	--	0.18 U	0.18 U	0.197 U	0.202 U	0.225 U	0.201 U	0.201 U	0.378 U	0.00469 U	--	--	--
m,p-Xylene	--	--	21.7	21.9	2.72	0.00682	--	--	--	--	--	--	--	--	--	0.36 U	0.36 U	0.394 U	0.405 U	0.449 U	0.402 U	0.402 U	0.757 U	0.00469 U	--	--	--
Total Xylenes	0.1 U	0.1 U	--	--	--	0.0119	3.9 U	0.719 U	0.654 U	0.521 U	1.03	0.726 U	0.353 U	1.48 U	0.602 U	--	--	--	--	--	--	--	--	0.00938 U	0.299 U	0.365 U	211

Notes:
1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	B-7-6	B-7-6D	B-8-2	B-9-1.5	B-10-5	B-11-7.5	B-12-9	B-13-9.5	B-14-1.25	B-14-17.5	B-15-2	B-15-26.5	B-15-51.5	B-16-5	B-16-5-DUP	B-17-9	B-18-1.5	B-19-1	B-20-1.5	B-20-21.5	B-20-26.5	B-21-2	B-22-7	B-23-3	B-23-12	B-24-1
Lab ID:	PPE1080-08	PPE1080-09	PPG0503-08	PPG0503-05	PPG0503-01	PPE1080-10	PPG0494-01	PPG0494-02	PPF0557-01	PPF0557-02	PPF0557-03	PPF0557-04	PPF0557-05	PPG0494-11	PPG0494-18	PPG0494-12	PPG0494-13	PPG0494-14	PPF0557-06	PPF0557-07	PPF0557-08	PPG0494-15	PPG0503-02	PPG0503-03	PPG0503-04	PPG0494-03
Date Sampled:	5/23/2006	5/23/2006	07/13/2006	07/12/2006	07/12/2006	5/23/2006	7/10/2006	07/10/2006	06/10/2006	06/10/2006	06/10/2006	06/10/2006	06/10/2006	07/11/2006	07/11/2006	07/11/2006	07/10/2006	07/11/2006	06/10/2006	06/10/2006	06/10/2006	07/10/2006	07/12/2006	07/12/2006	07/12/2006	07/10/2006
Depth (feet):	6	6	2	1.5	5	7.5	9	9.5	1.25	17.5	2	26.5	51.5	5	5	9	1.5	1	1.5	21.5	26.5	2	7	3	12	1
Volatile Organic Compounds (mg/kg)																										
Acetone	0.993 U	0.895 U	2.61 U	168	2.6 U	1.09 U	2.65 U	2.68 U	2.36 U	2.36 U	2.44 U	3.1 U	2.8 U	2.4 U	2.4 U	2.76 U	2.76 U	2.58 U	2.37 U	2.75 U	2.51 U	2.52 U	2.78 U	2.32 U	2.84 U	11 U
Benzene	0.0993 U	0.0895 U	0.0209 U	0.1 U	0.0208 U	0.109 U	0.0212 U	0.021 U	0.0189 U	0.0189 U	0.0195 U	0.0248 U	0.0224 U	0.0192 U	0.0192 U	0.0221 U	0.0221 U	0.0206 U	0.019 U	0.022 U	0.0201 U	0.0202 U	0.0222 U	0.0186 U	0.0227 U	0.0881 U
Bromobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Bromochloromethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Bromodichloromethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Bromoform	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Bromomethane	0.0993 U	0.0895 U	0.523 U	2.5 U	0.52 U	0.109 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
2-Butanone (MEK)	0.993 U	0.895 U	1.05 U	5 U	1.04 U	1.09 U	1.06 U	1.07 U	0.945 U	0.944 U	0.976 U	1.24 U	1.12 U	0.96 U	0.96 U	1.11 U	1.1 U	1.03 U	0.948 U	1.1 U	1 U	1.01 U	1.11 U	0.93 U	1.14 U	4.4 U
n-Butylbenzene	0.0993 U	0.0895 U	0.523 U	2.5 U	0.52 U	0.109 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
sec-Butylbenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
tert-Butylbenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Carbon Disulfide	0.0993 U	0.0895 U	1.05 U	5 U	1.04 U	0.109 U	1.06 U	1.07 U	0.945 U	0.944 U	0.976 U	1.24 U	1.12 U	0.96 U	0.96 U	1.11 U	1.1 U	1.03 U	0.948 U	1.1 U	1 U	1.01 U	1.11 U	0.93 U	1.14 U	4.4 U
Carbon Tetrachloride	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Chlorobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Chloroethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Chloroform	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Chloromethane	0.496 U	0.448 U	0.523 U	2.5 U	0.52 U	0.544 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
2-Chlorotoluene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
4-Chlorotoluene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2-Dibromo-3-chloropropane (DBCP)	0.496 U	0.448 U	0.523 U	2.5 U	0.52 U	0.544 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
Dibromochloromethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2-Dibromoethane (EDB)	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Dibromomethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2-Dichlorobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,3-Dichlorobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,4-Dichlorobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Dichlorodifluoromethane (CFC 12)	0.0993 U	0.0895 U	0.523 U	2.5 U	0.52 U	0.109 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
1,1-Dichloroethane (1,1-DCA)	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2-Dichloroethane (EDC)	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,1-Dichloroethene (1,1-DCE)	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
cis-1,2-Dichloroethene	0.1	0.0904	0.105 U	0.55	0.104 U	0.109 U	0.106 U	0.129	0.0945 U	0.0944 U	0.131	0.124 U	0.126	0.096 U	0.096 U	0.164	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
trans-1,2-Dichloroethene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2-Dichloropropane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,3-Dichloropropane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
2,2-Dichloropropane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,1-Dichloropropene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
cis-1,3-Dichloropropene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
trans-1,3-Dichloropropene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Ethylbenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Hexachlorobutadiene	0.0993 U	0.0895 U	0.418 U	2 U	0.416 U	0.109 U	0.424 U	0.428 U	0.378 U	0.377 U	0.3904 U	0.495 U	0.448 U	0.384 U	0.384 U	0.442 U	0.441 U	0.413 U	0.3792 U	0.439 U	0.401 U	0.403 U	0.444 U	0.372 U	0.454 U	1.76 U
2-Hexanone	0.993 U	0.895 U	1.05 U	5 U	1.04 U	1.09 U	1.06 U	1.07 U	0.945 U	0.944 U	0.976 U	1.24 U	1.12 U	0.96 U	0.96 U	1.11 U	1.1 U	1.03 U	0.948 U	1.1 U	1 U	1.01 U	1.11 U	0.93 U	1.14 U	4.4 U
Isopropylbenzene	0.0993 U	0.0895 U	0.209 U	1 U	0.208 U	0.109 U	0.212 U	0.214 U	0.189 U	0.189 U	0.195 U	0.248 U	0.224 U	0.192 U	0.192 U	0.221 U	0.221 U	0.206 U	0.19 U	0.22 U	0.201 U	0.202 U	0.222 U	0.186 U	0.227 U	0.881 U
p-Isopropyltoluene	0.0993 U	0.0895 U	0.209 U	1 U	0.208 U	0.109 U	0.212 U	0.214 U	0.189 U	0.189 U	0.195 U	0.248 U	0.224 U	0.192 U	0.192 U	0.221 U	0.221 U	0.206 U	0.19 U	0.22 U	0.201 U	0.202 U	0.222 U	0.186 U	0.227 U	0.881 U
4-Methyl-2-pentanone (MIBK)	0.993 U	0.895 U	0.523 U	2.5 U	0.52 U	1.09 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
Methyl-t-butylether (MTBE)	0.496 U	0.448 U	0.105 U	0.5 U	0.104 U	0.544 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Methylene Chloride (Dichloromethane)	0.993 U	0.895 U	0.523 U	2.5 U	0.52 U	1.09 U	0.53 U	0.535 U	0.472 U	0.472 U	0.488 U	0.619 U	0.56 U	0.48 U	0.48 U	0.553 U	0.552 U	0.516 U	0.474 U	0.549 U	0.502 U	0.504 U	0.555 U	0.465 U	0.568 U	2.2 U
Naphthalene	0.0993 U	0.0895 U	0.209 U	1 U	0.208 U	0.109 U	0.212 U	0.214 U	0.189 U	0.189 U	0.195 U	0.248 U	0.224 U	0.192 U	0.192 U	0.221 U	0.221 U	0.206 U	0.19 U	0.22 U	0.201 U	0.202 U	0.222 U	0.186 U	0.227 U	0.881 U
n-Propylbenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Styrene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,1,1,2-Tetrachloroethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,1,2,2-Tetrachloroethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Tetrachloroethene (PCE)	0.67	0.619	1.11	3.24	19.8	0.109 U	0.225	1.89	4.66	0.691	14.3	1.49	1.96	1.31	1.31	1.45	0.361	4.47	2.93	0.576	0.869	4.38	1.18	18.4	2.47	38.2
Toluene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.109	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2,3-Trichlorobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2,4-Trichlorobenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.155	0.114 U	0.471
1,1,1-Trichloroethane (TCA)	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,1,2-Trichloroethane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Trichloroethene (TCE)	0.105	0.0949	0.142	0.75	2.5	0.109 U	0.106 U	0.303	0.456	0.0944	1.61	0.18	0.251	0.234	0.221	0.305	0.11 U	0.248	0.178	0.11 U	0.1 U	0.108	0.188	0.729	0.385	1.51
Trichlorofluoromethane (CFC 11)	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2,3-Trichloropropane	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,2,4-Trimethylbenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
1,3,5-Trimethylbenzene	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
Vinyl Chloride	0.0993 U	0.0895 U	0.105 U	0.5 U	0.104 U	0.109 U	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
o-Xylene	--	--	0.105 U	0.5 U	0.104 U	--	0.106 U	0.107 U	0.0945 U	0.0944 U	0.0976 U	0.124 U	0.112 U	0.096 U	0.096 U	0.111 U	0.11 U	0.103 U	0.0948 U	0.11 U	0.1 U	0.101 U	0.111 U	0.093 U	0.114 U	0.44 U
m,p-Xylene	--	--	0.209 U	1 U	0.208 U	--	0.212 U	0.214 U	0.189 U	0.189 U	0.195 U	0.248 U	0.224 U	0.192 U	0.192 U	0.221 U	0.221 U	0.206 U	0.19 U	0.22 U	0.201 U	0.202 U	0.222 U	0.186 U	0.227 U	0.881 U
Total Xylenes	0.298 U	0.269 U	--	--	--	0.326 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	B-25-1.5	B-25-1.5-DUP	B-25-9	B-26-1.5	B-27-1.5	B-27-8.8	B-27-8.8-DUP	B-27-21	B-28-3	B-29-6	B-30-4	B-31-7	B-32-1.5	B-33-1.25	B-34-1	B-35-1.5	B-36-6	SV-A-2	SV-B-3	SV-C-3	B-47-3	B-47-5	B-47-5 Dup	B-47-6	B-52-0-5	B-52-10-15
Lab ID:	PPG0494-04	PPG0494-16	PPG0494-05	PPG0494-06	PPG0494-07	PPG0494-08	PPG0494-17	PPG0494-09	PPG0503-06	PPG0503-07	PPE1080-19	PPE1080-20	PPG0494-10	PPE1080-11	PPE1080-12	PPE0991-11	PPE1080-13	PQE0189-01	PQE0189-02	PQE0189-03	PQE1119-03	PQE1119-05	PQE1119-07	PQE1119-06	PRI0042-01	PRI0042-03
Date Sampled:	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/13/2006	07/13/2006	5/22/2006	5/22/2006	07/10/2006	5/23/2006	5/23/2006	5/19/2006	5/23/2006	5/2/2007	5/2/2007	5/2/2007	5/21/2007	5/21/2007	5/21/2007	5/21/2007	9/2/2008	9/2/2008
Depth (feet):	1.5	1.5	9	1.5	1.5	8.8	8.8	21	3	6	4	7	1.5	1.25	1	1.5	6	4.8-5.3	4.8-5.3	4.8-5.3	8.2-8.5	13.2-13.5	13.2-13.5	16.7-17	0-5	10-15
Volatile Organic Compounds (mg/kg)																										
Acetone	2.5 U	2.5 U	2.69 U	2.62 U	2.4 U	2.42 U	2.42 U	2.65 U	2.5 U	2.24 U	2.03 U	2 U	2.49 U	0.893 U	1.08 U	0.0282 U	1.07 U	5.38 U	4.03 U	4.11 U	5.21 U	5.14 U	5.29 U	4.93 U	3.29 U	3.29 U
Benzene	0.02 U	0.02 U	0.0215 U	0.021 U	0.0192 U	0.0194 U	0.0194 U	0.0212 U	0.02 U	0.0179 U	0.203 U	0.2 U	0.0508	0.0893 U	0.108 U	0.00141 U	0.107 U	0.043 U	0.322 U	0.0329 U	0.0417 U	0.0411 U	0.0423 U	0.0394 U	0.0263 U	0.0263 U
Bromobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Bromochloromethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Bromodichloromethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Bromoform	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Bromomethane	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	0.203 U	0.2 U	0.498 U	0.0893 U	0.108 U	0.0094 U	0.107 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
2-Butanone (MEK)	0.999 U	0.999 U	1.08 U	1.05 U	0.961 U	0.968 U	0.968 U	1.06 U	1 U	0.897 U	2.03 U	2 U	0.995 U	0.893 U	1.08 U	0.0141 U	1.07 U	2.15 U	1.61 U	1.64 U	2.09 U	2.06 U	2.12 U	1.97 U	1.31 U	1.32 U
n-Butylbenzene	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	0.203 U	0.2 U	0.498 U	0.0893 U	0.108 U	0.0047 U	0.107 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
sec-Butylbenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
tert-Butylbenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Carbon Disulfide	0.999 U	0.999 U	1.08 U	1.05 U	0.961 U	0.968 U	0.968 U	1.06 U	1 U	0.897 U	0.203 U	0.2 U	0.995 U	0.0893 U	0.108 U	0.00282 U	0.107 U	2.15 U	1.61 U	1.64 U	2.09 U	2.06 U	2.12 U	1.97 U	1.31 U	1.32 U
Carbon Tetrachloride	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.131 U
Chlorobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00188 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Chloroethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Chloroform	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00235 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Chloromethane	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	1.02 U	0.999 U	0.498 U	0.447 U	0.539 U	0.0094 U	0.536 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
2-Chlorotoluene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
4-Chlorotoluene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2-Dibromo-3-chloropropane (DBCP)	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	1.02 U	0.999 U	0.498 U	0.447 U	0.539 U	0.0094 U	0.536 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
Dibromochloromethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2-Dibromoethane (EDB)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Dibromomethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2-Dichlorobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,3-Dichlorobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,4-Dichlorobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Dichlorodifluoromethane (CFC 12)	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	0.203 U	0.2 U	0.498 U	0.0893 U	0.108 U	0.0047 U	0.107 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
1,1-Dichloroethane (1,1-DCA)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00188 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2-Dichloroethane (EDC)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00117 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,1-Dichloroethene (1,1-DCE)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00282 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
cis-1,2-Dichloroethene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00282 U	0.107 U	0.215 U	0.161 U	0.229	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
trans-1,2-Dichloroethene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00235 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2-Dichloropropane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,3-Dichloropropane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
2,2-Dichloropropane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0094 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,1-Dichloropropene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
cis-1,3-Dichloropropene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
trans-1,3-Dichloropropene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00117 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Ethylbenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00376 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Hexachlorobutadiene	0.4 U	0.4 U	0.43 U	0.419 U	0.384 U	0.387 U	0.387 U	0.424 U	0.4 U	0.359 U	0.203 U	0.2 U	0.398 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.861 U	0.645 U	0.658 U	0.834 U	0.822 U	0.846 U	0.788 U	0.526 U	0.527 U
2-Hexanone	0.999 U	0.999 U	1.08 U	1.05 U	0.961 U	0.968 U	0.968 U	1.06 U	1 U	0.897 U	2.03 U	2 U	0.995 U	0.893 U	1.08 U	0.0188 U	1.07 U	2.15 U	1.61 U	1.64 U	2.09 U	2.06 U	2.12 U	1.97 U	1.31 U	1.32 U
Isopropylbenzene	0.2 U	0.2 U	0.215 U	0.21 U	0.192 U	0.194 U	0.194 U	0.212 U	0.2 U	0.179 U	0.203 U	0.2 U	0.199 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.322 U	0.329 U	0.417 U	0.411 U	0.423 U	0.394 U	0.263 U	0.263 U
p-Isopropyltoluene	0.2 U	0.2 U	0.215 U	0.21 U	0.192 U	0.194 U	0.194 U	0.212 U	0.2 U	0.179 U	0.203 U	0.2 U	0.199 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.43 U	0.322 U	0.329 U	0.417 U	0.411 U	0.423 U	0.394 U	0.263 U	0.263 U
4-Methyl-2-pentanone (MIBK)	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	2.03 U	2 U	0.498 U	0.893 U	1.08 U	0.0188 U	1.07 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
Methyl-t-butylether (MTBE)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	1.02 U	0.999 U	0.0995 U	0.447 U	0.539 U	0.00094 U	0.536 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Methylene Chloride (Dichloromethane)	0.5 U	0.5 U	0.538 U	0.524 U	0.48 U	0.484 U	0.484 U	0.53 U	0.5 U	0.449 U	2.03 U	2 U	0.498 U	0.893 U	1.08 U	0.00329 U	1.07 U	1.08 U	0.806 U	0.822 U	1.04 U	1.03 U	1.06 U	0.985 U	0.657 U	0.658 U
Naphthalene	0.2 U	0.2 U	0.215 U	0.21 U	0.192 U	0.194 U	0.194 U	0.212 U	0.2 U	0.179 U	0.203 U	0.2 U	0.199 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.43 U	0.322 U	0.329 U	0.417 U	0.411 U	0.423 U	0.394 U	0.263 U	0.263 U
n-Propylbenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Styrene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00094 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,1,1,2-Tetrachloroethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,1,2,2-Tetrachloroethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Tetrachloroethene (PCE)	6.18	5.83	1.28	1.13	8.49	4.7	4.74	1.06	4.58	0.372	0.421	0.561	3.72	0.0893 U	0.160	0.0113 A-01a	0.107 U	0.943	1.12	1.79	5.15	0.861	2.2	1.2	0.281	0.17
Toluene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00141 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2,3-Trichlorobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2,4-Trichlorobenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,1,1-Trichloroethane (TCA)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00235 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,1,2-Trichloroethane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00117 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Trichloroethene (TCE)	0.109	0.108	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00235 U	0.107 U	0.215 U	0.168	0.217	0.657	0.206 U	0.265	0.197 U	0.131 U	0.132 U
Trichlorofluoromethane (CFC 11)	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2,3-Trichloropropane	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,2,4-Trimethylbenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
1,3,5-Trimethylbenzene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.0047 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
Vinyl Chloride	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	0.203 U	0.2 U	0.0995 U	0.0893 U	0.108 U	0.00235 U	0.107 U	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
o-Xylene	0.0999 U	0.0999 U	0.108 U	0.105 U	0.0961 U	0.0968 U	0.0968 U	0.106 U	0.1 U	0.0897 U	--	--	0.0995 U	--	--	0.0047 U	--	0.215 U	0.161 U	0.164 U	0.209 U	0.206 U	0.212 U	0.197 U	0.131 U	0.132 U
m,p-Xylene	0.2 U	0.2 U	0.215 U	0.21 U	0.192 U	0.194 U	0.194 U	0.212 U	0.2 U	0.179 U	--	--	0.199 U	--	--	0.0047 U	--	0.43 U	0.322 U	0.329 U	0.417 U	0.411 U	0.423 U	0.394 U	0.263 U	0.263 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	0.61 U	0.599 U	--	0.268 U	0.323 U	0.0094 U	0.322 U	--	--	--	--	--	--	--	--	--

Notes:
1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	B-52-15-20	B-53-10-15	B-53-0-5	B-53-15-20	B-55-0-5	B-55-40-45	B-56-0-5	B-56-10-15	B56-45-50	B56-DUP	B-57-0-5	B-57-10-15	B-57-30-35	B-59-10-15	B-59-40-45
Lab ID:	PRI0042-04	PRI0042-07	PRI0042-05	PRI0042-08REI	PSG0737-01	PSG0737-09	PSG0791-01	PSG0791-03	PSG0791-10	PSG0791-11	PSG0791-14	PSG0791-16	PSG0791-20	PSG0846-03	PSG0846-09
Date Sampled:	9/2/2008	9/2/2008	9/2/2008	9/2/2008	7/22/2009	7/22/2009	7/23/2009	7/23/2009	7/23/2009	7/23/2009	7/23/2009	7/23/2009	7/23/2009	7/24/2009	7/24/2009
Depth (feet):	15-20	10-15	0-5	15-20	0-5	40-45	0-5	10-15	45-50	45-50	0-5	10-15	30-35	10-15	40-45
Volatile Organic Compounds (mg/kg)															
Acetone	3.59 U	3.36 U	0.0306	0.0347	3.74 U	3.48 U	0.0279 U	0.0319 U	0.0321 U	0.0318 U	0.0327 U	0.0301 U	0.0323 U	0.0283 U	0.0314 U
Benzene	0.0287 U	0.03 U	0.00245 U	0.00277 U	0.0299 U	0.279 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Bromobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Bromochloromethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Bromodichloromethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Bromoform	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Bromomethane	0.718 U	0.67 U	0.0123 U	0.0139 U	0.748 U	0.697 U	0.0122 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.012 U	0.0129 U	0.0113 U	0.0126 U
2-Butanone (MEK)	1.44 U	1.34 U	0.0245 U	0.0277 U	1.5 U	1.39 U	0.0223 U	0.0256 U	0.0257 U	0.0254 U	0.0261 U	0.0241 U	0.02548 U	0.0226 U	0.0251 U
n-Butylbenzene	0.718 U	0.67 U	0.00613 U	0.00693 U	0.748 U	0.697 U	0.00558 U	0.00639 U	0.00643 U	0.00635 U	0.00654 U	0.00602 U	0.00646 U	0.00565 U	0.00628 U
sec-Butylbenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
tert-Butylbenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Carbon Disulfide	1.44 U	1.34 U	0.0245 U	0.0277 U	1.5 U	1.39 U	0.0223 U	0.0256 U	0.0257 U	0.0254 U	0.0261 U	0.0241 U	0.0258 U	0.0226 U	0.0251 U
Carbon Tetrachloride	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Chlorobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Chloroethane	0.144 U	0.13 U	0.0123 U	0.0139 U	0.15 U	0.139 U	0.0112 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.012 U	0.0129 U	0.0113 U	0.0126 U
Chloroform	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Chloromethane	0.718 U	0.67 U	0.0123 U	0.0139 U	0.15 U	0.697 U	0.0112 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.012 U	0.0129 U	0.0113 U	0.0126 U
2-Chlorotoluene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
4-Chlorotoluene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2-Dibromo-3-chloropropane (DBCP)	0.718 U	0.67 U	0.0123 U	0.0139 U	0.748 U	0.697 U	0.0112 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.0241 U	0.0129 U	0.0113 U	0.0126 U
Dibromochloromethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2-Dibromoethane (EDB)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Dibromomethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2-Dichlorobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,3-Dichlorobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,4-Dichlorobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Dichlorodifluoromethane (CFC 12)	0.718 U	0.67 U	0.00245 U	0.00277 U	0.748 U	0.697 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,1-Dichloroethane (1,1-DCA)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2-Dichloroethane (EDC)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,1-Dichloroethene (1,1-DCE)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
cis-1,2-Dichloroethene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.0418 J	0.00223 U	0.00148 J	0.000373 J	0.000216 J	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
trans-1,2-Dichloroethene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2-Dichloropropane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,3-Dichloropropane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
2,2-Dichloropropane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,1-Dichloropropene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
cis-1,3-Dichloropropene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
trans-1,3-Dichloropropene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Ethylbenzene	0.144 U	0.13 U	0.00613 U	0.00693 U	0.15 U	0.139 U	0.00558 U	0.00639 U	0.000167 J	0.00635 U	0.00654 U	0.00602 U	0.000155 J	0.00565 U	0.000101 J
Hexachlorobutadiene	0.575 U	0.54 U	0.00613 U	0.00693 U	0.598 U	0.557 U	0.00558 U	0.00639 U	0.00643 U	0.00635 U	0.00654 U	0.00602 U	0.00646 U	0.00565 U	0.00628 U
2-Hexanone	1.44 U	1.34 U	0.0123 U	0.0139 U	1.5 U	1.39 U	0.0112 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.012 U	0.0129 U	0.0113 U	0.0126 U
Isopropylbenzene	0.287 U	0.27 U	0.00245 U	0.00277 U	0.299 U	0.279 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
p-Isopropyltoluene	0.287 U	0.27 U	0.00245 U	0.00277 U	0.299 U	0.279 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
4-Methyl-2-pentanone (MIBK)	0.718 U	0.67 U	0.0123 U	0.0139 U	0.748 U	0.697 U	0.0112 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.012 U	0.0129 U	0.0113 U	0.0126 U
Methyl-t-butylether (MTBE)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00259	0.00304	0.00257 U	0.003	0.00311	0.00286 J	0.0032	0.00226 U	0.00338
Methylene Chloride (Dichloromethane)	0.718 U	0.67 U	0.0123 U	0.0139 U	0.748 U	0.697 U	0.0112 U	0.0128 U	0.0129 U	0.0127 U	0.0131 U	0.012 U	0.0129 U	0.0113 U	0.0126 U
Naphthalene	0.287 U	0.27 U	0.0049 U	0.00555 U	0.299 U	0.279 U	0.00446 U	0.00511 U	0.00514 U	0.00508 U	0.00523 U	0.00481 U	0.00517 U	0.00452 U	0.00503 U
n-Propylbenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Styrene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,1,1,2-Tetrachloroethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,1,2,2-Tetrachloroethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Tetrachloroethene (PCE)	0.264	0.13 U	0.0326	0.00934	1.4	1.19	0.0437	0.0847	0.0124	0.0115	0.00625	0.024	0.00921	0.00135 J	0.00188 J
Toluene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.000547 J	0.000192 J	0.000321 J	0.000254 J	0.000222 J	0.000181 J	0.000374 J	0.000181 J	0.000176 J
1,2,3-Trichlorobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2,4-Trichlorobenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,1,1-Trichloroethane (TCA)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00125 J	0.0016 J	0.00257 U	0.00254 U	0.00261 U	0.00126 J	0.00258 U	0.00226 U	0.00251 U
1,1,2-Trichloroethane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00118 J	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Trichloroethene (TCE)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.162	0.000446 J	0.00843	0.00257 U	0.00122 J	0.00261 U	0.00164 J	0.000762 J	0.00226 U	0.00251 U
Trichlorofluoromethane (CFC 11)	0.144 U	0.13 U	0.00245 U	0.00277 U	0.0703 J	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2,3-Trichloropropane	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
1,2,4-Trimethylbenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.0000963 J	0.00258 U	0.000136 J	0.000176 J
1,3,5-Trimethylbenzene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
Vinyl Chloride	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.00257 U	0.00254 U	0.00261 U	0.00241 U	0.00258 U	0.00226 U	0.00251 U
o-Xylene	0.144 U	0.13 U	0.00245 U	0.00277 U	0.15 U	0.139 U	0.00223 U	0.00256 U	0.000154 J	0.00254 U	0.00261 U	0.00241 U	0.000142 J	0.00226 U	0.00251 U
m,p-Xylene	0.287 U	0.27 U	0.0049 U	0.00555 U	0.299 U	0.279 U	0.000268 J	0.000204 J	0.000591 J	0.000191 J	0.000157 J	0.000168 J	0.000478 J	0.000215 J	0.000201 J
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	S-1-3	S-1-7	D-5d	D-5d	S-3-2	D-1d	D-1d	S-2-4	S-2-2	S-2-8	D-2d	D-2d	D-2d	D-6d	D-6d	S-3-6	S-4-6	D-3d	D-3d
Lab ID:	PSI0898-01	PSI0898-02	PSJ0033-01	PSJ0033-02	PSJ0033-03	PSI1036-01	PSI1036-02	PSI1036-03	PSI1036-04	PSI1036-05	PSI1036-06	PSJ0134-01	PSJ0134-02	PSJ0134-03	PSJ0134-07	PSJ0134-04	PSJ0134-05	PSJ0134-06	PSJ0134-08
Date Sampled:	09/23/2009	09/23/2009	09/30/2009	09/30/2009	09/30/2009	09/25/2009	09/25/2009	09/26/2009	09/26/2009	09/27/2009	09/27/2009	09/28/2009	09/28/2009	10/01/2009	10/02/2009	10/02/2009	10/02/2009	10/02/2009	10/02/2009
Depth (feet):	10	10	24.5	42.5	10	24.5	42.5	4.5	10	10.3	1.0	24.5	42.5	24	42.5	10	10	24	42.5
Volatile Organic Compounds (mg/kg)																			
Acetone	0.083	0.055 U	3.240 U	4.200 U	3.610 U	3.700 U	3.140 U	3.810 U	4.070 U	4.170 U	3.220 U	4.400 U	3.020 U	4.080 U	3.210 U	4.250 U	4.040 U	5.910 U	6.140 U
Benzene	0.003 U	0.004 U	0.026 U	0.034 U	0.029 U	0.030 U	0.025 U	0.031 U	0.033 U	0.033 U	0.026 U	0.035 U	0.024 U	0.033 U	0.026 U	0.034 U	0.032 U	0.047 U	0.049 U
Bromobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Bromochloromethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Bromodichloromethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Bromoform	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Bromomethane	0.016 U	0.022 U	0.649 U	0.839 U	0.722 U	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
2-Butanone (MEK)	0.032 B	0.044 B	1.300 U	1.680 U	1.440 U	1.480 U	1.260 U	1.530 U	1.630 U	1.670 U	1.290 U	1.760 U	1.210 U	1.630 U	1.290 U	1.700 U	1.620 U	2.360 U	2.450 U
n-Butylbenzene	0.008 U	0.011 U	0.649 U	0.839 U	0.722 U	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
sec-Butylbenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
tert-Butylbenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Carbon Disulfide	0.032 U	0.044 U	1.300 U	1.680 U	1.440 U	1.480 U	1.260 U	1.530 U	1.630 U	1.670 U	1.290 U	1.760 U	1.210 U	1.630 U	1.290 U	1.700 U	1.620 U	2.360 U	2.450 U
Carbon Tetrachloride	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Chlorobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Chloroethane	0.016 U	0.022 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Chloroform	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Chloromethane	0.016 U	0.022 U	0.649 U	0.839 U	0.722 U	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
2-Chlorotoluene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
4-Chlorotoluene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2-Dibromo-3-chloropropane (DBCP)	0.016 U	0.022 U	0.649 U	0.839 U	0.722 U	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
Dibromochloromethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2-Dibromoethane (EDB)	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Dibromomethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2-Dichlorobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,3-Dichlorobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,4-Dichlorobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Dichlorodifluoromethane (CFC 12)	0.003 U	0.004 U	0.649 C	0.839 C	0.722 C	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
1,1-Dichloroethane (1,1-DCA)	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2-Dichloroethane (EDC)	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,1-Dichloroethene (1,1-DCE)	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
cis-1,2-Dichloroethene	0.003 U	0.005	0.130 U	0.168 U	0.144 U	0.148 U	0.175	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.334	0.170 U	0.162 U	0.236 U	0.245 U
trans-1,2-Dichloroethene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2-Dichloropropane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,3-Dichloropropane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
2,2-Dichloropropane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,1-Dichloropropene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
cis-1,3-Dichloropropene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
trans-1,3-Dichloropropene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Ethylbenzene	0.008 U	0.011 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Hexachlorobutadiene	0.008 U	0.011 U	0.519 U	0.671 U	0.577 U	0.592 U	0.503 U	0.610 U	0.652 U	0.668 U	0.514 U	0.704 U	0.483 U	0.652 U	0.514 U	0.679 U	0.646 U	0.945 U	0.982 U
2-Hexanone	0.016 U	0.022 U	1.300 U	1.680 U	1.440 U	1.480 U	1.260 U	1.530 U	1.630 U	1.670 U	1.290 U	1.760 U	1.210 U	1.630 U	1.290 U	1.700 U	1.620 U	2.360 U	2.450 U
Isopropylbenzene	0.003 U	0.004 U	0.259 U	0.336 U	0.289 U	0.296 U	0.251 U	0.305 U	0.326 U	0.334 U	0.257 U	0.352 U	0.242 U	0.326 U	0.257 U	0.340 U	0.323 U	0.473 U	0.491 U
p-Isopropyltoluene	0.003 U	0.004 U	0.259 U	0.336 U	0.289 U	0.296 U	0.251 U	0.305 U	0.326 U	0.334 U	0.257 U	0.352 U	0.242 U	0.326 U	0.257 U	0.340 U	0.323 U	0.473 U	0.491 U
4-Methyl-2-pentanone (MIBK)	0.016 U	0.022 U	0.649 U	0.839 U	0.722 U	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
Methyl-t-butylether (MTBE)	0.016 U	0.022 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Methylene Chloride (Dichloromethane)	0.003 U	0.004 U	0.649 U	0.839 U	0.722 U	0.740 U	0.629 U	0.763 U	0.815 U	0.835 U	0.643 U	0.880 U	0.604 U	0.815 U	0.643 U	0.849 U	0.808 U	1.180 U	1.230 U
Naphthalene	0.006 U	0.009 U	0.259 U	0.336 U	0.289 U	0.296 U	0.251 U	0.305 U	0.326 U	0.334 U	0.257 U	0.352 U	0.242 U	0.326 U	0.257 U	0.340 U	0.323 U	0.473 U	0.491 U
n-Propylbenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Styrene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,1,1,2-Tetrachloroethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,1,2,2-Tetrachloroethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Tetrachloroethene (PCE)	0.043	0.065	0.519	1.010	0.885	0.387	2.240	77.700 RL7	1.830	0.980	5.490	1.100	0.429	0.680	4.080	0.893	2.350	0.380	0.704
Toluene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2,3-Trichlorobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2,4-Trichlorobenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.252	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,1,1-Trichloroethane (TCA)	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,1,2-Trichloroethane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Trichloroethene (TCE)	0.004	0.006	0.130 U	0.168 U	0.144 U	0.148 U	0.331	1.000	0.267	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.618	0.170 U	0.267	0.236 U	0.245 U
Trichlorofluoromethane (CFC 11)	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2,3-Trichloropropane	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,2,4-Trimethylbenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
1,3,5-Trimethylbenzene	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
Vinyl Chloride	0.003 U	0.004 U	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
o-Xylene	0.003 U	0.007	0.130 U	0.168 U	0.144 U	0.148 U	0.126 U	0.153 U	0.163 U	0.167 U	0.129 U	0.176 U	0.121 U	0.163 U	0.129 U	0.170 U	0.162 U	0.236 U	0.245 U
m,p-Xylene	0.006 U	0.023	0.259 U	0.336 U	0.289 U	0.296 U	0.251 U	0.305 U	0.326 U	0.334 U	0.257 U	0.352 U	0.242 U	0.326 U	0.257 U	0.340 U	0.323 U	0.473 U	0.491 U
Total Xylenes	0.009 U	0.030	0.389 U	0.504 U	0.433 U	0.444 U	0.377 U	0.458 U	0.489 U	0.501 U	0.386 U	0.528 U	0.363 U	0.489 U	0.386 U	0.510 U	0.485 U	0.709 U	0.736 U

Notes:
1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 3
Soil Data: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	Warehouse #2		Warehouse #3a		S-4-4		Warehouse #1		D-7d		D-7d		D-10d		D-10d		D-10d		D-11d		D-11d	
Lab ID:	PSJ0134-09		PSJ0134-10		PSJ0117-01RE1		PSJ0117-02		PSJ0117-03		PSJ0117-04		PSJ0117-05		PSJ0117-06RE1		PSJ0117-07		PSJ0117-08		PSJ0117-09	
Date Sampled:	10/02/2009		10/02/2009		10/04/2009		10/03/2009		10/03/2009		10/03/2009		10/04/2009		10/04/2009		10/04/2009		10/04/2009		10/04/2009	
Depth (feet):	1		1		10		1		24.5		42.5		18.5		24.5		42.5		24.5		42.5	
Volatile Organic Compounds (mg/kg)																						
Acetone	3.180	U	0.069	U	5.050	U	4.820	U	9.910	U	3.880	U	82.90	U	4.380	U	3.950	U	4.530	U	4.590	U
Benzene	0.026	U	0.001	U	0.040	U	0.039	U	0.079	U	0.031	U	0.66	U	0.035	U	0.032	U	0.036	U	0.037	U
Bromobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Bromochloromethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Bromodichloromethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Bromoform	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Bromomethane	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
2-Butanone (MEK)	1.270	U	0.027	U	2.020	U	1.930	U	3.960	U	1.550	U	33.20	U	1.750	U	1.580	U	1.810	U	1.840	U
n-Butylbenzene	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
sec-Butylbenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
tert-Butylbenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Carbon Disulfide	1.270	U	0.027	U	2.020	U	1.930	U	3.960	U	1.550	U	33.20	U	1.750	U	1.580	U	1.810	U	1.840	U
Carbon Tetrachloride	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Chlorobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Chloroethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Chloroform	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Chloromethane	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
2-Chlorotoluene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
4-Chlorotoluene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2-Dibromo-3-chloropropane (DBCP)	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
Dibromochloromethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2-Dibromoethane (EDB)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Dibromomethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2-Dichlorobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,3-Dichlorobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,4-Dichlorobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Dichlorodifluoromethane (CFC 12)	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
1,1-Dichloroethane (1,1-DCA)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2-Dichloroethane (EDC)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,1-Dichloroethene (1,1-DCE)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
cis-1,2-Dichloroethene	0.127	U	0.003	U	0.202	U	0.193	U	1.090		0.155	U	3.48		0.760		0.895		0.453		0.330	
trans-1,2-Dichloroethene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2-Dichloropropane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,3-Dichloropropane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
2,2-Dichloropropane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,1-Dichloropropene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
cis-1,3-Dichloropropene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
trans-1,3-Dichloropropene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Ethylbenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	11.90		0.175	U	0.158	U	0.181	U	0.184	U
Hexachlorobutadiene	0.510	U	0.011	U	0.808	U	0.771	U	1.590	U	0.621	U	13.30	U	0.701	U	0.632	U	0.724	U	0.734	U
2-Hexanone	1.270	U	0.027	U	2.020	U	1.930	U	3.960	U	1.550	U	33.20	U	1.750	U	1.580	U	1.810	U	1.840	U
Isopropylbenzene	0.255	U	0.005	U	0.404	U	0.386	U	0.793	U	0.311	U	6.63	U	0.350	U	0.316	U	0.362	U	0.367	U
p-Isopropyltoluene	0.255	U	0.005	U	0.404	U	0.386	U	0.793	U	0.311	U	6.63	U	0.350	U	0.316	U	0.362	U	0.367	U
4-Methyl-2-pentanone (MIBK)	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
Methyl-t-butylether (MTBE)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Methylene Chloride (Dichloromethane)	0.637	U	0.014	U	1.010	U	0.964	U	1.980	U	0.776	U	16.60	U	0.876	U	0.790	U	0.905	U	0.918	U
Naphthalene	0.255	U	0.005	U	0.404	U	0.386	U	0.793	U	0.311	U	6.63	U	0.350	U	0.316	U	0.362	U	0.367	U
n-Propylbenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Styrene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,1,1,2-Tetrachloroethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,1,2,2-Tetrachloroethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Tetrachloroethene (PCE)	0.569		0.005		0.204		3.250		21.300		0.627		3.32	U	1.170		1.250		8.230		6.130	
Toluene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	48.20		0.175	U	0.158	U	0.181	U	0.184	U
1,2,3-Trichlorobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2,4-Trichlorobenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,1,1-Trichloroethane (TCA)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,1,2-Trichloroethane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
Trichloroethene (TCE)	0.127	U	0.003	U	0.202	U	0.193	U	2.800		0.155	U	3.32	U	0.215		0.307		1.020		0.830	
Trichlorofluoromethane (CFC 11)	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2,3-Trichloropropane	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
1,2,4-Trimethylbenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	13.20		0.175	U	0.158	U	0.181	U	0.184	U
1,3,5-Trimethylbenzene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	5.27		0.175	U	0.158	U	0.181	U	0.184	U
Vinyl Chloride	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	3.32	U	0.175	U	0.158	U	0.181	U	0.184	U
o-Xylene	0.127	U	0.003	U	0.202	U	0.193	U	0.396	U	0.155	U	16.30		0.175	U	0.158	U	0.181	U	0.184	U
m,p-Xylene	0.255	U	0.005	U	0.404	U	0.386	U	0.793	U	0.311	U	46.60		0.350	U	0.316	U	0.362	U	0.367	U
Total Xylenes	0.382	U	0.008	U	0.606	U	0.579	U	1.189	U	0.466	U	62.90		0.525	U	0.474	U	0.543	U	0.551	U

Notes:
1. mg/kg = Milligrams per kilogram.
2. U = The compound was analyzed for but was not detected at or above the detection limit presented.
3. J = The data is considered to be an estimated value based on the QA/QC review.
4. E = Concentrations are estimated, calibration range exceeded.
5. Q-41 = Tuning standard for this compound above limits.
6. A-01a = Analyte present above MDL, but below MRL.
7. B = Analyte detected in method blank.
8. C = Calibration verification recovery for dichlorofluoromethane above control limits.
9. ** = Methylene chloride probably due to laboratory cross-contamination.
10. RL7 = Sample required dilution due to high concentrations of target analyte.
11. C = Calibration verification recovery for dichlorofluoromethane above control limits.
12. Shaded cells highlight detected concentrations of listed analyte.

Table 4
Soil Data: TPH, Metals, PCBs, and PAHs
Tarr, Inc.
Portland, Oregon

Sample ID:	HA-N-1	Tarr-165	HA-11-4	HA-12-3	DP-1-45	DP-2-53	DP-2-58'	DP-5-72	DP-6-70	DP-7-45	DP-7-50	DP-8-35	DP-10-40	MW-3-60	MW-4-56	MW-5-1.5	MW-5-1.5-Dup	B-1-2	B-1-23	B-1-58.5	B-2-2	B-3-2	B-3-7.5	B-3-41	B-3-58	B-4-2	B-6-3	B-6-16.5	B-7-2	B-7-6
Lab ID:	J6330.D	J7624.D	J9592.D	J9571.D	J9567.D	J9587.D	J9588.D	J9569.D	J9576.D	J9598.D	J9599DUP.D	J9607.D	J9604DUP.D	K8006.D	K7938.D	PPE0991-01	PPE0991-12	PPE1080-14	PPE1080-15	PPE1080-16	PPE1080-17	PPE1080-01	PPE1080-02	PPE1080-03	PPE1080-04	PPE1080-18	PPE1080-05	PPE1080-06RE	PPE1080-07	PPE1080-08
Date Sampled:	10/03/2002	10/31/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	12/18/2002	07/17/2003	07/16/2003	5/18/2006	5/18/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/22/2006	5/23/2006	5/22/2006	5/23/2006	5/23/2006	5/23/2006	5/23/2006
Depth (feet):	6	14	4	3	45	53	58	72	70	45	50	35	40	60	56	1.5	1.5	2	23	58.5	2	2	7.5	41	58	2	3	16.5	2	6
Total Petroleum Hydrocarbons (mg/kg)																														
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	69	20 U	20 U	20 U	20 U	3,750	533	20 U	20 U	8,790	19,000	79	247	--	20 U	--	--	26.4	8.61	10.5	8.68 U	918	7.7 U	5.33	7.53	10.2	3.76 U	4.6 U	1,850	3.55 U
TPH - Diesel-Range Hydrocarbons	9,220	25 U	25 U	25 U	25 U	25 U	1,290	25 U	25 U	25 U	5,810	25 U	25 U	--	--	--	--	15.9 U	14.4 U	15.5 U	16.2 U	72	1.66 U	14.1 U	15.2 U	320 U	16.3 U	17.3 U	8,720	15.2 U
TPH - Heavy Oil-Range Hydrocarbons	16,300	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	--	--	--	--	136	28.7 U	31 U	32.4 U	31.8 U	33.3 U	28.2 U	30.3 U	4,730	32.6 U	34.5 U	7,410	30.5 U
Metals (mg/kg)																														
Silver	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Lead (EPA 3050/7420)	20	--	--	--	--	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TCLP Lead	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium (EPA 7740)	0.5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs (mg/kg) -EPA 8081B	0.05 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg)																														
Acenaphthene	--	--	--	--	--	--	0.07	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.431 U	--	--	0.321 U	--
Acenaphthylene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.431 U	--	--	0.321 U	--
Anthracene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.431 U	--	--	0.321 U	--
Benzo(a)anthracene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.166 U	0.165 U	--	--	--	--	--	--	--	--	0.545	--	--	0.321 U	--
Benzo(a)pyrene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.816	--	--	0.321 U	--
Benzo(b)fluoranthene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.726	--	--	0.321 U	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.766	--	--	0.321 U	--
Benzo(k)fluoranthene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.497	--	--	0.321 U	--
Chrysene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.166 U	0.165 U	--	--	--	--	--	--	--	--	0.791	--	--	0.321 U	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.431 U	--	--	0.321 U	--
Fluoranthene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.15	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	1.19	--	--	0.321 U	--
Fluorene	--	--	--	--	--	--	0.18	--	--	--	--	--	--	0.06 U	--	0.0497	0.0626	--	--	--	--	--	--	--	--	0.431 U	--	--	0.672	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.06 U	--	0.033 U	0.033 U	--	--	--	--	--	--	--	--	0.555	--	--	0.321 U	--
Naphthalene	--	--	--	--	--	--	1.51	--	--	--	--	--	--	0.06 U	--	0.186	0.269	--	--	--	--	--	--	--	--	0.431 U	--	--	2.35	--
Phenanthrene	--	--	--	--	--	--	0.31	--	--	--	--	--	--	0.14	--	0.112	0.152	--	--	--	--	--	--	--	--	0.576	--	--	1.05	--
Pyrene	--	--	--	--	--	--	0.05 U	--	--	--	--	--	--	0.16	--	0.166 U	0.165 U	--	--	--	--	--	--	--	--	1.18	--	--	0.321 U	--

Notes:
1. PAHs = Polycyclic Aromatic Hydrocarbons by EPA Method 8270M-SIM.
2. PCBs = Polychlorinated Biphenyls.
3. mg/kg = Milligrams per kilogram.
4. U = The compound was analyzed for but was not detected at or above the detection limit presented.
5. J = The data is considered to be an estimated value based on the QA/QC review.
6. -- = Not analyzed.

Table 4
Soil Data: TPH, Metals, PCBs, and PAHs
Tarr, Inc.
Portland, Oregon

Sample ID:	B-8-2	B-9-1.5	B-10-5	B-11-7.5	B-18-1.5	B-20-1.5	B-21-2	B-22-7	B-24-1	B-25-1.5	B-25-1.5-DUP	B-26-1.5	B-27-1.5	B-28-3	B-29-6	B-30-4	B-31-7
Lab ID:	PPG0503-08	PPG0503-05	PPG0503-01	PPE1080-10	PPG0494-13	PPF0557-06	PPG0494-15	PPG0503-02	PPG0494-03	PPG0494-04	PPG0494-16	PPG0494-06	PPG0494-07	PPG0503-06	PPG0503-07	PPE1080-19	PPE1080-20
Date Sampled:	07/13/2006	07/12/2006	07/12/2006	5/23/2006	07/10/2006	06/10/2006	07/10/2006	07/12/2006	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/10/2006	07/13/2006	07/13/2006	5/22/2006	5/22/2006
Depth (feet):	2	1.5	5	7.5	1.5	1.5	2	7	1	1.5	1.5	1.5	1.5	3	6	4	7
Total Petroleum Hydrocarbons (mg/kg)																	
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	4.18 U	4 U	8.97	--	--	3.79 U	--	4.44 U	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	15.5 U	15.7 U	15.9 U	17.4 U	15.6 U	15.6 U	15.3 U	16.4 U	150	292	237	15.7 U	15.8 U	15.9 U	15.8 U	17.0 U	17.2 U
TPH - Heavy Oil-Range Hydrocarbons	30.9 U	31.4 U	31.8 U	34.7 U	31.2 U	31.2 U	30.7 U	32.8 U	217	201	122	31.3 U	31.5 U	31.8 U	31.7 U	34.0 U	34.3 U
Metals (mg/kg)																	
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Lead (EPA 3050/7420)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TCLP Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium (EPA 7740)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs (mg/kg) -EPA 8081B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg)																	
Acenaphthene	--	0.0163 U	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Acenaphthylene	--	0.117	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Anthracene	--	0.0222	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Benzo(a)anthracene	--	0.154	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Benzo(a)pyrene	--	0.282	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Benzo(b)fluoranthene	--	0.205	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Benzo(g,h,i)perylene	--	0.337	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Benzo(k)fluoranthene	--	0.213	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Chrysene	--	0.305	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Dibenzo(a,h)anthracene	--	0.0415	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Fluoranthene	--	0.729	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Fluorene	--	0.0316	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Indeno(1,2,3-cd)pyrene	--	0.232	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Naphthalene	--	0.0489	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Phenanthrene	--	0.501	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--
Pyrene	--	0.627	--	--	0.0165 U	--	--	--	--	0.0176 U	--	--	0.0169 U	0.0171 U	--	--	--

Notes:
1. PAHs = Polycyclic Aromatic Hydrocarbons by EPA Method 8270M-SIM.
2. PCBs = Polychlorinated Biphenyls.
3. mg/kg = Milligrams per kilogram.
4. U = The compound was analyzed for but was not detected at or above the detection limit presented.
5. J = The data is considered to be an estimated value based on the QA/QC review.
6. -- = Not analyzed.

Table 5
Depth-Discrete Groundwater Analytical Results: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	DP-2-W*	DP-4-W*	DP-5-W*	DP-6-W	B-39-1	B-39-2	B-41-1	B-41-2	B-41-3	B-41-4	B-46-1	B-46-2	B-46-3	B-46-3 Dup	B-48-1	B-48-2	B-48-3	B-48-3 Dup	B-49-30	B-49-40	B-49-50	B-50-30	B-50-40	B-50-50	B-51-34	B-51-44	B-51-54	B-51-54 Dup	B-51-64
Lab ID:	J9593.D	J9595.D	J9570.D	J9596.D	PQE0724-01	PQE0724-02	PQE0724-03	PQE0724-04	PQE0724-05	PQE0724-06	PQE0748-01	PQE0748-02	PQE0748-03	PQE0748-04	PQE1119-8	PQE1119-9	PQE1119-10	PQE1119-11	0708044-03	0708044-04	0708044-05	0708044-02	0708044-01	0708046-01	0708058-2	0708058-1	0708058-3	0708058-4	0708058-5
Sample Interval (feet bgs)	NA	NA	NA	NA	51-55	66-70	48-52	57-61	66-70	81-85	43-47	56-60	71-75	71-75	36-40	51-55	66-70	66-70	26-30	36-40	44-48	26-30	36-40	46-50	30-34	40-44	50-54	50-54	60-64
Date Sampled:	12/18/2002	12/18/2002	12/18/2002	12/18/2002	05/16/2007	05/16/2007	05/17/2007	05/17/2007	05/17/2007	5/17/2007	5/18/2007	5/18/2007	5/18/2007	5/18/2007	5/21/2007	5/21/2007	5/21/2007	5/21/2007	8/8/2007	8/8/2007	8/8/2007	8/7/2007	8/7/2007	8/8/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007
Total Petroleum Hydrocarbons (µg/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	653	284	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	250 U	250 U	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	500 U	500 U	500 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																													
Acetone	20 U	20	20 U	20 U	25 U	50 U	25 U	250 U	500 U	50 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	--	--	--	--	--	--	--	--	--	--	--
Benzene	46	269	0.5 U	7	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromobenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromoform	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	3 U	3 U	3 U	3 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	20 U	10 U	100 U	200 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	2 U	2 U	2 U	2 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Carbon Disulfide	--	--	--	--	10 U	20 U	10 U	100 U	200 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--
Carbon Tetrachloride	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	6 U	6 U	6 U	6 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Chloroform	2 U	9	2 U	2 U	15	3.42	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	2 U	2 U	2 U	2 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	2 U	2 U	2 U	2 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Dibromomethane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC 12)	4 U	4 U	4 U	4 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane (1,1-DCA)	10	205	2 U	27	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane (EDC)	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene (1,1-DCE)	5 U	136	5 U	5 U	1 U	2 U	1 U	24.4	30.2	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.02	1.53	1 U	1 U	3.85	1 U	1 U	1.38	1.56	1 U
cis-1,2-Dichloroethene	218	12,700	3 U	409	1 U	14.9	1 U	168	303	30.4	1.13	15.9	15.6	15.4	1 U	8.25	9.76	8.94	2.3	18.7	17.6	1.94	20.5	35.1	1 U	1 U	2.31	2.33	1 U
trans-1,2-Dichloroethene	2 U	29	2 U	2	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2.16	1 U	1 U	2.67	2	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	2	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	17	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	2 U	2 U	2 U	2 U	4 U	8 U	4 U	40 U	80 U	8 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	10 U	10 U	10 U	10 U	10 U	20 U	10 U	100 U	200 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	4 U	2 U	20 U	40 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--
p-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	4 U	2 U	20 U	40 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride (Dichloromethane)	12 U	30	12 U	12 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
Methyl-t-butylether (MTBE)	2	12	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (MIBK)	10 U	10 U	10 U	10 U	5 U	10 U	5 U	50 U	100 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	2 U	2 U	2 U	4	2 U	4 U	2 U	20 U	40 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	3 U	3 U	3 U	3 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Styrene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	2 U	14	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene (PCE)	22	7,870	2 U	51	1.28	224	1.54	1,630	3,440	150	21.3	136	62.6	60	1 U	72.4	60.4	55.6	12	209	110	7.56	102	368	1 U	1 U	25.6	26.6	2.23
Toluene	521	2	2 U	50	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	3 U	3 U	3 U	3 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	3 U	3 U	3 U	3 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane (TCA)	2 U	388	2 U	2 U	1 U	3.72	1 U	26.4	34.4	2 U	1.26	1.93	1.32	1.28	1 U	1.13	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	2 U	32	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene (TCE)	18	8,070	1	44	1 U	63.2	5.34	749	1,270	94.4	13.4	35.5	26.4	26.1	1 U	18.2	20.6	18.9	5.6	104	77.2	6.38	113	216	1 U	1 U	34.6	36	7.48
Trichlorofluoromethane (CFC 11)	3 U	3 U	3 U	3 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	3 U	3 U	3 U	3 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	3	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	2 U	2 U	2 U	2 U	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	19	31	4 U	5	1 U	2 U	1 U	10 U	20 U	2 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	1 U	1 U	1 U	1 U
o-Xylene	--	--	--	--	1 U	2 U	1 U	10 U	20 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	2 U	4 U	2 U	20 U	40 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	64	13	14 U	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
1. VOCs = Volatile organic compounds by EPA Method 8260.
2. µg/L = Micrograms per liter.
3. U = The compound was analyzed for, but was not detected at or above the quantitation limit presented.
4. J = Estimated Concentration
5. -- = Not analyzed.
6. Shaded cells highlight detected concentrations of listed analyte.

Table 5
Depth-Discrete Groundwater Analytical Results: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	B-60 (61-65)	B-60 (71-75)	B-60 (81-85)	B-60 (91-95)	B-60 (101-105)	B-60 (106-110)	B-61 (61-65)	B-61 (71-75)	B-61 (81-85)	B-61 (91-95)	B-62 (31-35)	B-62 (41-45)	B-62 (51-55)	B-62 (58-62)	B-63 (31-35)	B-63 (41-45)	B-63 (51-55)	B-64 (26-30)	B-64 (36-40)	B-64 (46-50)	B-64 (51-55)	B-65 (31-35)	B-65 (41-45)	B-65 (44-48)	B-66 (31-35)	B-66 (41-45)	B-66 (48-52)
Lab ID:	PTH0761-03	PTH0761-02	PTH0761-01	PTH0873-08	PTH0873-06	PTH0873-09	PTH0873-02	PTH0873-10	PTH0873-07	PTH0873-05	PTH0873-01	PTH0873-03	PTH0873-04	PTH0936-06	PTH0936-04	PTH0936-07	PTH0936-03	PTH0936-14	PTH0936-15	PTH0936-16	PTH0936-17	PTH0936-09	PTH0936-08	PTH0936-05	PTH0936-11	PTH0936-12	PTH0936-13
Sample Interval (feet bgs)	61-65	71-75	81-85	91-95	101-105	106-110	61-65	71-75	81-85	91-95	31-35	41-45	51-55	58-62	31-35	41-45	51-55	26-30	36-40	46-50	51-55	31-35	41-45	44-48	31-35	41-45	48-52
Date Sampled:	8/23/2010	8/23/2010	8/23/2010	8/24/10	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/27/2010	8/27/2010	8/27/2010	8/27/2010	8/26/2010	8/26/2010	8/26/2010	8/27/2010	8/27/2010	8/27/2010
Total Petroleum Hydrocarbons (µg/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																											
Acetone	25 U	25 U	25 U	250 U	25 U	25 U	25 U	25 U	25 U	25 U	500 U	250 U	500 U	125 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	50 U	125 U
Benzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Bromobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Bromochloromethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Bromodichloromethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Bromoform	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Bromomethane	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
2-Butanone (MEK)	10 U	10 U	10 U	100 U	10 U	10 U	10 U	10 U	10 U	10 U	200 U	100 U	200 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	20 U	50 U
n-Butylbenzene	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
sec-Butylbenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
tert-Butylbenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Carbon Disulfide	10 U	10 U	10 U	100 U	10 U	10 U	10 U	10 U	10 U	10 U	200 U	100 U	200 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	20 U	50 U
Carbon Tetrachloride	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Chlorobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Chloroethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Chloroform	1 U	1 U	1 U	10 U	1 U	1 U	4.7	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Chloromethane	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
2-Chlorotoluene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
4-Chlorotoluene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Dibromochloromethane	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
1,2-Dibromo-3-chloropropane (DBCP)	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2-Dibromoethane (EDB)	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Dibromomethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2-Dichlorobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,3-Dichlorobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,4-Dichlorobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Dichlorodifluoromethane (CFC 12)	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
1,1-Dichloroethane (1,1-DCA)	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2-Dichloroethane (EDC)	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,1-Dichloroethene (1,1-DCE)	1 U	2.06	1.24	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
cis-1,2-Dichloroethene	1 U	1 U	2.27	10.8	1 U	1 U	1 U	1 U	1 U	1 U	20 U	21.4	20 U	8.9	1 U	1 U	2.13	1 U	3.48	1.5	3.04	1.35	3.51	4.56	1 U	7.88	12.2
trans-1,2-Dichloroethene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2-Dichloropropane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,3-Dichloropropane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
2,2-Dichloropropane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,1-Dichloropropene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Ethylbenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Hexachlorobutadiene	4 U	4 U	4 U	40 U	4 U	4 U	4 U	4 U	4 U	4 U	80 U	40 U	80 U	20 U	4 U	4 U	4 U	4 U	4 U	4 U	8 U	4 U	4 U	4 U	4 U	8 U	20 U
2-Hexanone	10 U	10 U	10 U	100 U	10 U	10 U	10 U	10 U	10 U	10 U	200 U	100 U	200 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	20 U	50 U
Isopropylbenzene	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	20 U	40 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	4 U	10 U
p-Isopropyltoluene	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	20 U	40 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	4 U	10 U
Methylene Chloride (Dichloromethane)	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
Methyl-t-butylether (MTBE)	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
4-Methyl-2-pentanone (MIBK)	5 U	5 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	50 U	100 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	10 U	25 U
Naphthalene	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	20 U	40 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	4 U	10 U
n-Propylbenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Styrene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,1,1,2-Tetrachloroethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Tetrachloroethene (PCE)	34.2	52.8	117	325	5.17	1 U	2.91	1.09	1 U	1 U	283	312	125	164	1 U	1.64	18.9	1 U	36.5	25.8	56.4	16.2	28.8	44.6	1 U	46.5	139
Toluene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,1,1-Trichloroethane (TCA)	1.36	3.49	3.62	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,1,2-Trichloroethane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Trichloroethene (TCE)	8.80	16.8	29.1	28.3	1.06	1 U	1.06	1 U	1 U	1 U	112	123	48	51	1 U	1 U	5.44	1 U	17.1	12.2	22.5	4.66	10.1	12.5	1 U	26.4	50.4
Trichlorofluoromethane (CFC 11)	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2,3-Trichloropropane	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,2,4-Trimethylbenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
1,3,5-Trimethylbenzene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
Vinyl Chloride	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U, J	1 U, J	1 U, J	1 U, J	1 U, J	1 U, J	1 U, J	2 U	1 U, J	1 U, J	1 U, J	1 U	2 U	5 U
o-Xylene	1 U	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	20 U	10 U	20 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	2 U	5 U
m,p-Xylene	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U	40 U	20 U	40 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	4 U	10 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. VOCs = Volatile organic compounds by EPA Method 8260.
2. µg/L = Micrograms per liter.
3. U = The compound was analyzed for, but was not detected at or above the quantitation limit presented.
4. J = Estimated Concentration
5. -- = Not analyzed.
6. Shaded cells highlight detected concentrations of listed analyte.

Table 5
Depth-Discrete Groundwater Analytical Results: VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	B-67 (25-27)	B-67 (35-37)	B-67 (45-47)	B-67 (55-57)	B-67 (65-67)	B-67 (95-97)	B-68 (25-27)	B-68 (35-37)	B-68 (45-47)	B-68 (55-57)	B-68 (63-67)	B-68 (95-97)	MW-14 (50-52)	MW-14 (59-61)	MW-14 (68-70)	MW-14 (81-83)	MW-15 (38)	MW-15 (48)	MW-15 (58)	MW-15 (88))
Lab ID:	PTJ0744-01	PTJ0744-02	PTJ0744-03	PTJ0744-04	PTJ0744-05	PTJ0944-01	PTJ0676-01	PTJ0676-02	PTJ0676-03	PTJ0676-04	PTJ0676-05	PTJ0676-06	PTJ10684-01	PTJ10684-02	PTK0069-01	PTK0069-02	PT0791-01	PT0791-02	PT0791-03	PT0791-04
Sample Interval (feet bgs)	25-27	35-37	45-47	55-57	65-67	95-97	25-27	35-37	45-47	55-57	65-67	95-97	50-52	59-61	68-70	81-83	37-39	47-49	57-59	86.5-88.5
Date Sampled:	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/21/2010	10/22/2010	10/20/2010	10/20/2010	10/20/2010	10/20/2010	10/20/2010	10/20/2010	10/29/2010	10/29/2010	10/29/2010	10/29/2010	10/25/2010	10/25/2010	10/25/2010	10/25/2010
Total Petroleum Hydrocarbons (µg/L)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																				
Acetone	25 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	25 U	25 U
Benzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1.87	1 U	1 U	1 U	1 U	1 U
Bromobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Butylbenzene	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	1.23	1 U	1 U	1 U	1 U	2 U	9.01	1.67	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Chlorotoluene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane (DBCP)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane (EDB)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (CFC 12)	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane (1,1-DCA)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane (EDC)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene (1,1-DCE)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1.64	7.80	5.18	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	10.2	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	4 U	4 U	4 U	4 U	4 U	8 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	8 U	4 U	4 U	4 U	4 U	4 U	4 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U
p-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride (Dichloromethane)	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-t-butylether (MTBE)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Propylbenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	1 U	1.28	1.65	8.16	1.34	2 U	1 U	1 U	1.80	1.51	1.07	1 U	155	17.1	27.7	1 U	6.66	3.18	10.1	8.47
Toluene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1.71	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane (TCA)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1.31	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	1 U	1 U	1.23	5.8	3.12	2 U	1 U	1 U	1.02	1 U	1 U	1 U	46.8	15.3	15.8	1 U	1.13	1.16	2.62	3.38
Trichlorofluoromethane (CFC 11)	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
1. VOCs = Volatile organic compounds by EPA Method 8260.
2. µg/L = Micrograms per liter.
3. U = The compound was analyzed for, but was not detected at or above the quantitation limit presented.
4. J = Estimated Concentration
5. -- = Not analyzed.
6. Shaded cells highlight detected concentrations of listed analyte.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-1																								
Lab ID:	K8156.D	P5C0088-01	P5F0395-01	P5L045-01	PPG0293-01	PPJ0466-06	PQA0597-01	E1111-01	PQI0146-02	PQK0146-01	PRC0443-01	PRE0963-01	PRH0933-01	PSC0419-07	PSF0367-11	PSI0446-03	PSL0348-09[RL7]	PTC0818-09	PTF0790-10RE1[R1]	PTL0402-12	PUC0864-01	PUF0596-01	PUI0833-01	PUL0745-01
Date Sampled:	07/22/2003	03/02/2005	06/09/2005	12/12/2005	07/10/2006	10/09/2006	01/18/2007	05/29/2007	9/5/2007	11/6/2007	3/13/2008	5/27/2008	8/27/2008	3/12/2009	6/9/2009	9/10/2009	12/9/2009	03/24/2010	06/23/2010	12/8/2010	03/24/2011	06/14/2011	09/23/2011	12/22/2011
Total Petroleum Hydrocarbons (µg/L)																								
HCID - Gasoline-Range Hydrocarbons	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																								
Acetone	20 U	50 U	50 U	25 U	50 U	50 U	25 U	50 U	50 U	125 U	125 U	125 U	50 U	125 U	25 U	25 U	50 U	125 U	50 U	25 U	50 U	25 U	25 U	25 U
Benzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	0.180 J	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Bromobenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Bromochloromethane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Bromodichloromethane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Bromoform	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Bromomethane	3 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	25 U	25 U	25 U	10 U	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
2-Butanone (MEK)	10 U	20 U	20 U	10 U	20 U	20 U	10 U	20 U	20 U	50 U	50 U	50 U	20 U	50 U	10 U	10 U	20 U	50 U	20 U	10 U	20 U	10 U	10 U	10 U
n-Butylbenzene	2 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	25 U	25 U	25 U	10 U	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
sec-Butylbenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
tert-Butylbenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Carbon Disulfide	--	20 U	20 U	10 U	20 U	20 U	10 U	20 U	20 U	50 U	50 U	50 U	20 U	50 U	10 U	10 U	20 U	50	20 U	10 U	20 U	10 U	10 U	10 U
Carbon Tetrachloride	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Chlorobenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Chloroethane	6 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Chloroform	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	0.60 J	0.50 J	0.480 J	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Chloromethane	2 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	25 U	25 U	25 U	10 U	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
2-Chlorotoluene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
4-Chlorotoluene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane (DBCP)	2 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	25 U	5 U	25 U	10 U	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
Dibromochloromethane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	25 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2-Dibromoethane (EDB)	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Dibromomethane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2-Dichlorobenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,3-Dichlorobenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,4-Dichlorobenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Dichlorodifluoromethane (CFC 12)	4 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	25 U	25 U	25 U	10 U	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
1,1-Dichloroethane (1,1-DCA)	37	29.2	17.8	10.0	28.6	26.5	17.7	34.4	23.6	16.2	24.4	5.2	21.8	16.1	3.04	12.5	10.1	14.0	3.80	3.30	3.44	1.36	2.56	2.31
1,2-Dichloroethane (EDC)	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	20 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,1-Dichloroethene (1,1-DCE)	5 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	0.75 J	0.300 J	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	457	314	201	108	268	212	166	288	231	141	207	50.8	169	132	35	108	99.0	110	40.7	33.0	33.5	15.7	25.7	22.0
trans-1,2-Dichloroethene	2 U	5.92	8.18	5.29	10.1	21.3	4.99	2.54	3.34	18.3	2.75 J	0.65 J	1.50 J	5 U	3.87	1.00	2	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2-Dichloropropane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,3-Dichloropropane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
2,2-Dichloropropane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,1-Dichloropropene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Ethylbenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Hexachlorobutadiene	2 U	8 U	8 U	4 U	8 U	8 U	4 U	8 U	8 U	20 U	20 U	20 U	8 U	20 U	4 U	4 U	8 U	20 U	8 U	4 U	8 U	4 U	4 U	4 U
2-Hexanone	10 U	20 U	20 U	10 U	20 U	20 U	10 U	20 U	20 U	50 U	50 U	50 U	20 U	50 U	10 U	10 U	20 U	50 U	20 U	10 U	20 U	10 U	10 U	10 U
Isopropylbenzene	2 U	4 U	4 U	2 U	4 U	4 U	2 U	4 U	4 U	10 U	10 U	10 U	4 U	10 U	2 U	2 U	4 U	10 U	4 U	2 U	4 U	2 U	2 U	2 U
p-Isopropyltoluene	2 U	4 U	4 U	2 U	4 U	4 U	2 U	4 U	4 U	10 U	10 U	10 U	4 U	10 U	2 U	2 U	4 U	10 U	4 U	2 U	4 U	2 U	2 U	2 U
4-Methyl-2-pentanone (MIBK)	10 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	25 U	25 U	25 U	10 U	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
Methyl-t-butylether (MTBE)	4 U	2 U	2 U	1 U	2 U	2 U	1.04	3.30	2 U	1.2 J	2.05 J	5 U	1.60 J	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Methylene Chloride (Dichloromethane)	50	10 U	10 U	5 U	10 U	10 U	5 U	10 U	10 U	7.25 J	25 U	25 U	1.04 J	25 U	5 U	5 U	10 U	25 U	10 U	5 U	10 U	5 U	5 U	5 U
Naphthalene	2 U	4 U	4 U	2 U	4 U	4 U	2 U	4 U	4 U	10 U	10 U	10 U	4 U	10 U	2 U	2 U	4 U	10 U	4 U	2 U	4 U	2 U	2 U	2 U
n-Propylbenzene	3 U	2 U	2 U	1 U	2 U	4 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Styrene	2 U	2 U	2 U	1 U	2 U	4 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,1,1,2-Tetrachloroethane	2 U	2 U	2 U	1 U	2 U	4 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	1 U	2 U	4 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	2 U	52.5	85.5	38.6	53.1	34.6	137	249	185	179	241	132	245	35.6	44.6	79	94.6	146	97.6	29.2	90.8	21.8	13.3	26.1
Toluene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	3 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	3 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,1,1-Trichloroethane (TCA)	4	7.08	5.20	5.30	4.36	3.44	4.42	4.00	3.8	3.15 J	4.2 J	4.5 J	3.62	5 U	1.21	1.82	2 U	5 U	2.88	1 U	2 U	1 U	1 U	1 U
1,1,2-Trichloroethane	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Trichloroethene (TCE)	35	52.6	48.3	36.6	42.0	32.2	48.5	70.5	57.7	48	62.6	45.3	57.4	24.8	18	31	34.0	43.4	32.0	9.98	24.9	9.5	8.19	10.6
Trichlorofluoromethane (CFC 11)	3 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2,3-Trichloropropane	3 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	2 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
Vinyl Chloride	4 U	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	1.15 J	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
o-Xylene	--	2 U	2 U	1 U	2 U	2 U	1 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	1 U	1 U	2 U	5 U	2 U	1 U	2 U	1 U	1 U	1 U
m,p-Xylene	--	4 U	4 U	2 U	4 U	4 U	2 U	4 U	4 U	10 U	10 U	10 U	4 U	10 U	2 U	2 U	4 U	10 U	4 U	2 U	4 U	2 U	2 U	2 U
Total Xylenes	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	4.98	4.02	3.04	1.68	3.51	2.86	2.96	5.04	3.97	3.09	4.11	1.68	3.68	1.77	0.81	1.84	1.87	2.35	1.25	0.59	1.08	0.37	0.41	0.46

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-1 cont.			MW-2																					
Lab ID:	250-4237-1	250-8975-1	250-12687-1	K8157.D	P5C0088-02	P5F0395-02	P5L0465-02	PPG0293-02	PPJ0466-05	PQA0597-02	PQE1111-02	PQI0146-01	PQK0146-02	PRC0443-02	PRE0963-02	PPRH0933-02	PSC0419-12	PSF0367-12	PSI0446-13 RL7	PSL0348-01 RL7	PTC0818-08	PTF0790-06 RL7	PTL0402-10	PUC0864-02
Date Sampled:	06/26/2012	12/18/2012	06/25/2013	07/22/2003	03/02/2005	06/09/2005	12/12/2005	07/10/2006	10/09/2006	01/18/2007	05/29/2007	09/05/2007	11/06/2007	3/13/2008	5/28/2008	8/27/2008	3/13/2009	6/9/2009	9/11/2009	12/8/2009	03/24/2010	06/23/2010	12/08/2010	03/23/2011
Total Petroleum Hydrocarbons (µg/L)																									
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	Detected	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	250 U	--	1,340	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																									
Acetone	25 U	25 U	25 U	750 U	500 U	1250 U	500 U	500 U	500 U	1,250 U	500 U	500 U	2,500 U	2,500 U	1,250 U	2,500 U	1,250 U	5,000 U	5,000 U	1,250 U	1,250 U	1,250 U	1,250 U	1,250 U
Benzene	1.0 U	1.0 U	0.20 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	21 J	18 J	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Bromobenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Bromochloromethane	5.0 U	5.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Bromodichloromethane	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Bromoform	5.0 U	5.0 U	1.0 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Bromomethane	5.0 U	5.0 U	5.0 U	150 U	100 U	250 U	100 U	100 U	100 U	250 U	100 U	100 U	500 U	500 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
2-Butanone (MEK)	10 U	10 U	10 U	400 U	200 U	500 U	200 U	200 U	200 U	500 U	200 U	200 U	1,000 U	1,000 U	500 U	1,000 U	500 U	2,000 U	2,000 U	500 U	500 U	500 U	500 U	500 U
n-Butylbenzene	5.0 U	5.0 U	5.0 U	100 U	100 U	250 U	100 U	100 U	100 U	250 U	100 U	100 U	500 U	500 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
sec-Butylbenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
tert-Butylbenzene	1.0 U	1.0 U	1.0 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Carbon Disulfide	10 U	10 U	10 U	--	200 U	500 U	200 U	200 U	200 U	500 U	200 U	200 U	1,000 U	1,000 U	500 U	1,000 U	500 U	2,000 U	2,000 U	500 U	500	500 U	500 U	500 U
Carbon Tetrachloride	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Chlorobenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Chloroethane	1.0 U	1.0 U	0.5 U	300 U	20 U	59.5	20 U	32.4	20 U	85.0	20 U	20 U	100 U	100 U	80.5	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Chloroform	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	50 J	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	72.0	50 U
Chloromethane	5.0 U	5.0 U	5.0 U	100 U	100 U	250 U	100 U	100 U	100 U	250 U	100 U	100 U	500 U	500 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
2-Chlorotoluene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
4-Chlorotoluene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0 U	5.0 U	100 U	100 U	50 U	100 U	100 U	20 U	50 U	100 U	100 U	500 U	100 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	100 U	20 U	250 U	20 U	20 U	100 U	250 U	20 U	20 U	100 U	500 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2-Dibromoethane (EDB)	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Dibromomethane	5.0 U	5.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2-Dichlorobenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,3-Dichlorobenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,4-Dichlorobenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0 U	5.0 U	200 U	100 U	250 U	100 U	100 U	100 U	250 U	100 U	100 U	500 U	500 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
1,1-Dichloroethane (1,1-DCA)	1.0 U	2.5	0.5 U	100 U	74.8	138	68.8	87.4	69.6	186	34.0	62.6	12 J	185	248	55.0 J	63	238	200 U	78.0	50 U	218	56.5	223
1,2-Dichloroethane (EDC)	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	34 J	30 J	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0 U	0.5 U	250 U	57.4	50 U	37.0	20 U	20 U	50 U	20 U	24.6	100 U	124	21 J	30.0 J	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
cis-1,2-Dichloroethene	8.5	20	2.7	965	2,700	4,210	2,280	1,780	2,600	5,030	783	2,560	609	7,170	5,120	1,780	2,660	4,710	3,420	3,470	2,120	2,320	1,970	3,120
trans-1,2-Dichloroethene	1.0 U	1.0 U	0.5 U	100 U	42.2	50 U	47.0	34.2	166	50 U	22.4	57.8	21 J	94 J	50 U	16.0 J	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2-Dichloropropane	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,3-Dichloropropane	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
2,2-Dichloropropane	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,1-Dichloropropene	1.0 U	1.0 U	1.0 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Ethylbenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Hexachlorobutadiene	4.0 U	4.0 U	4.0 U	100 U	80 U	200 U	80 U	80 U	80 U	200 U	80 U	80 U	400 U	400 U	200 U	400 U	200 U	800 U	800 U	200 U	200 U	200 U	200 U	200 U
2-Hexanone	15 U	15 U	10 U	400 U	200 U	500 U	200 U	200 U	200 U	500 U	200 U	200 U	1000 U	100 U	500 U	1,000 U	500 U	2,000 U	2,000 U	500 U	500 U	500 U	500 U	500 U
Isopropylbenzene	2.0 U	2.0 U	2.0 U	100 U	40 U	100 U	40 U	40 U	40 U	100 U	40 U	40 U	200 U	200 U	9 J	200 U	100 U	400 U	400 U	100 U	100 U	100 U	100 U	100 U
p-Isopropyltoluene	2.0 U	2.0 U	2.0 U	100 U	40 U	100 U	40 U	40 U	40 U	100 U	40 U	40 U	200 U	200 U	100 U	200 U	100 U	400 U	400 U	100 U	100 U	100 U	100 U	100 U
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0 U	5.0 U	400 U	100 U	250 U	100 U	100 U	100 U	250 U	100 U	100 U	500 U	500 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
Methyl-t-butylether (MTBE)	1.0 U	1.0 U	1.0 U	200 U	20 U	50 U	20 U	30.6	20 U	77.0	20 U	20 U	10 J	39 J	206	17.0 J	50 U	248	200 U	50 U	50 U	282	92.0	355
Methylene Chloride (Dichloromethane)	5.0 U	5.0 U	5.0 U	600 U	100 U	250 U	100 U	100 U	100 U	250 U	100 U	100 U	55 J	500 U	250 U	500 U	250 U	1,000 U	1,000 U	250 U	250 U	250 U	250 U	250 U
Naphthalene	5.0 U	5.0 U	2.0 U	100 U	40 U	100 U	40 U	40 U	40 U	100 U	40 U	40 U	200 U	200 U	100 U	200 U	100 U	400 U	400 U	100 U	100 U	100 U	100 U	100 U
n-Propylbenzene	1.0 U	1.0 U	0.5 U	150 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Styrene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	0.5	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Tetrachloroethene (PCE)	5.9	30	6.8	2,084	3,340	2,540	1,080	206	2,540	412	2,820	3,470	1,470	13,700	1,970	4,740	3,870	1,370	6,560	5,710	1,540	502	1,360	1,320
Toluene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2,3-Trichlorobenzene	5.0 U	5.0 U	1.0 U	150 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	150 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,1,1-Trichloroethane (TCA)	1.0 U	1.2	0.5 U	100 U	203	76.5	141	53.4	136	50 U	81.4	101	15 J	471	32 J	94.0 J	88.5	200 U	200 U	92.5	50 U	50 U	50 U	50 U
1,1,2-Trichloroethane	5.0 U	5.0 U	0.5 U	100 U	20.2	50 U	20 U	20 U	20 U	50 U	23.8	20 U	100 U	120	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Trichloroethene (TCE)	4.1	12	2.0	899	2,480	1,360	1,640	445	1,950	640	1,110	1,480	515	6,680	850	1,650	1,560	608	2,240	2,280	1,050	336	686	570
Trichlorofluoromethane (CFC 11)	1.0 U	1.0 U	0.5 U	150 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2,3-Trichloropropane	5.0 U	5.0 U	0.5 U	150 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	1.0 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
1,3,5-Trimethylbenzene	1.0 U	1.0 U	0.5 U	100 U	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
Vinyl Chloride	1.0 U	1.0 U	0.5 U	200 U	20 U	260	20 U	26.0	20 U	448	20 U	20 U	100 U	30 J	555	100 U	50 U	336	200 U	50 U	50 U	102	50 U	50 U
o-Xylene	2.0 U	2.0 U	0.5 U	--	20 U	50 U	20 U	20 U	20 U	50 U	20 U	20 U	100 U	100 U	50 U	100 U	50 U	200 U	200 U	50 U	50 U	50 U	50 U	50 U
m,p-Xylene	1.0 U	1.0 U	1.0 U	--	40 U	100 U	40 U	40 U	40 U	100 U	40 U	40 U	200 U	200 U	100 U	200 U	100 U	400 U	400 U	100 U	100 U	100 U	100 U	100 U
Total Xylenes	-- U	-- U	-- U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	0.15	0.48	0.08	29.36	67.89	73.25	43.38	23.76	58.69	66.41	33.76	59.45	19.28	210.1	80.3	60.0	62.6	66.8	91.9	87.6	39.1	31.1	33.7	44.5

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-2 cont.						MW-3																		
Lab ID:	PUF0596-02	PUI0833-13	PUL0745-02	250-4237-2	250-8975-1	250-12687-2	K8158.D	P5C0088-03	P5F0395-03	P5L0465-03	PPG0293-03	PPJ0466-06	PQA0597-03	PQE1111-03	PQI0146-03	PQK0146-03 RL1	PRC0443-03	PRE0963-03	H0933-03	PSC0419-11	PSF0367-13	PSI0446-04 RL7	PSL0348-09 RL7	PTC0818-10	PTF0790-11
Date Sampled:	06/15/2011	09/21/2011	12/22/2011	06/26/2012	12/18/2012	06/25/2013	07/22/2003	03/02/2005	06/09/2005	12/12/2005	07/10/2006	10/09/2006	01/18/2007	05/29/2007	09/05/2007	11/06/2007	3/13/2008	5/27/2008	8/27/2008	3/13/2009	6/9/2009	9/10/2009	12/9/2009	03/24/2010	06/24/2010
Total Petroleum Hydrocarbons (µg/L)																									
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																									
Acetone	1,250 U	1,250 U	1,250 U	1,300 U	1,300 U	25 U	20 U	50 U	50 U	125 U	50 U	125 U	50 U	125 U	125 U	1,250 U	50 U	25 U	192	250 U	125 U	125 U	125 U	125 U	125 U
Benzene	50 U	50 U	50 U	50 U	50 U	0.20 U	2	6	7.66	5 U	2.32	2.32	4.56	5 U	5 U	50 U	1.74 J	7.02	0.660 J	10 U	5 U	5 U	5 U	5 U	5 U
Bromobenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	50 U	50 U	50 U	250 U	250 U	0.5 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Bromoform	50 U	50 U	50 U	250 U	250 U	1.0 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	250 U	250 U	250 U	250 U	250 U	5.0 U	3 U	10 U	10 U	25 U	10 U	10 U	10 U	25 U	25 U	250 U	2 U	5 U	10 U	50 U	25 U	25 U	25 U	25 U	25 U
2-Butanone (MEK)	500 U	500 U	500 U	500 U	500 U	10 U	10 U	20 U	20 U	50 U	20 U	20 U	20 U	50 U	50 U	500 U	20 U	10 U	24.5	100 U	50 U	50 U	50 U	50 U	50 U
n-Butylbenzene	250 U	250 U	250 U	250 U	250 U	5.0 U	2 U	10 U	10 U	25 U	10 U	10 U	10 U	25 U	25 U	250 U	10 U	5 U	10 U	50 U	25 U	25 U	25 U	25 U	25 U
sec-Butylbenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	0.78 J	0.76 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
tert-Butylbenzene	50 U	50 U	50 U	50 U	50 U	1.0 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	0.22 J	2.06	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	500 U	500 U	500 U	500 U	500 U	10 U	--	20 U	20 U	50 U	20 U	10 U	20 U	50 U	50 U	500 U	20 U	10 U	20 U	100 U	50 U	50 U	50 U	50 U	50 U
Carbon Tetrachloride	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	50 U	50 U	50 U	50 U	50 U	0.5 U	14	32.3	46.5	41.4	67.9	64.4	73.1	46.8	25.2	15.5 J	45.20	36.6	6.22	47.2	44.2	35.5	25.4	43.8	9.95
Chloroform	50 U	50 U	50 U	50 U	50 U	0.5 U	9	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	0.1 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	250 U	250 U	250 U	250 U	250 U	5.0 U	2 U	10 U	10 U	25 U	10 U	25 U	10 U	25 U	25 U	250 U	10 U	5 U	10 U	50 U	25 U	25 U	25 U	25 U	25 U
2-Chlorotoluene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane (DBCP)	250 U	250 U	250 U	250 U	250 U	5.0 U	2 U	10 U	10 U	50 U	10 U	5 U	10 U	25 U	25 U	250 U	2 U	5 U	10 U	50 U	25 U	25 U	25 U	25 U	25 U
Dibromochloromethane	50 U	50 U	50 U	50 U	50 U	1.0 U	2 U	2 U	2 U	5 U	2 U	25 U	2 U	5 U	5 U	50 U	10 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	50 U	50 U	50 U	250 U	250 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Dibromomethane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane (CFC 12)	250 U	250 U	250 U	250 U	250 U	5.0 U	4 U	10 U	10 U	25 U	10 U	25 U	10 U	25 U	25 U	250 U	10 U	5 U	10 U	50 U	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethane (1,1-DCA)	270	50 U	50 U	100	62	1.5	50	118	123	102	130	99.4	96.2	108	68.6	35.5 J	118	85.3	33.2	99.4	80.8	90.8	80.0	98.8	38.4
1,2-Dichloroethane (EDC)	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene (1,1-DCE)	50 U	50 U	50 U	50 U	50 U	0.5 U	5 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	0.90 J	0.46 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	1,890	530	1,530	2,100	2,500	44	74	321	255	451	317	504	349	422	451	268	334	70.5	132	276	88.2	153	379	214	31.1
trans-1,2-Dichloroethene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	3.14	5 U	2 U	5 U	5 U	50 U	1.64 J	0.56 J	0.340 J	10 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
2,2-Dichloropropane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	50 U	50 U	50 U	50 U	50 U	1.0 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	1 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	0.62 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobutadiene	200 U	200 U	200 U	200 U	200 U	4.0 U	2 U	8 U	8 U	20 U	8 U	20 U	8 U	20 U	20 U	200 U	8 U	4 U	8 U	40 U	20 U	20 U	20 U	20 U	20 U
2-Hexanone	500 U	500 U	500 U	750 U	750 U	10 U	10 U	20 U	20 U	50 U	20 U	50 U	20 U	50 U	50 U	500 U	20 U	10 U	20 U	100 U	50 U	50 U	50 U	50 U	50 U
Isopropylbenzene	100 U	100 U	100 U	100 U	100 U	2.0 U	2 U	4 U	4 U	10 U	4 U	10 U	4 U	10 U	10 U	100 U	0.16 J	0.57 J	4 U	20 U	10 U	10 U	10 U	10 U	10 U
p-Isopropyltoluene	100 U	100 U	100 U	100 U	100 U	2.0 U	2 U	4 U	4 U	10 U	4 U	10 U	4 U	10 U	10 U	100 U	4 U	2 U	4 U	20 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	250 U	250 U	250 U	250 U	250 U	5.0 U	10 U	10 U	10 U	25 U	10 U	25 U	10 U	25 U	25 U	250 U	10 U	5 U	10 U	50 U	25 U	25 U	25 U	25 U	25 U
Methyl-t-butylether (MTBE)	287	50 U	50 U	180	250	1.3	53	141	169	146	200	163	130	235	81.8	68.5	182	63.7	102	166	59	132	99.4	137	29.2
Methylene Chloride (Dichloromethane)	250 U	250 U	250 U	250 U	250 U	5.0 U	69	10 U	10 U	25 U	10 U	25 U	10 U	25 U	25 U	31 J	10 U	5 U	0.880 J	50 U	25 U	25 U	25 U	25 U	25 U
Naphthalene	100 U	100 U	100 U	250 U	250 U	2.0 U	2 U	4 U	4 U	10 U	4 U	10 U	4 U	10 U	10 U	100 U	4 U	2 U	4 U	20 U	10 U	10 U	10 U	10 U	10 U
n-Propylbenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	3 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	0.27 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Styrene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,1,1,2-Tetrachloroethane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene (PCE)	540	1,040	3,190	550	670	7.3	258	67.4	99.6	79.8	134	128	74.9	96.7	36	28.5 J	119	73.7	22.5	222	93.2	125	149	141	24.8
Toluene	50 U	50 U	50 U	50 U	50 U	0.5 U	1 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	0.26 J	0.52 J, B	30.3	10 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	50 U	50 U	50 U	250 U	250 U	1.0 U	3 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	50 U	50 U	50 U	50 U	50 U	1.0 U	3 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane (TCA)	50 U	50 U	50 U	50 U	50 U	0.51	2 U	9.08	2.28	8.45	4.76	6.15	5.92	5 U	5 U	50 U	1.68 J	0.48 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	50 U	50 U	50 U	250 U	250 U	1.4	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene (TCE)	282	454	1,100	320	360	5.4	60	64.7	34.5	86.4	59.3	73.6	63.0	56.0	31.4	12.5 J	34.30	16.3	6.86	50.1	20.4	34.7	52.4	37.6	7.10
Trichlorofluoromethane (CFC 11)	50 U	50 U	50 U	50 U	50 U	0.5 U	3 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	50 U	50 U	50 U	250 U	250 U	0.5 U	3 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1 U	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	50 U	50 U	50 U	50 U	50 U	1.0 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	1.65	2 U	10 U	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	50 U	50 U	50 U	50 U	50 U	0.5 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	2 U	0.45 J	2 U	10 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	164	50 U	50 U	50 U	50 U	0.5 U	13	41	72.2	113	159	193	124	79.3	137	65.5	82.30	36.2	6.00	66.3	40.8	55.5	95.0	62.0	5.55
o-Xylene	50 U	50 U	50 U	50 U	50 U	0.5 U	--	2 U	2 U	5 U	2 U	5 U	2 U	5 U	5 U	50 U	0.34 J	0.29 J	0.220 J, B	10 U	5 U	5 U	5 U	5	5
m,p-Xylene	100 U	100 U	100 U	100 U	100 U	1.0 U	--	4 U	4 U	10 U	4 U	10 U	4 U	10 U	10 U	100 U	2 U	2 U	4 U	20 U	10 U	10 U	10 U	10	10
Total Xylenes	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	27.5	15.2	43.4	27.4	32.6	0.54	3.0	4.9	4.6	7.6	7.1	9.6	6.5	6.6	7.3	4.1	5.8	1.9	1.6	5.6	2.3	3.5	6.7	4.34	0.61

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-3 cont.								MW-4																	
Lab ID:	PTL0402-19	PUC0864-03	PUF0596-03	PUI0833-03	PUL0745-03	250-4237-3	250-8975-3	250-12687-3	K8159.D	P5C0088-04	P5F0395-04	P5I0465-4	P5I0465-4	PPJ0466-03	PQA0597-04	PQE1111-04	PQI0146-04	PQK0146-04 [2]	PRC0443-04	PRE0963-04	PRH0933-04	PSC0419-08	PSF0367-10	PSI0446-08 [RL7]	PSL0348-07 [RL7]
Date Sampled:	12/9/2010	3/24/2011	6/16/2011	09/23/2011	12/22/2011	6/26/2012	12/18/2012	6/26/2013	07/22/2003	03/02/2005	06/09/2005	12/12/2005	07/11/2006	10/09/2006	01/18/2007	05/29/2007	9/6/2007	11/6/2007	3/13/2008	5/28/2008	8/27/2008	3/12/2009	6/9/2009	9/10/2009	12/9/2009
Total Petroleum Hydrocarbons (µg/L)																									
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	Detected	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	630 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	250 U	--	6,130	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																									
Acetone	25 U	25 U	25 U	25 U	125 U	25 U	50 U	25 U	750 U	5,000 U	2,500 U	2,500 U	1,250 U	1,250 U	1250 U	12,500 U	12,500 U	25,000 U	25,000 U	12,500 U	6,250 U	25,000 U	12,500 U	12,500 U	25,000 U
Benzene	1.51	2.08	1 U	1 U	5 U	1.0 U	3.2	0.21	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Bromobenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Bromochloromethane	1 U	1 U	1 U	1 U	5 U	5.0 U	10 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Bromodichloromethane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Bromoform	1 U	1 U	1 U	1 U	5 U	5.0 U	10 U	1.0 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Bromomethane	5 U	5 U	5 U	5 U	25 U	5.0 U	10 U	5.0 U	150 U	1,000 U	500 U	500 U	250 U	250 U	250 U	2,500 U	2,500 U	5,000 U	5,000 U	2,500 U	1,250 U	5,000 U	2,500 U	2,500 U	5,000 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	50 U	10 U	20 U	10 U	400 U	2,000 U	1,000 U	1,000 U	500 U	500 U	500 U	5,000 U	5,000 U	10,000 U	10,000 U	5,000 U	2,500 U	10,000 U	5,000 U	5,000 U	10,000 U
n-Butylbenzene	5 U	5 U	5 U	5 U	25 U	5.0 U	10 U	5.0 U	100 U	1,000 U	500 U	500 U	250 U	250 U	250 U	2,500 U	2,500 U	5,000 U	5,000 U	2,500 U	1,250 U	5,000 U	2,500 U	2,500 U	5,000 U
sec-Butylbenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
tert-Butylbenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	1.0 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Carbon Disulfide	10 U	10 U	10 U	10 U	50 U	10 U	20 U	10 U	--	2,000 U	1,000 U	1,000 U	500 U	500 U	500 U	5,000 U	5,000 U	10,000 U	10,000 U	5,000 U	2,500 U	10,000 U	5,000 U	5,000 U	10,000 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Chlorobenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Chloroethane	8.91	11.8	8.73	1 U	19.3	3.6	17	9.1	300 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Chloroform	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Chloromethane	5 U	5 U	5 U	5 U	25 U	5.0 U	10 U	5.0 U	100 U	1,000 U	500 U	500 U	250 U	250 U	250 U	2,500 U	2,500 U	5,000 U	5,000 U	2,500 U	1,250 U	5,000 U	2,500 U	2,500 U	5,000 U
2-Chlorotoluene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
4-Chlorotoluene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2-Dibromo-3-chloropropane (DBCP)	5 U	5 U	5 U	5 U	25 U	5.0 U	10 U	5.0 U	100 U	1,000 U	100 U	100 U	50 U	50 U	50 U	2,500 U	2,500 U	5,000 U	5,000 U	2,500 U	1,250 U	5,000 U	2,500 U	2,500 U	5,000 U
Dibromochloromethane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	1.0 U	100 U	200 U	500 U	500 U	250 U	250 U	250 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2-Dibromoethane (EDB)	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Dibromomethane	1 U	1 U	1 U	1 U	5 U	5.0 U	10 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Dichlorodifluoromethane (CFC 12)	5 U	5 U	5 U	5 U	25 U	5.0 U	10 U	5.0 U	200 U	1,000 U	500 U	500 U	250 U	250 U	250 U	2,500 U	2,500 U	5,000 U	5,000 U	2,500 U	1,250 U	5,000 U	2,500 U	2,500 U	5,000 U
1,1-Dichloroethane (1,1-DCA)	38.4	49.8	30.9	90.6	69.1	23	52	27	100 U	200 U	121	140	116	136	112	500 U	500 U	1,000 U	140 J	130 J	65.0 J	1,000 U	500 U	500 U	1,000 U
1,2-Dichloroethane (EDC)	1 U	1 U	1 U	1 U	5 U	1.0 U	U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,1-Dichloroethene (1,1-DCE)	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	250 U	200 U	100 U	118	80	120	50 U	500 U	500 U	1,000 U	140 J	65 J	250 U	1,000 U	500 U	500 U	1,000 U
cis-1,2-Dichloroethene	91.6	50.0	17.3	122	211	51	28	35	4,350	8,880	5,740	8,270	5,530	8,800	4,520	7,340	6,660	8,950	7,990	4,600	3,970	8,630	6,560	9,400	10,600
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	92	62	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,3-Dichloropropane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
2,2-Dichloropropane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,1-Dichloropropene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	1.0 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Ethylbenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Hexachlorobutadiene	4 U	4 U	4 U	4 U	20 U	4.0 U	2 U	4.0 U	100 U	800 U	400 U	400 U	200 U	200 U	200 U	2,000 U	2,000 U	4,000 U	4,000 U	2,000 U	1,000 U	4,000 U	2,000 U	2,000 U	4,000 U
2-Hexanone	10 U	10 U	10 U	10 U	50 U	15 U	30 U	10 U	400 U	2,000 U	1,000 U	1,000 U	500 U	500 U	500 U	5,000 U	5,000 U	10,000 U	10,000 U	5,000 U	2,500 U	10,000 U	5,000 U	5,000 U	10,000 U
Isopropylbenzene	2 U	2 U	2 U	2 U	10 U	2.0 U	4.0 U	2.0 U	100 U	400 U	200 U	200 U	100 U	100 U	100 U	1,000 U	1,000 U	2,000 U	2,000 U	1,000 U	500 U	2,000 U	1,000 U	1,000 U	2,000 U
p-Isopropyltoluene	2 U	2 U	2 U	2 U	10 U	2.0 U	4 U	2.0 U	100 U	400 U	200 U	200 U	100 U	100 U	100 U	1,000 U	1,000 U	2,000 U	2,000 U	1,000 U	500 U	2,000 U	1,000 U	1,000 U	2,000 U
4-Methyl-2-pentanone (MIBK)	5 U	5 U	5 U	5 U	25 U	5.0 U	10.0 U	5.0 U	400 U	1,000 U	500 U	500 U	250 U	250 U	250 U	2,500 U	2,500 U	5,000 U	5,000 U	2,500 U	1,250 U	5,000 U	2,500 U	2,500 U	5,000 U
Methyl-t-butylether (MTBE)	67.5	60.2	23.6	169	85.6	63	46	40	200 U	200 U	100 U	100 U	50 U	67	50 U	500 U	500 U	1,000 U	90 J	500 U	72.5 J	1,000 U	500 U	500 U	1,000 U
Methylene Chloride (Dichloromethane)	5 U	5 U	5 U	5 U	25 U	5.0 U	10 U	5.0 U	600 U	1,000 U	500 U	500 U	250 U	250 U	250 U	2,500 U	2,500 U	1,020 J	5,000 U	2,500 U	47.5 J	5,000 U	2,500 U	2,500 U	5,000 U
Naphthalene	2 U	2 U	2 U	2 U	10 U	5.0 U	10.0 U	2.0 U	100 U	400 U	200 U	200 U	100 U	100 U	100 U	1,000 U	1,000 U	2,000 U	2,000 U	1,000 U	500 U	2,000 U	1,000 U	1,000 U	2,000 U
n-Propylbenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	150 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Styrene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,1,1,2-Tetrachloroethane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Tetrachloroethene (PCE)	31.2	46.4	13.2	59.2	74.6	18	17	1.5	13,600	18,300	14,300	10,500	5,550	4,590	1,260	49,300	42,000	62,400	44,800	16,100	15,100	37,700	21,300	38,000	53,900
Toluene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	1 U	5 U	5.0 U	10 U	1.0 U	150 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	1.0 U	150 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,1,1-Trichloroethane (TCA)	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.50 U	340	766	301	538	380	585	144	550	500 U	550 J	630 J	185 J	130 J	1,000 U	500 U	500 U	1,000 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	5 U	5.0 U	10 U	0.50 U	100 U	200 U	100 U	100 U	50 U	55	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Trichloroethene (TCE)	9.95	9.95	2.74	16.9	27.5	7.3	5.4	0.67	5,360	11,400	5,950	8,560	4,690	7,050	2,270	11,300	9,300	12,400	11,900	4,950	4,530	9,930	5,930	11,300	13,400
Trichlorofluoromethane (CFC 11)	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	150 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2,3-Trichloropropane	1 U	1 U	1 U	1 U	5 U	5.0 U	10 U	0.5 U	150 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,2,4-Trimethylbenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	1.0 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
1,3,5-Trimethylbenzene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	100 U	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
Vinyl Chloride	10.1	5.83	4.75	26.0	92.3	1.8	19	9.8	200 U	200 U	148	100 U	50 U	50 U	92.0	500 U	500 U	1,000 U	1,000 U	230 J	250 U	1,000 U	500 U	500 U	1,000 U
o-Xylene	1 U	1 U	1 U	1 U	5 U	1.0 U	2.0 U	0.5 U	--	200 U	100 U	100 U	50 U	50 U	50 U	500 U	500 U	1,000 U	1,000 U	500 U	250 U	1,000 U	500 U	500 U	1,000 U
m,p-Xylene	2 U	2 U	2 U	2 U	10 U	2.0 U	2.0 U	1.0 U	--	400 U	200 U	200 U	100 U	100 U	100 U	1,000 U	1,000 U	2,000 U	2,000 U	1,000 U	500 U	2,000 U	1,000 U	1,000 U	2,000 U
Total Xylenes	--	--	--	--	--	--	--	--	100 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	1.37	0.96	0.35	2.16	4.31	0.72	0.74	0.53	167.7	288.7	193.1	215.0	128.0	174.0	73.0	459.0	392.7	563.0	444.6	186.6	166.5	391.9	241.2	412.1	536.4

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-4 cont.										MW-5														
Lab ID:	PTC0818-11	PTF0790-12[RL7]	PTL0402-13	PUC0864-04	PUF0596-04	PUI0833-04	PUL0745-04	250-4237-4	250-8975-1	250-12687-4	PPG0325-01	PPJ0466-02	PQA0597-05	PQE1111-05	PQI0006-05	PQK0146-05	PRC0443-05	PRE0963-05	PRH0933-05	PSC0419-04	PSF0367-07	PSI0446-05[RL7]	PSL0348-10[RL7]	PTC0818-05	PTF0790-08[RL1]
Date Sampled:	03/24/2010	06/24/2010	12/08/2010	03/24/2011	06/16/2011	09/23/2011	12/22/2011	06/26/2012	12/18/2012	06/26/2013	07/11/2006	10/09/2006	01/18/2007	05/29/2007	08/30/2007	11/06/2007	3/13/2008	5/28/2008	8/27/2008	3/12/2009	6/9/2009	9/10/2009	12/9/2009	03/23/2010	06/23/2010
Total Petroleum Hydrocarbons (µg/L)																									
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																									
Acetone	12,500 U	12,500 U	12,500 U	25,000 U	25,000 U	25,000 U	1,250 U	1,300 U	1,300 U	250 U	5,000 U	2,500 U	5,000 U	5,000 U	5,000 U	5,000 U	5,000 U	12,500 U	12,500 U	12,500 U	5,000 U	5,000 U	25,000 U	12,500 U	12,500 U
Benzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	2.3	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Bromobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Bromochloromethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	250 U	250 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Bromodichloromethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Bromoform	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	250 U	250 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Bromomethane	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	500 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	2,500 U	2,500 U	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
2-Butanone (MEK)	5,000 U	5,000 U	5,000 U	10,000 U	10,000 U	10,000 U	500 U	500 U	500 U	100 U	2,000 U	1,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	5,000 U	5,000 U	5,000 U	2,000 U	2,000 U	10,000 U	5,000 U	5,000 U
n-Butylbenzene	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	500 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	2,500 U	2,500 U	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
sec-Butylbenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
tert-Butylbenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Carbon Disulfide	5,000 U	5,000 U	5,000 U	10,000 U	10,000 U	10,000 U	500 U	500 U	500 U	100 U	2,000 U	1,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	5,000 U	5,000 U	5,000 U	2,000 U	2,000 U	10,000 U	5,000 U	5,000 U
Carbon Tetrachloride	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Chlorobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Chloroethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Chloroform	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	500 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Chloromethane	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	100 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	2,500 U	2,500 U	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
2-Chlorotoluene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
4-Chlorotoluene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2-Dibromo-3-chloropropane (DBCP)	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	500 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	2,500 U	2,500 U	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
Dibromochloromethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2-Dibromoethane (EDB)	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Dibromomethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	250 U	250 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2-Dichlorobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,3-Dichlorobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,4-Dichlorobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Dichlorodifluoromethane (CFC 12)	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	500 U	1,000 U	1,000 U	1,000 U	1,000 U	200 U	2,500 U	2,500 U	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
1,1-Dichloroethane (1,1-DCA)	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	73	50 U	13	200 U	100 U	200 U	200 U	200 U	200 U	60 J	500 U	70 J	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2-Dichloroethane (EDC)	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,1-Dichloroethene (1,1-DCE)	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	210	100 U	200 U	228	200 U	200 U	144 J	300 J	100 J	500 U	204	200 U	1,000 U	500 U	500 U
cis-1,2-Dichloroethene	8,340	6,300	7,230	4,500	5,570	3,310	2,610	3,800	3,300	800	2,000	1,190	1,950	2,310	2,090	294	1,820	2,210	1,800	2,480	2,470	968	2,190	2,190	1,420
trans-1,2-Dichloroethene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	25	200 U	100 U	200 U	200 U	200 U	24 J	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2-Dichloropropane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,3-Dichloropropane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
2,2-Dichloropropane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,1-Dichloropropene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
cis-1,3-Dichloropropene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
trans-1,3-Dichloropropene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Ethylbenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Hexachlorobutadiene	2,000 U	2,000 U	2,000 U	4,000 U	4,000 U	4,000 U	200 U	200 U	200 U	40 U	800 U	400 U	800 U	800 U	800 U	800 U	800 U	2,000 U	2,000 U	2,000 U	800 U	800 U	4,000 U	2,000 U	2,000 U
2-Hexanone	5,000 U	5,000 U	5,000 U	10,000 U	10,000 U	10,000 U	500 U	750 U	750 U	100 U	2,000 U	1,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	5,000 U	5,000 U	5,000 U	2,000 U	2,000 U	10,000 U	5,000 U	5,000 U
Isopropylbenzene	1,000 U	1,000 U	1,000 U	2,000 U	2,000 U	2,000 U	100 U	100 U	100 U	20 U	400 U	200 U	400 U	400 U	400 U	400 U	400 U	1,000 U	1,000 U	1,000 U	400 U	400 U	2,000 U	1,000 U	1,000 U
p-Isopropyltoluene	1,000 U	1,000 U	1,000 U	2,000 U	2,000 U	2,000 U	100 U	100 U	100 U	20 U	400 U	200 U	400 U	400 U	400 U	400 U	400 U	1,000 U	1,000 U	1,000 U	400 U	400 U	2,000 U	1,000 U	1,000 U
4-Methyl-2-pentanone (MIBK)	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	500 U	1,000 U	1,000 U	1,000 U	1,000 U	200 U	2,500 U	2,500 U	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
Methyl-t-butylether (MTBE)	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	62.5	50	50 U	16	200 U	100 U	200 U	200 U	200 U	200 U	1,000 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Methylene Chloride (Dichloromethane)	2,500 U	2,500 U	2,500 U	5,000 U	5,000 U	5,000 U	250 U	250 U	250 U	50 U	1,000 U	500 U	1,000 U	1,000 U	1,000 U	126 J	200 U	2,500 U	90 J	2,500 U	1,000 U	1,000 U	5,000 U	2,500 U	2,500 U
Naphthalene	1,000 U	1,000 U	1,000 U	2,000 U	2,000 U	2,000 U	100 U	250 U	250 U	20 U	400 U	200 U	400 U	400 U	400 U	400 U	400 U	1,000 U	1,000 U	1,000 U	400 U	400 U	2,000 U	1,000 U	1,000 U
n-Propylbenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Styrene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,1,1,2-Tetrachloroethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,1,2,2-Tetrachloroethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Tetrachloroethene (PCE)	41,900	24,200	26,100	9,810	19,700	11,000	14,200	1,800	4,200	800	29,400	8,600	27,500	35,900	23,300	2,130	21,700	32,900	9,840	32,300	34,500	4,000	34,600	22,900	13,400 J
Toluene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2,3-Trichlorobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	250 U	250 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2,4-Trichlorobenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,1,1-Trichloroethane (TCA)	520	500 U	500 U	1,000 U	1,000 U	1,000 U	100	66	50 U	11	370	170	438	468	396	38 J	200 U	545	280 J	500 U	432	200 U	1,000 U	500 U	500 U
1,1,2-Trichloroethane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	250 U	250 U	5.7	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Trichloroethene (TCE)	11,200	6,680	7,550	3,330	5,890	2,760	2,630	1,500	1,400	300	8,620	3,990	9,650	11,300	7,900	888	7,690	11,600	5,380	10,300	10,300	2,280	10,100	8,490	4,880
Trichlorofluoromethane (CFC 11)	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2,3-Trichloropropane	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	250 U	250 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,2,4-Trimethylbenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	10 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
1,3,5-Trimethylbenzene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
Vinyl Chloride	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
o-Xylene	500 U	500 U	500 U	1,000 U	1,000 U	1,000 U	50 U	50 U	50 U	5.0 U	200 U	100 U	200 U	200 U	200 U	200 U	200 U	500 U	500 U	500 U	200 U	200 U	1,000 U	500 U	500 U
m,p-Xylene	1,000 U	1,000 U	1,000 U	2,000 U	2,000 U	2,000 U	100 U	100 U	100 U	10.0 U	400 U	200 U	400 U	400 U	400 U	400 U	400 U	1,000 U	1,000 U	1,000 U	400 U	400 U	2,000 U	1,000 U	1,000 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	423.9	261.8	289.4	130.9	221.1	121.5	132.6	61.5	70.0	15.62	265.7	94.5	259.4	328.7	222.2	22.9	209.6	312.6	119.9	298.7	314.0	51.5	308.1	225.3	132.6

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-5 Cont.								MW-5B															
Lab ID:	PTL0402-16	PUC0864-05	PUF0596-05	PUI0833-05	PUL0745-05	250-4237-5	250-8975-5	250-12687-5	PPG0293-05	PPJ0466-01	PQA0597-07	PQE1111-07	PQI0006-08	PQK0146-07	PRC0443-07 RE1	PRE0963-07	PRH0933-07	PSC0419-06	PSF0367-09	PSI0446-07 RL7	PSL0348-12 RL7	PTC0818-07	PTF0790-07RE2 RL7	PTL0402-18
Date Sampled:	12/09/2010	03/23/2011	06/14/2011	09/22/2011	12/22/2011	06/21/2012	12/18/2012	06/26/2013	07/10/2006	10/09/2006	01/18/2007	05/29/2007	8/30/2007	11/6/2007	3/13/2008	5/28/2008	8/26/2008	3/12/2009	6/9/2009	9/10/2009	12/9/2009	03/23/2010	06/23/2010	12/9/2010
Total Petroleum Hydrocarbons (µg/L)																								
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																								
Acetone	12,500 U	25,000 U	25,000 U	25,000 U	1,250 U	500 U	25,000 U	2500 U	1,250 U	1,250 U	250 U	250 U	250 U	1,250 U	500 U	2,500 U	2,500 U	1,250 U	1,250 U	1,250 U	500 U	113	250 U	1,250 U
Benzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	20 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Bromobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Bromochloromethane	500 U	1,000 U	1,000 U	1,000 U	50 U	100 U	5,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Bromodichloromethane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Bromoform	500 U	1,000 U	1,000 U	1,000 U	50 U	100 U	5,000 U	100 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Bromomethane	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	250 U	250 U	50 U	50 U	50 U	250 U	27 J	500 U	500 U	250 U	250 U	250 U	100 U	10 U	50 U	250 U
2-Butanone (MEK)	5,000 U	10,000 U	10,000 U	10,000 U	500 U	200 U	10,000 U	1000 U	500 U	500 U	100 U	100 U	100 U	500 U	200 U	1,000 U	1,000 U	500 U	500 U	500 U	200 U	28.7	100 U	500 U
n-Butylbenzene	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	250 U	250 U	50 U	50 U	50 U	250 U	100 U	500 U	500 U	250 U	250 U	250 U	100 U	10 U	50 U	250 U
sec-Butylbenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
tert-Butylbenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	100 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Carbon Disulfide	5,000 U	10,000 U	10,000 U	10,000 U	500 U	200 U	10,000 U	1000 U	500 U	500 U	100 U	100 U	100 U	500 U	200 U	1,000 U	1,000 U	500 U	500 U	500 U	200 U	20 U	100 U	500 U
Carbon Tetrachloride	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Chlorobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Chloroethane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Chloroform	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	4 J	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Chloromethane	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	250 U	250 U	50 U	50 U	50 U	250 U	100 U	500 U	500 U	250 U	250 U	250 U	100 U	10 U	50 U	250 U
2-Chlorotoluene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
4-Chlorotoluene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,2-Dibromo-3-chloropropane (DBCP)	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	50 U	50 U	10 U	50 U	50 U	250 U	20 U	500 U	500 U	250 U	250 U	250 U	20 U	10 U	50 U	250 U
Dibromochloromethane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	100 U	250 U	250 U	50 U	10 U	10 U	50 U	100 U	100 U	100 U	50 U	50 U	50 U	100 U	2 U	10 U	50 U
1,2-Dibromoethane (EDB)	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Dibromomethane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	5,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,2-Dichlorobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,3-Dichlorobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,4-Dichlorobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Dichlorodifluoromethane (CFC 12)	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	250 U	250 U	50 U	50 U	50 U	250 U	100 U	500 U	500 U	250 U	250 U	250 U	100 U	10 U	50 U	250 U
1,1-Dichloroethane (1,1-DCA)	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	60.5	52	46.6	41.4	35.6	24.5 J	47	56 J	48.0 J	50 U	50 U	50 U	53	3.68	40.0	50 U
1,2-Dichloroethane (EDC)	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,1-Dichloroethene (1,1-DCE)	500 U	1,000 U	1,000 U	1,000 U	73.5	36	1,000 U	71	50 U	50 U	18.9	10.1	10 U	50 U	4 J	19 J	12.0 J	50 U	50 U	50 U	20 U	2 U	10.6	50 U
cis-1,2-Dichloroethene	1,780	2,100	1,930	1,000 U	1,190	540	1,800	1,200	1,500	1,440	1,190	1,120	905	530	1,060	1,450	1,280	847	1,100	1,040	1,350	141	992	1,170
trans-1,2-Dichloroethene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	219	131	10 U	17.9	41.7	48 J	67	100 U	100 U	50 U	50 U	50 U	20 U	2	10 U	50 U
1,2-Dichloropropane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,3-Dichloropropane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
2,2-Dichloropropane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,1-Dichloropropene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	100 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
cis-1,3-Dichloropropene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
trans-1,3-Dichloropropene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Ethylbenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Hexachlorobutadiene	2,000 U	4,000 U	4,000 U	4,000 U	200 U	80 U	4,000 U	400 U	200 U	200 U	40 U	40 U	40 U	200 U	80 U	400 U	400 U	200 U	200 U	200 U	80 U	8 U	40 U	200 U
2-Hexanone	5,000 U	10,000 U	10,000 U	10,000 U	500 U	300 U	15,000 U	1000 U	500 U	500 U	100 U	100 U	100 U	500 U	200 U	1,000 U	1,000 U	500 U	500 U	500 U	200 U	20 U	100 U	500 U
Isopropylbenzene	1,000 U	2,000 U	2,000 U	2,000 U	100 U	40 U	2,000 U	200 U	100 U	100 U	20 U	20 U	20 U	100 U	40 U	200 U	200 U	100 U	100 U	100 U	40 U	4 U	20 U	100 U
p-Isopropyltoluene	1,000 U	2,000 U	2,000 U	2,000 U	100 U	40 U	2,000 U	200 U	100 U	100 U	20 U	20 U	20 U	100 U	40 U	200 U	200 U	100 U	100 U	100 U	40 U	4 U	20 U	100 U
4-Methyl-2-pentanone (MIBK)	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	250 U	250 U	50 U	50 U	50 U	250 U	100 U	500 U	500 U	250 U	250 U	250 U	100 U	10 U	50 U	250 U
Methyl-t-butylether (MTBE)	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	100 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Methylene Chloride (Dichloromethane)	2,500 U	5,000 U	5,000 U	5,000 U	250 U	100 U	5,000 U	500 U	250 U	250 U	50 U	50 U	50 U	21 J	100 U	500 U	500 U	250 U	250 U	250 U	100 U	10 U	50 U	250 U
Naphthalene	1,000 U	2,000 U	2,000 U	2,000 U	100 U	100 U	5,000 U	200 U	100 U	100 U	20 U	20 U	20 U	100 U	40 U	200 U	200 U	100 U	100 U	100 U	40 U	4 U	20 U	100 U
n-Propylbenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Styrene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,1,1,2-Tetrachloroethane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,1,2,2-Tetrachloroethane	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Tetrachloroethene (PCE)	20,200	30,900	32,700	8,860	11,700	8,800	24,000	7,000	5,650	4,750	1,470	1,810	700	824	1,850	3,250	1,810	1,130	1,560	2,040	2,840	140	1,900	1,620
Toluene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,2,3-Trichlorobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	100 U	5,000 U	100 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,2,4-Trichlorobenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	100 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,1,1-Trichloroethane (TCA)	500 U	1,000 U	1,000 U	1,000 U	134	68	1,000 U	100	79.0	55	40	26.1	21.4	15 J	36	49 J	30.0 J	50 U	50 U	50 U	37	2.24	26.2	50 U
1,1,2-Trichloroethane	500 U	1,000 U	1,000 U	1,000 U	50 U	100 U	5,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Trichloroethene (TCE)	6,080	8,750	8,890	2,150	3,890	2,200	6,500	2,900	1,890	1,770	925	880	486	406	950	1,350	841	622	703	909	1,270	90.8	788	808
Trichlorofluoromethane (CFC 11)	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	5,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,2,3-Trichloropropane	500 U	1,000 U	1,000 U	1,000 U	50 U	100 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,2,4-Trimethylbenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	100 U	50 U	54.5	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
1,3,5-Trimethylbenzene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
Vinyl Chloride	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
o-Xylene	500 U	1,000 U	1,000 U	1,000 U	50 U	20 U	1,000 U	50 U	50 U	50 U	10 U	10 U	10 U	50 U	20 U	100 U	100 U	50 U	50 U	50 U	20 U	2 U	10 U	50 U
m,p-Xylene	1,000 U	2,000 U	2,000 U	2,000 U	100 U	40 U	2,000 U	100 U	100 U	100 U	20 U	20 U	20 U	100 U	40 U	200 U	200 U	100 U	100 U	100 U	40 U	4 U	20 U	100 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	186.4	274.6	284.8	69.8	113.2	75.8	212.8	77.39	66.2	58.3	28.4	29.5	17.7	14.0	30.05	45.03	30.64	20.29	26.10	29.95	40.72	3.0	27.8	27.99

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-5B Cont.							MW-6																
Lab ID:	PUC0864-07	PUF0569-07	PUI0833-07	PUL0745-07	250-4237-1	250-8975-1	250-12687-6	PQI0006-04	PQK0146-08	PRC0443-08RE2	PRE0963-08	PRH0933-08	PSC0419-05	PSF0367-05	PSI0446-09 [RL7]	PSL0348-03RE1 [RL]	PUC0773-002	PTC0818-12	PTF0790-05 [RL7]	PTL0402-07	PUC0773-002	PUF0569-08	PUI0833-08	PUL0745-08
Date Sampled:	3/23/2011	6/14/2011	09/22/2011	12/21/2011	6/21/2012	12/18/2012	6/26/2013	8/30/2007	11/6/2007	3/13/2008	5/27/2008	8/25/2008	3/12/2009	6/9/2009	9/10/2009	12/8/2009	3/22/2011	3/25/2010	6/23/2010	12/7/2010	3/22/2011	6/15/2011	09/22/2011	12/21/2011
Total Petroleum Hydrocarbons (µg/L)																								
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																								
Acetone	2,500 U	2,500 U	2,500 U	1,250 U	500 U	25 U	250 U	125 U	1,250 U	500 U	2,500 U	2,500 U	1,250 U	2,500 U	2,500 U	250 U	1,250 U	500 U	500 U	1,250 U	1,250 U	1,250 U	1,250 U	125 U
Benzene	100 U	100 U	100 U	50 U	20 U	1.0 U	2 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Bromobenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Bromochloromethane	100 U	100 U	100 U	50 U	100 U	5.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Bromodichloromethane	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Bromoform	100 U	100 U	100 U	50 U	100 U	5.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Bromomethane	500 U	500 U	500 U	250 U	100 U	5.0 U	50 U	25 U	250 U	100	500 U	500 U	250 U	500 U	500 U	50 U	250 U	100 U	100 U	250 U	250 U	250 U	250 U	25 U
2-Butanone (MEK)	1,000 U	1,000 U	1,000 U	500 U	200 U	10 U	100 U	50 U	500 U	200 U	1,000 U	1,000 U	500 U	1,000 U	1,000 U	100 U	500 U	200 U	200 U	500 U	500 U	500 U	500 U	50 U
n-Butylbenzene	500 U	500 U	500 U	250 U	100 U	5.0 U	50 U	25 U	250 U	100 U	500 U	500 U	250 U	500 U	500 U	50 U	250 U	100 U	100 U	250 U	250 U	250 U	250 U	25 U
sec-Butylbenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
tert-Butylbenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Carbon Disulfide	1,000 U	1,000 U	1,000 U	500 U	200 U	10 U	100 U	50 U	500 U	200 U	1,000 U	1,000 U	500 U	1,000 U	1,000 U	100 U	500 U	200 U	200 U	500 U	500 U	500 U	500 U	50 U
Carbon Tetrachloride	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Chlorobenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Chloroethane	100 U	100 U	100 U	50 U	20 U	5.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Chloroform	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5.9 B	50 U	5 J	100 U	100 U	50 U	100 U	100 U	10 U	20 U	20 U	20 U	63.5	20 U	20 U	50 U	5 U
Chloromethane	500 U	500 U	500 U	250 U	100 U	1.0 U	50 U	25 U	250 U	100 U	500 U	500 U	250 U	500 U	500 U	50 U	250 U	100 U	100 U	250 U	250 U	250 U	250 U	25 U
2-Chlorotoluene	100 U	100 U	100 U	50 U	20 U	5.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
4-Chlorotoluene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2-Dibromo-3-chloropropane (DBCP)	500 U	500 U	500 U	250 U	100 U	1.0 U	50 U	25 U	250 U	20 U	500 U	500 U	250 U	500 U	500 U	50 U	250 U	20 U	100 U	250 U	250 U	250 U	250 U	25 U
Dibromochloromethane	100 U	100 U	100 U	50 U	20 U	5.0 U	10 U	5 U	50 U	100 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	100 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2-Dibromoethane (EDB)	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Dibromomethane	100 U	100 U	100 U	50 U	100 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2-Dichlorobenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,3-Dichlorobenzene	100 U	100 U	100 U	50 U	20 U	5.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,4-Dichlorobenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Dichlorodifluoromethane (CFC 12)	500 U	500 U	500 U	250 U	100 U	5.0 U	50 U	25 U	250 U	100 U	500 U	500 U	250 U	500 U	500 U	50 U	250 U	100 U	100 U	250 U	250 U	250 U	250 U	25 U
1,1-Dichloroethane (1,1-DCA)	100 U	100 U	100 U	50 U	43	1.0 U	11	5 U	50 U	3 J	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2-Dichloroethane (EDC)	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,1-Dichloroethene (1,1-DCE)	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	3 J	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
cis-1,2-Dichloroethene	1,110	1,150	1,100	1,120	970	1.0 U	370	69.9	72.5	65	99 J	69.0 J	73.5	100 U	100 U	56.7	77.5	40.4	88.8	50 U	77.5	92.0	50 U	8.20
trans-1,2-Dichloroethene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5	6 J	3 J	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2-Dichloropropane	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,3-Dichloropropane	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
2,2-Dichloropropane	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,1-Dichloropropene	100 U	100 U	100 U	50 U	20 U	1.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
cis-1,3-Dichloropropene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
trans-1,3-Dichloropropene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Ethylbenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Hexachlorobutadiene	400 U	400 U	400 U	200 U	80 U	4.0 U	40 U	20 U	200 U	80 U	400 U	400 U	200 U	400 U	400 U	40 U	200 U	80 U	80 U	200 U	200 U	200 U	200 U	20 U
2-Hexanone	1,000 U	1,000 U	1,000 U	500 U	300 U	15 U	100 U	50 U	500 U	200 U	1,000 U	1,000 U	500 U	1,000 U	1,000 U	100 U	500 U	200 U	200 U	500 U	500 U	500 U	500 U	50 U
Isopropylbenzene	200 U	200 U	200 U	100 U	40 U	2.0 U	20 U	10 U	100 U	40 U	200 U	200 U	100 U	200 U	200 U	20 U	100 U	40 U	40 U	100 U	100 U	100 U	100 U	10 U
p-Isopropyltoluene	200 U	200 U	200 U	100 U	40 U	2.0 U	20 U	10 U	100 U	40 U	200 U	200 U	100 U	200 U	200 U	20 U	100 U	40 U	40 U	100 U	100 U	100 U	100 U	10 U
4-Methyl-2-pentanone (MIBK)	500 U	500 U	500 U	250 U	100 U	5.0 U	50 U	25 U	250 U	100 U	500 U	500 U	250 U	500 U	500 U	50 U	250 U	100 U	100 U	250 U	250 U	250 U	250 U	25 U
Methyl-t-butylether (MTBE)	100 U	100 U	100 U	50 U	20 U	1.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Methylene Chloride (Dichloromethane)	500 U	500 U	500 U	250 U	100 U	5.0 U	50 U	25 U	24 J	100 U	500 U	17.0 J	250 U	500 U	500 U	50 U	250 U	100 U	100 U	250 U	250 U	250 U	250 U	25 U
Naphthalene	200 U	200 U	200 U	100 U	100 U	5.0 U	20 U	10 U	100 U	40 U	200 U	200 U	100 U	200 U	200 U	20 U	100 U	40 U	40 U	100 U	100 U	100 U	100 U	10 U
n-Propylbenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Styrene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,1,1,2-Tetrachloroethane	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,1,2,2-Tetrachloroethane	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Tetrachloroethene (PCE)	4,170	3,620	2,900	3,080	4,600	3.3	460	771	1,800	2,450	3,560	2,910	2,620	3,840	2,970	430	3890	1,080	3,600	1,880	3,890	3,220	723	428
Toluene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2,3-Trichlorobenzene	100 U	100 U	100 U	50 U	100 U	5.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2,4-Trichlorobenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,1,1-Trichloroethane (TCA)	100 U	100 U	100 U	50 U	40	1.0 U	5.5	15.6	17 J	17.8 J	27 J	15.0 J	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,1,2-Trichloroethane	100 U	100 U	100 U	50 U	100 U	5.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Trichloroethene (TCE)	1,340	1,250	1,050	1,200	1,400	1.0 U	180	162	218	249	391	270	251	345	251	105	304	112	325	150	304	309	65.0	34.5
Trichlorofluoromethane (CFC 11)	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2,3-Trichloropropane	100 U	100 U	100 U	50 U	100 U	5.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,2,4-Trimethylbenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	10 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
1,3,5-Trimethylbenzene	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
Vinyl Chloride	100 U	100 U	100 U	50 U	20 U	1.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
o-Xylene	100 U	100 U	100 U	50 U	20 U	2.0 U	5 U	5 U	50 U	20 U	100 U	100 U	50 U	100 U	100 U	10 U	50 U	20 U	20 U	50 U	50 U	50 U	50 U	5 U
m,p-Xylene	200 U	200 U	200 U	100 U	40 U	1.0 U	10 U	10 U	100 U	40 U	200 U	200 U	100 U	200 U	200	20 U	100 U	40 U	40 U	100 U	100 U	100 U	100 U	10 U
Total Xylenes			--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	46.79	43.21	36.83	39.26	48	0.02	11.78	6.65	13.32	17.41	25.46	20.31	18.47	25.78	19.82	3.98	26.57	7.8	25.1	12.48	26.57	22.72	4.85	2.93

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-6 Cont.			MW-7																	
Lab ID:	250-4237-8	250-8975=8	250-12687-7	PQI0006-03	PQK0146-09 RE1	PRC0443-09	PRE0963-09RE1	PRH0933-09 RE1	PSC0419-01	PSF0367-02	PSI0446-10REI	PSL0348-04	PTC0818-02	PTF0790-04RE1 RE1	PTL0402-05	PUC0773-03	PUF0596-09	PUI0833-09	PUL0745-09	250-4237-9	250-8868-1
Date Sampled:	06/21/2012	12/18/2012	06/25/2013	8/30/2007	11/6/2007	3/13/2008	5/28/2008	8/26/2008	3/11/2009	6/8/2009	9/11/2009	12/8/2009	3/23/2010	6/22/2010	12/7/2010	3/22/2011	6/15/2011	09/22/2101	12/20/2011	06/21/2012	12/13/2012
Total Petroleum Hydrocarbons (µg/L)																					
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																					
Acetone	500 U	500 U	50 U	25 U	25 U	25 U	125 U	25 U	25 U	500 U	25 U	25 U	25 U	125 U	250 U	250 U	250 U	25 U	25 U	250 U	250 U
Benzene	20 U	20 U	0.40 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Bromobenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Bromochloromethane	100 U	100 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	50 U	50 U
Bromodichloromethane	20 U	20 U	1.0 U	1 U	0.3 J	0.33 J	5 U	0.550 J	3.95	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Bromoform	100 U	100 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	50 U	50 U
Bromomethane	100 U	100 U	10 U	5 U	5 U	1 J	25 U	5 U	5 U	100 U	5 U	5 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
2-Butanone (MEK)	200 U	200 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	200 U	10 U	10 U	10 U	50 U	100 U	100 U	100 U	10 U	10 U	100 U	100 U
n-Butylbenzene	100 U	100 U	10 U	5 U	5 U	5 U	25 U	5 U	5 U	100 U	5 U	5 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
sec-Butylbenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
tert-Butylbenzene	20 U	20 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Carbon Disulfide	200 U	200 U	20.0 U	10 U	10 U	10 U	50 U	10 U	10 U	200 U	10 U	10 U	10 U	50 U	100 U	100 U	100 U	10 U	10 U	100 U	100 U
Carbon Tetrachloride	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Chlorobenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Chloroethane	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Chloroform	20 U	20 U	1.0 U	19.2	15.6	19	2.4 J	16.9	16.8	20 U	17.1	17.9	18.7	5 U	10 U	10 U	10 U	6.98	5.63	10 U	10 U
Chloromethane	100 U	100 U	10.0 U	5 U	5 U	5 U	25 U	5 U	5 U	100 U	5 U	5 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
2-Chlorotoluene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
4-Chlorotoluene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,2-Dibromo-3-chloropropane (DBCP)	100 U	100 U	10.0 U	5 U	5 U	1 U	25 U	5 U	1 U	100 U	1 U	1 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
Dibromochloromethane	20 U	20 U	2.0 U	1 U	1 U	5 U	5 U	1 U	5 U	20 U	5 U	5 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,2-Dibromoethane (EDB)	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Dibromomethane	100 U	100 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	50 U	50 U
1,2-Dichlorobenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,3-Dichlorobenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,4-Dichlorobenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Dichlorodifluoromethane (CFC 12)	100 U	100 U	10.0 U	5 U	5 U	5 U	25	5 U	5 U	100 U	5 U	5 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
1,1-Dichloroethane (1,1-DCA)	20 U	20 U	1.0 U	1 U	1 U	1.00 U	0.7 J	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,2-Dichloroethane (EDC)	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,1-Dichloroethene (1,1-DCE)	20 U	20 U	1.0 U	1 U	1 U	0.18 J	3.05 J	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1.11	1.93	10 U	10 U
cis-1,2-Dichloroethene	28	20 U	1.3	1 U	1 U	0.48 J	14.4	0.130 J	1 U	24.6	1 U	1 U	1 U	14.2	15.4	14.8	17.7	1.24	1.32	22	24
trans-1,2-Dichloroethene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,2-Dichloropropane	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,3-Dichloropropane	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
2,2-Dichloropropane	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,1-Dichloropropene	20 U	20 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
cis-1,3-Dichloropropene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
trans-1,3-Dichloropropene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Ethylbenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Hexachlorobutadiene	80 U	80 U	8.0 U	4 U	4 U	4 U	20 U	4 U	4 U	80 U	4 U	4 U	4 U	20 U	40 U	40 U	40 U	4 U	4 U	40 U	40 U
2-Hexanone	300 U	300 U	20.0 U	10 U	10 U	10 U	50 U	10 U	10 U	200 U	10 U	10 U	10 U	50 U	100 U	100 U	100 U	10 U	10 U	150 U	150 U
Isopropylbenzene	40 U	40 U	4.0 U	2 U	2 U	2 U	10 U	2 U	2 U	40 U	2 U	2 U	2 U	10 U	20 U	20 U	20 U	2 U	2 U	10 U	10 U
p-Isopropyltoluene	40 U	40 U	4.0 U	2 U	2 U	2 U	10 U	2 U	2 U	40 U	2 U	2 U	2 U	10 U	20 U	20 U	20 U	2 U	2 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	100 U	100 U	10.0 U	5 U	5 U	5 U	25 U	5 U	5 U	100 U	5 U	5 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
Methyl-t-butylether (MTBE)	20 U	20 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Methylene Chloride (Dichloromethane)	100 U	100 U	10.0 U	5 U	5 U	5 U	25 U	5 U	5 U	100 U	5 U	5 U	5 U	25 U	50 U	50 U	50 U	5 U	5 U	50 U	50 U
Naphthalene	100 U	100 U	4.0 U	2 U	2 U	2 U	10 U	2 U	2 U	40 U	2 U	2 U	2 U	10 U	20 U	20 U	20 U	2 U	2 U	50 U	50 U
n-Propylbenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Styrene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,1,1,2-Tetrachloroethane	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,1,2,2-Tetrachloroethane	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Tetrachloroethene (PCE)	1,300	870	120	1.96 B	8.58	24	294	15	6.50	623	9.33	18.8	31.1	308	549	493	566	40.9	43.7	680	810
Toluene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,2,3-Trichlorobenzene	100 U	100 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	50 U	50 U
1,2,4-Trichlorobenzene	20 U	20 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,1,1-Trichloroethane (TCA)	20 U	20 U	1.0 U	1 U	1 U	0.29 J	3.8 J	0.180 J	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1.70	2.43	10 U	10 U
1,1,2-Trichloroethane	100 U	100 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	50 U	50 U
Trichloroethene (TCE)	120	75	10	1.49	1.83	6	70	3.76	2.15	151	3.09	5.04	7.31	68.6	111	91.1	106	16.8	29.2	130	160
Trichlorofluoromethane (CFC 11)	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,2,3-Trichloropropane	100 U	100 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	50 U	50 U
1,2,4-Trimethylbenzene	20 U	20 U	2.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
1,3,5-Trimethylbenzene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
Vinyl Chloride	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
o-Xylene	20 U	20 U	1.0 U	1 U	1 U	1 U	5 U	1 U	1 U	20 U	1 U	1 U	1 U	5 U	10 U	10 U	10 U	1 U	1 U	10 U	10 U
m,p-Xylene	40 U	40 U	2.0 U	2 U	2 U	2 U	10 U	2 U	2 U	40 U	2 U	2 U	2 U	10 U	20 U	20 U	20 U	2 U	2 U	20 U	20 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	9.04	5.82	0.81	0.02	0.1	0.2	2.5	0.1	0.1	5.2	0.1	0.2	0.2	2.5	4.3	3.8	4.4	0.4	0.5	5.3	6.3

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-7 Cont.	MW-8																			MW-9			
Lab ID:	250-12687-8	PQI0006-02	PQK0146-10	PRC0443-10	PRE0963-10	PRH0933-10	PSC0419-02	PSF0367-01	PSI0466-12 RL7	PSL0348-06 RL7	PTC0818-04	PTF0790-03RE1 RL	PTL0402-06	PUC0773-04	PUF0596-10	PUI0833-10	PUL0745-10	250-4237-10	250-8868-2	250-12687-9	PQI0700-01	PQK0146-11 RL1	PRC0443-11	PRE0963-11
Date Sampled:	06/25/2013	8/30/2007	11/5/2007	3/13/2008	5/27/2008	8/25/2008	3/11/2009	6/8/2009	9/11/2009	12/9/2009	3/23/2010	6/22/2010	12/7/2010	3/22/2011	6/15/2011	09/21/2011	12/21/2011	06/21/2012	12/13/2012	06/25/2013	######	######	######	######
Total Petroleum Hydrocarbons (µg/L)																								
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																								
Acetone	250 U	1,250 U	5,000 U	5,000 U	500 U	250 U	2,500 U	2,500 U	2,500 U	2,500 U	5,000 U	250 U	5,000 U	1,250 U	1,250 U	1,250 U	1,250 U	2,500 U	500 U	2500 U	50 U	1,250 U	1,250 U	125 U
Benzene	2.0 U	50 U	200 U	200 U	20 U	4.30 J	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	20 U	2 U	50 U	50 U	5 U
Bromobenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Bromochloromethane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	500 U	100 U	50 U	2 U	50 U	50 U	5 U
Bromodichloromethane	5.0 U	50 U	200 U	200 U	20 U	10 U	380	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Bromoform	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	500 U	100 U	100 U	2 U	50 U	50 U	5 U
Bromomethane	50 U	250 U	1,000 U	262 J	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	250 U	250 U	25 U
2-Butanone (MEK)	100 U	500 U	2,000 U	2,000 U	200 U	100 U	1,000 U	1,000 U	1,000 U	1,000 U	2,000 U	100 U	2,000 U	500 U	500 U	500 U	500 U	1,000 U	200 U	1000 U	20 U	500 U	500 U	50 U
n-Butylbenzene	50 U	250 U	1,000 U	1,000 U	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	250 U	250 U	25 U
sec-Butylbenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
tert-Butylbenzene	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	100 U	2 U	50 U	50 U	5 U
Carbon Disulfide	100 U	500 U	2,000 U	2,000 U	200 U	100 U	1,000 U	1,000 U	1,000 U	1,000 U	2,000 U	100 U	2,000 U	500 U	500 U	500 U	500 U	1,000 U	200 U	1000 U	20 U	500 U	500 U	50 U
Carbon Tetrachloride	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Chlorobenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Chloroethane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Chloroform	5.0 U	50 U	200 U	200 U	20 U	3.50 J	100 U	100 U	100 U	100 U	200 U	10 U	202	20 U	20 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	0.5 J
Chloromethane	50 U	250 U	1,000 U	1,000 U	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	250 U	250 U	25 U
2-Chlorotoluene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
4-Chlorotoluene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,2-Dibromo-3-chloropropane (DBCP)	50 U	250 U	1,000 U	1,000 U	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	250 U	250 U	25 U
Dibromochloromethane	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	100 U	2 U	50 U	50 U	5 U
1,2-Dibromoethane (EDB)	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Dibromomethane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	500 U	100 U	50 U	2 U	50 U	50 U	5 U
1,2-Dichlorobenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,3-Dichlorobenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,4-Dichlorobenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Dichlorodifluoromethane (CFC 12)	50 U	250 U	1,000 U	1,000 U	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	250 U	250 U	25 U
1,1-Dichloroethane (1,1-DCA)	5.0 U	50 U	200 U	26 J	20 U	17.3	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2.04	50 U	50 U	1.3 J
1,2-Dichloroethane (EDC)	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,1-Dichloroethene (1,1-DCE)	8.2	50 U	200 U	60 J	4 J	46.5	100 U	100 U	100 U	119	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	55	92	2 U	50 U	50 U	1.4 J
cis-1,2-Dichloroethene	21	684	258	964	44.2 J	640	365	512	522	1,010	818	49.1	930	421	79.5	240	348	550	600	930	37.6	16 J	30.0 J	21.7
trans-1,2-Dichloroethene	5.0 U	50 U	200 U	32 J	20 U	11.2	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,2-Dichloropropane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,3-Dichloropropane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
2,2-Dichloropropane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,1-Dichloropropene	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	100 U	2 U	50 U	50 U	5 U
cis-1,3-Dichloropropene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
trans-1,3-Dichloropropene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Ethylbenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Hexachlorobutadiene	40 U	200 U	800 U	800 U	80 U	40 U	400 U	400 U	400 U	400 U	800 U	40 U	800 U	200 U	200 U	200 U	200 U	400 U	80 U	400 U	8 U	200 U	200 U	20 U
2-Hexanone	100 U	500 U	2,000 U	2,000 U	200 U	100 U	1,000 U	1,000 U	1,000 U	1,000 U	2,000 U	100 U	2,000 U	500 U	500 U	500 U	500 U	1,500 U	300 U	1000 U	20 U	500 U	500 U	50 U
Isopropylbenzene	20 U	100 U	400 U	400 U	40 U	20 U	200 U	200 U	200 U	200 U	400 U	20 U	400 U	100 U	100 U	100 U	100 U	200 U	40 U	200 U	4 U	100 U	100 U	10 U
p-Isopropyltoluene	20 U	100 U	400 U	400 U	40 U	20 U	200 U	200 U	200 U	200 U	400 U	20 U	400 U	100 U	100 U	100 U	100 U	200 U	40 U	200 U	4 U	100 U	100 U	10 U
4-Methyl-2-pentanone (MIBK)	50 U	250 U	1,000 U	1,000 U	100 U	50 U	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	250 U	250 U	25 U
Methyl-t-butylether (MTBE)	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	100 U	2 U	50 U	50 U	5 U
Methylene Chloride (Dichloromethane)	50 U	250 U	42 J	1,000 U	100 U	2.70 J	500 U	500 U	500 U	500 U	1,000 U	50 U	1,000 U	250 U	250 U	250 U	250 U	500 U	100 U	500 U	10 U	12 J	250 U	25 U
Naphthalene	20 U	100 U	400 U	400 U	40 U	20 U	200 U	200 U	200 U	200 U	400 U	20 U	400 U	100 U	100 U	100 U	100 U	500 U	100 U	200 U	4 U	100 U	100 U	10 U
n-Propylbenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Styrene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,1,1,2-Tetrachloroethane	5.0 U	50 U	200 U	200 U	20 U	4.80 J	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,1,2,2-Tetrachloroethane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Tetrachloroethene (PCE)	690	5,720	2,990	10,800	664	7,990	3,460	6,140	8,830	16,100	12,600	400	13,100	4,660	872	2,530	4,020	7,800	6,900	12,000	75.5	137	194	190
Toluene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,2,3-Trichlorobenzene	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	500 U	100 U	100 U	2 U	50 U	50 U	5 U
1,2,4-Trichlorobenzene	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	100 U	2 U	50 U	50 U	5 U
1,1,1-Trichloroethane (TCA)	6.8	75	200 U	94 J	5.2 J	54.0	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	74	3.24	50 U	50 U	2.2 J
1,1,2-Trichloroethane	5.0 U	50 U	20 U	200 U	20 U	2.40 J	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	500 U	100 U	50 U	2 U	50 U	50 U	5 U
Trichloroethene (TCE)	160	3,000	1,310	4,340	210	3,230	1,460	2,190	3,200	5,840	4,480	162	4,180	1,610	280	1,060	1,720	2,400	2,200	3,700	37.0	39.5 J	59	50.4
Trichlorofluoromethane (CFC 11)	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
1,2,3-Trichloropropane	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	500 U	100 U	50 U	2 U	50 U	50 U	5 U
1,2,4-Trimethylbenzene	10 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	100 U	2 U	50 U	50 U	5 U
1,3,5-Trimethylbenzene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
Vinyl Chloride	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	20 U	50 U	2 U	50 U	50 U	5 U
o-Xylene	5.0 U	50 U	200 U	200 U	20 U	10 U	100 U	100 U	100 U	100 U	200 U	10 U	200 U	50 U	50 U	50 U	50 U	100 U	40 U	50 U	2 U	50 U	50 U	5 U
m,p-Xylene	10 U	100 U	400 U	400 U	40 U	20 U	200 U	200 U	200 U	200 U	400 U	20 U	400 U	100 U	100 U	100 U	100 U	200 U	20 U	100 U	4 U	100 U	100 U	1.3 J
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	5.68	64.4	30.7	109.0	6.1	80.0	35.7	59.0	83.0	153.2	118.5	4.2	120.4	44.7	8.2	25.8	40.9	71.0	65.1	111.06	1.1	1.3	1.9	1.8

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-9 Cont.															MW-10								
Lab ID:	PRH0933-11	PSC0419-01	PSF0367-03	PSI0446-02 RL7	PSL0348-05 RL7	PTC0818-03	PTF0790-02	PTL0402-11	PUC0864-08	PUF0596-11	PUI0833-11	PUL0745-11	250-4237-11	250-8868-2	250-12687-10	PQI0006-01	PQK1046-12	PRC0443-12	PRE0963-12	PSC0419-09	PSC0419-03	PSF0367-04	PSI0446-01 RL7	PSL0348-02 RL7
Date Sampled:	8/26/2008	3/12/2009	6/8/2009	9/9/2009	12/9/2009	3/23/2010	6/22/2010	12/8/2010	3/23/2011	6/15/2011	9/21/2011	12/21/2011	6/26/2012	12/13/2012	6/25/2013	8/30/2007	11/5/2007	3/13/2008	5/28/2008	8/26/2008	3/11/2009	6/8/2009	9/9/2009	12/8/2009
Total Petroleum Hydrocarbons (µg/L)																								
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																								
Acetone	125 U	125 U	50 U	50 U	125 U	25 U	25 U	25 U	50 U	25 U	25 U	50 U	25 U	50 U	130 U	50 U	500 U	500 U	250 U	125 U	250 U	250 U	125 U	125 U
Benzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	1.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Bromobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Bromochloromethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	5.0 U	10 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Bromodichloromethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Bromoform	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	5.0 U	10 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Bromomethane	25 U	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	100 U	100 U	50 U	25 U	50 U	50 U	25 U	25 U
2-Butanone (MEK)	50 U	50 U	20 U	20 U	50 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U	10 U	20 U	50 U	20 U	200 U	200 U	100 U	50 U	100 U	100 U	50 U	50 U
n-Butylbenzene	25 U	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	100 U	100 U	50 U	25 U	50 U	50 U	25 U	25 U
sec-Butylbenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
tert-Butylbenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Carbon Disulfide	50 U	50 U	20 U	20 U	50 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U	10 U	20 U	50 U	20 U	200 U	200 U	100 U	50 U	100 U	100 U	50 U	50 U
Carbon Tetrachloride	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Chlorobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Chloroethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Chloroform	0.700 J	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	0.600 J	10 U	10 U	5 U	5 U
Chloromethane	25 U	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	100 U	100 U	50 U	25 U	50 U	50 U	25 U	25 U
2-Chlorotoluene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
4-Chlorotoluene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2-Dibromo-3-chloropropane (DBCP)	25 U	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	100 U	100 U	50 U	25 U	50 U	50 U	25 U	25 U
Dibromochloromethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2-Dibromoethane (EDB)	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Dibromomethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	5.0 U	10 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2-Dichlorobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,3-Dichlorobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,4-Dichlorobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Dichlorodifluoromethane (CFC 12)	25 U	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	100 U	100 U	50 U	25 U	50 U	50 U	25 U	25 U
1,1-Dichloroethane (1,1-DCA)	1.95 J	5 U	2 U	2.30	5 U	1.02	1 U	1 U	2 U	1 U	2.95	2.18	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	1.00 J	10 U	10 U	5 U	5 U
1,2-Dichloroethane (EDC)	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,1-Dichloroethene (1,1-DCE)	2.55 J	5 U	2 U	2.44	5 U	1 U	1 U	1 U	2 U	1 U	2.24	2.02	1.0 U	2.0 U	2.5 U	3.3	20 U	3.80 J	2.6 J	2.70 J	10 U	10 U	5 U	5 U
cis-1,2-Dichloroethene	38.8	29	9.86	41.3	27.4	21.0	15.6	13.5	10.8	1 U	51.9	37.0	2.9	11	31	31.5	16.2 J	29.20	17.6	24.2	32	20.6	18.8	22.8
trans-1,2-Dichloroethene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,3-Dichloropropane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
2,2-Dichloropropane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,1-Dichloropropene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Ethylbenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Hexachlorobutadiene	20 U	20 U	8 U	8 U	20 U	4 U	4 U	4 U	8 U	4 U	4 U	8 U	4.0 U	8.0 U	20 U	8 U	80 U	80 U	40 U	20 U	40 U	40 U	20 U	20 U
2-Hexanone	50 U	50 U	20 U	20 U	50 U	10 U	10 U	10 U	20 U	10 U	10 U	20 U	15 U	30 U	50 U	20 U	200 U	200 U	100 U	50 U	100 U	100 U	50 U	50 U
Isopropylbenzene	10 U	10 U	4 U	4 U	10 U	2 U	2 U	2 U	4 U	2 U	2 U	4 U	2.0 U	4.0 U	10 U	4 U	40 U	40 U	20 U	10 U	20 U	20 U	10 U	10 U
p-Isopropyltoluene	10 U	10 U	4 U	4 U	10 U	2 U	2 U	2 U	4 U	2 U	2 U	4 U	2.0 U	4.0 U	10 U	4 U	40 U	40 U	20 U	10 U	20 U	20 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	25 U	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	100 U	100 U	50 U	25 U	50 U	50 U	25 U	25 U
Methyl-t-butylether (MTBE)	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Methylene Chloride (Dichloromethane)	1.35 J	25 U	10 U	10 U	25 U	5 U	5 U	5 U	10 U	5 U	5 U	10 U	5.0 U	10 U	25 U	10 U	6.4 J	100 U	50 U	1.05 J	50 U	50 U	25 U	25 U
Naphthalene	10 U	10 U	4 U	4 U	10 U	2 U	2 U	2 U	4 U	2 U	2 U	4 U	5.0 U	10 U	10 U	4 U	40 U	40 U	20 U	10 U	20 U	20 U	10 U	10 U
n-Propylbenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Styrene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,1,1,2-Tetrachloroethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Tetrachloroethene (PCE)	246	156	85.1	213	264	121	115	69.3	90.1	11.0	171	172	4.5	68	120	152	220	417	243	342	418	237	295	419
Toluene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2,3-Trichlorobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	5.0 U	10 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,1,1-Trichloroethane (TCA)	3.50 J	5 U	2 U	3.38	5 U	1.07	1.30	1 U	2 U	1 U	3.19	2.24	1.0	2.0 U	2.5 U	4.4	2.8 J	4.6 J	3.2 J	3.60 J	10 U	10 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	5.0 U	10 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Trichloroethene (TCE)	76.4	49.8	20.2	72.9	62.2	35	30.5	20.6	22.5	2.81	74.0	53.6	1.2	17	35	112	86.2	162	94.6	136	156	84.4	102	141
Trichlorofluoromethane (CFC 11)	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	5.0 U	10 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,2,4-Trimethylbenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	5.0 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
1,3,5-Trimethylbenzene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
Vinyl Chloride	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	2.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
o-Xylene	5 U	5 U	2 U	2 U	5 U	1 U	1 U	1 U	2 U	1 U	1 U	2 U	1.0 U	4.0 U	2.5 U	2 U	20 U	20 U	10 U	5 U	10 U	10 U	5 U	5 U
m,p-Xylene	10 U	10 U	4 U	4 U	10 U	2 U	2 U	2 U	4 U	2 U	2 U	4 U	2.0 U	2.0 U	5.0 U	4 U	40 U	40 U	20 U	10 U	20 U	20 U	10 U	10 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	2.5	1.6	0.8	2.3	2.3	1.2	1.1	0.7	0.8	0.1	2.2	1.8	0.1	0.7	1.31	2.1	2.1	4.1	2.39	3.37	4.04	2.28	2.75	3.83

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-10 Cont.									
Lab ID:	PTC0818-01	PTF0790-01[RL7]	PTL0402-09	PUC0773-05	PUF0596-12	PUI0833-12	PUL0745-12	250-4237-12	250-8868-4	250-12687-11
Date Sampled:	3/22/2010	6/22/2010	12/8/2010	3/22/2011	6/14/2011	09/22/2011	12/20/2011	06/21/2012	12/13/2012	06/24/2013
Total Petroleum Hydrocarbons (µg/L)										
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)										
Acetone	250 U	250 U	250 U	125 U	125 U	125 U	125 U	130	250 U	250 U
Benzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	2.0 U
Bromobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Bromochloromethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	25	50 U	5.0 U
Bromodichloromethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Bromoform	10 U	10 U	10 U	5 U	5 U	5 U	5 U	25	50 U	10 U
Bromomethane	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
2-Butanone (MEK)	100 U	100 U	100 U	50 U	50 U	50 U	50 U	50	100 U	100 U
n-Butylbenzene	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
sec-Butylbenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
tert-Butylbenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	10 U
Carbon Disulfide	100 U	100 U	100 U	50 U	50 U	50 U	50 U	50	100 U	100 U
Carbon Tetrachloride	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Chlorobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Chloroethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Chloroform	10 U	10 U	19.5	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Chloromethane	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
2-Chlorotoluene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
4-Chlorotoluene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,2-Dibromo-3-chloropropane (DBCP)	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
Dibromochloromethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	10 U
1,2-Dibromoethane (EDB)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Dibromomethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	25	50 U	5.0 U
1,2-Dichlorobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,3-Dichlorobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,4-Dichlorobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Dichlorodifluoromethane (CFC 12)	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
1,1-Dichloroethane (1,1-DCA)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,2-Dichloroethane (EDC)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,1-Dichloroethene (1,1-DCE)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
cis-1,2-Dichloroethene	29.8	19.2	16.3	18.9	8.95	8.95	26.4	16	16	36
trans-1,2-Dichloroethene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,2-Dichloropropane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,3-Dichloropropane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
2,2-Dichloropropane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,1-Dichloropropene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Ethylbenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Hexachlorobutadiene	40 U	40 U	40 U	20 U	20 U	20 U	20 U	20	40 U	40 U
2-Hexanone	100 U	100 U	100 U	50 U	50 U	50 U	50 U	75	150 U	100 U
Isopropylbenzene	20 U	20 U	20 U	10 U	10 U	10 U	10 U	10	20 U	20 U
p-Isopropyltoluene	20 U	20 U	20 U	10 U	10 U	10 U	10 U	10	20 U	20 U
4-Methyl-2-pentanone (MIBK)	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
Methyl-t-butylether (MTBE)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	10 U
Methylene Chloride (Dichloromethane)	50 U	50 U	50 U	25 U	25 U	25 U	25 U	25	50 U	50 U
Naphthalene	20 U	20 U	20 U	10 U	10 U	10 U	10 U	25	50 U	20 U
n-Propylbenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Styrene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,1,1,2-Tetrachloroethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Tetrachloroethene (PCE)	595	326	272	287	115	115	385	310	290	570
Toluene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,2,3-Trichlorobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	25	50 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	10 U
1,1,1-Trichloroethane (TCA)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,1,2-Trichloroethane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	25	50 U	5.0 U
Trichloroethene (TCE)	185	101	83.9	97.8	38.2	38.2	127	87	84	170
Trichlorofluoromethane (CFC 11)	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
1,2,3-Trichloropropane	10 U	10 U	10 U	5 U	5 U	5 U	5 U	25	50 U	5.0 U
1,2,4-Trimethylbenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	10 U
1,3,5-Trimethylbenzene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
Vinyl Chloride	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
o-Xylene	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5.0	10 U	5.0 U
m,p-Xylene	20 U	20 U	20 U	10 U	10 U	10 U	10 U	10	20 U	10 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	5.30	2.93	2.45	2.7	1.1	1.1	3.6	2.9	2.6	5.10

Sample ID:	MW-11							
Lab ID:	PTL0402-08	PUC0864-09	PUF0596-13	PUI0833-13	PUI0833-13	250-4237-13	250-8868-5	250-12687-12
Date Sampled:	12/7/2010	3/23/2011	6/15/2011	09/22/2011	12/20/2011	06/21/2012	12/13/2012	06/25/2013
Total Petroleum Hydrocarbons (µg/L)								
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--
VOCs (µg/L)								
Acetone	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Benzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.20 U
Bromobenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Bromoform	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	1.0 U
Bromomethane	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Butylbenzene	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
sec-Butylbenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
tert-Butylbenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chloromethane	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
2-Chlorotoluene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
4-Chlorotoluene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2-Dibromo-3-chloropropane (DBCP)	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Dibromomethane	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Dichlorodifluoromethane (CFC 12)	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane (1,1-DCA)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2-Dichloroethane (EDC)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1-Dichloroethene (1,1-DCE)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
cis-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
trans-1,2-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,3-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
2,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Hexachlorobutadiene	4 U	4 U	4 U	4 U	4 U	4.0 U	4.0 U	4.0 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	15 U	15 U	10 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
p-Isopropyltoluene	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (MIBK)	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
Methyl-t-butylether (MTBE)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
Methylene Chloride (Dichloromethane)	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
Naphthalene	2 U	2 U	2 U	2 U	2 U	5.0 U	5.0 U	2.0 U
n-Propylbenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Styrene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1,1,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Tetrachloroethene (PCE)	1 U	1 U	1 U	1 U	1 U	1.5	1.0 U	0.8
Toluene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2,3-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	1.0 U
1,2,4-Trichlorobenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane (TCA)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
Trichloroethene (TCE)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Trichlorofluoromethane (CFC 11)	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2,3-Trichloropropane	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
1,2,4-Trimethylbenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
o-Xylene	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
m,p-Xylene	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	1.0 U
Total Xylenes	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01

Sample ID:	MW-12					
Lab ID:	PTL0402-02	PUC0864-10	PUF0569-14	PUI0833-14	PUL0745-14	250-4237-14
Date Sampled:	12/6/2010	3/23/2011	6/13/2011	09/21/2011	12/20/2011	06/21/2012
Total Petroleum Hydrocarbons (µg/L)						
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--
VOCs (µg/L)						
Acetone	25.0 U	25 U	25 U	25 U	25 U	25 U
Benzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Bromobenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Bromochloromethane	1.00 U	1 U	1 U	1 U	1 U	5.0 U
Bromodichloromethane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Bromoform	1.00 U	1 U	1 U	1 U	1 U	5.0 U
Bromomethane	5.00 U	5 U	5 U	5 U	5 U	5.0 U
2-Butanone (MEK)	10.0 U	10 U	10 U	10 U	10 U	10 U
n-Butylbenzene	5.00 U	5 U	5 U	5 U	5 U	5.0 U
sec-Butylbenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
tert-Butylbenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Carbon Disulfide	10.0 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Chlorobenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Chloroethane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Chloroform	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Chloromethane	5.00 U	5 U	5 U	5 U	5 U	5.0 U
2-Chlorotoluene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
4-Chlorotoluene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	5.00 U	5 U	5 U	5 U	5 U	5.0 U
Dibromochloromethane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dibromoethane (EDB)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Dibromomethane	1.00 U	1 U	1 U	1 U	1 U	5.0 U
1,2-Dichlorobenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,3-Dichlorobenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,4-Dichlorobenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Dichlorodifluoromethane (CFC 12)	5.00 U	5 U	5 U	5 U	5 U	5.0 U
1,1-Dichloroethane (1,1-DCA)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dichloroethane (EDC)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,1-Dichloroethene (1,1-DCE)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
cis-1,2-Dichloroethene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
trans-1,2-Dichloroethene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dichloropropane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,3-Dichloropropane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
2,2-Dichloropropane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,1-Dichloropropene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
cis-1,3-Dichloropropene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
trans-1,3-Dichloropropene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Ethylbenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Hexachlorobutadiene	4.00 U	4 U	4 U	4 U	4 U	4.0 U
2-Hexanone	10.0 U	10 U	10 U	10 U	10 U	15 U
Isopropylbenzene	2.00 U	2 U	2 U	2 U	2 U	2.0 U
p-Isopropyltoluene	2.00 U	2 U	2 U	2 U	2 U	2.0 U
4-Methyl-2-pentanone (MIBK)	5.00 U	5 U	5 U	5 U	5 U	5.0 U
Methyl-t-butylether (MTBE)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Methylene Chloride (Dichloromethane)	5.00 U	5 U	5 U	5 U	5 U	5.0 U
Naphthalene	2.00 U	2 U	2 U	2 U	2 U	5.0 U
n-Propylbenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Styrene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,1,1,2-Tetrachloroethane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,1,2,2-Tetrachloroethane	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Tetrachloroethene (PCE)	5.30	3.11	13.80	3.93	3.76	6.9
Toluene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,2,3-Trichlorobenzene	1.00 U	1 U	1 U	1 U	1 U	5.0 U
1,2,4-Trichlorobenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,1,1-Trichloroethane (TCA)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,1,2-Trichloroethane	1.00 U	1 U	1 U	1 U	1 U	5.0 U
Trichloroethene (TCE)	4.77	3.13	5.97	3.13	4.23	4.2
Trichlorofluoromethane (CFC 11)	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,2,3-Trichloropropane	1.00 U	1 U	1 U	1 U	1 U	5.0 U
1,2,4-Trimethylbenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
1,3,5-Trimethylbenzene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
Vinyl Chloride	1.00 U	1 U	1 U	1 U	1 U	1.0 U
o-Xylene	1.00 U	1 U	1 U	1 U	1 U	1.0 U
m,p-Xylene	2.00 U	2 U	2 U	2 U	2 U	2.0 U
Total Xylenes	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	0.1	0.0	0.1	0.0	0.1	0.1

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-12 Cont.		MW-13							MW-14									MW-15					
Lab ID:	250-8868-6	250-12687-13	PTL0402-03	PUC0773-06	PUF0596-15	PUI0833-15	PUL0745-15	250-4237-15	250-8868-7	250-12687-14	PTL0402-15	PUC0773-08	PUF0596-16	PUI0833-17	PUL0745-17	250-4237-17	250-8868-9	250-12687-15	PTL0402-01	PUC0773-01	PUF0596-18	PUI0833-18	PUL0745-18	250-4237-18
Date Sampled:	12/13/2012	06/24/2013	12/7/2010	3/22/2011	6/14/2011	09/22/2011	12/20/2011	06/21/2012	12/13/2012	06/24/2013	12/9/2010	3/22/2011	6/14/2011	09/21/2011	12/20/2011	06/26/2012	12/13/2012	06/24/2013	12/6/2010	3/21/2011	6/13/2011	09/21/2011	12/20/2011	06/21/2012
Total Petroleum Hydrocarbons (µg/L)																								
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)																								
Acetone	25 U	25 U	125 U	125 U	125 U	125 U	50 U	50 U	250 U	130 U	25 U	50 U	50 U	50 U	50 U	50 U	130 U	130 U	25 U	25 U	25 U	25 U	25 U	25 U
Benzene	1.0 U	0.20 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	1.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Bromobenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Bromochloromethane	5.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	10 U	50 U	2.5 U	1 U	2 U	2 U	2 U	2 U	10 U	25 U	2.5 U	1 U	1 U	1 U	1 U	1 U	5.0 U
Bromodichloromethane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Bromoform	5.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	10 U	50 U	5.0 U	1 U	2 U	2 U	2 U	2 U	10 U	25 U	5.0 U	1 U	1 U	1 U	1 U	1 U	5.0 U
Bromomethane	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
2-Butanone (MEK)	10 U	10 U	50 U	50 U	50 U	50 U	20 U	20 U	100 U	50 U	10 U	20 U	20 U	20 U	20 U	20 U	50 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Butylbenzene	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
sec-Butylbenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
tert-Butylbenzene	1.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	5.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Carbon Disulfide	10 U	10 U	50 U	50 U	50 U	50 U	20 U	20 U	100 U	50 U	10 U	20 U	20 U	20 U	20 U	20 U	50 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Chlorobenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Chloroethane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Chloroform	1.0 U	0.69	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Chloromethane	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
2-Chlorotoluene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
4-Chlorotoluene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
Dibromochloromethane	1.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	5.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dibromoethane (EDB)	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Dibromomethane	5.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	10 U	50 U	2.5 U	1 U	2 U	2 U	2 U	2 U	10 U	25 U	2.5 U	1 U	1 U	1 U	1 U	1 U	5.0 U
1,2-Dichlorobenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,3-Dichlorobenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,4-Dichlorobenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
1,1-Dichloroethane (1,1-DCA)	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dichloroethane (EDC)	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,1-Dichloroethene (1,1-DCE)	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2.10	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	0.50 U	16.4	11	11.4	9.35	17.6	11	18	18	9.37	12.0	10.7	6.80	9.88	12	9.2	14	1 U	1 U	1.92	3.33	1.84	1.0 U
trans-1,2-Dichloroethene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,2-Dichloropropane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,3-Dichloropropane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
2,2-Dichloropropane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,1-Dichloropropene	1.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	5.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
trans-1,3-Dichloropropene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Ethylbenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Hexachlorobutadiene	4.0 U	4.0 U	20 U	20 U	20 U	20 U	8 U	8.0 U	40 U	20 U	4 U	8 U	8 U	8 U	8 U	8.0 U	20 U	20 U	4 U	4 U	4 U	4 U	4 U	4.0 U
2-Hexanone	15 U	10 U	50 U	50 U	50 U	50 U	20 U	30 U	150 U	50 U	10 U	20 U	20 U	20 U	20 U	30 U	75 U	50 U	10 U	10 U	10 U	10 U	10 U	15 U
Isopropylbenzene	2.0 U	2.0 U	10 U	10 U	10 U	10 U	4 U	4.0 U	20 U	10 U	2 U	4 U	4 U	4 U	4 U	4.0 U	10 U	10 U	2 U	2 U	2 U	2 U	2 U	2.0 U
p-Isopropyltoluene	2.0 U	2.0 U	10 U	10 U	10 U	10 U	4 U	4.0 U	20 U	10 U	2 U	4 U	4 U	4 U	4 U	4.0 U	10 U	10 U	2 U	2 U	2 U	2 U	2 U	2.0 U
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
Methyl-t-butylether (MTBE)	1.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	5.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Methylene Chloride (Dichloromethane)	5.0 U	5.0 U	25 U	25 U	25 U	25 U	10 U	10 U	50 U	25 U	5 U	10 U	10 U	10 U	10 U	10 U	25 U	25 U	5 U	5 U	5 U	5 U	5 U	5.0 U
Naphthalene	5.0 U	2.0 U	10 U	10 U	10 U	10 U	4 U	10 U	50 U	10 U	2 U	4 U	4 U	4 U	4 U	10 U	25 U	10 U	2 U	2 U	2 U	2 U	2 U	5.0 U
n-Propylbenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Styrene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,1,1,2-Tetrachloroethane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Tetrachloroethene (PCE)	3.1	3.2	205	156	149	136	244	160	270	240	117	148	119	107	147	190	130	220	7.40	3.47	21.2	27.6	16.5	7.8
Toluene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,2,3-Trichlorobenzene	5.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	10 U	50 U	5.0 U	1 U	2 U	2 U	2 U	2 U	10 U	25 U	5.0 U	1 U	1 U	1 U	1 U	1 U	5.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	5.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,1,1-Trichloroethane (TCA)	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2.06	2.0 U	10 U	2.5 U	1.02	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,1,2-Trichloroethane	5.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	10 U	50 U	2.5 U	1 U	2 U	2 U	2 U	2 U	10 U	25 U	2.5 U	1 U	1 U	1 U	1 U	1 U	5.0 U
Trichloroethene (TCE)	3.9	3.4	61.9	49.4	48.1	45.4	75.7	42	75	63	41.0	53.2	42.1	31.4	47.2	53	45	62	1.88	1.46	6.60	7.29	4.22	2.2
Trichlorofluoromethane (CFC 11)	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,2,3-Trichloropropane	5.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	10 U	50 U	2.5 U	1 U	2 U	2 U	2 U	2 U	10 U	25 U	2.5 U	1 U	1 U	1 U	1 U	1 U	5.0 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	5.0 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	5.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U
1,3,5-Trimethylbenzene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
Vinyl Chloride	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
o-Xylene	1.0 U	0.50 U	5 U	5 U	5 U	5 U	2 U	2.0 U	10 U	2.5 U	1 U	2 U	2 U	2 U	2 U	2.0 U	5.0 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1.0 U
m,p-Xylene	2.0 U	1.0 U	10 U	10 U	10 U	10 U	4 U	4.0 U	20 U	5.0 U	2 U	4 U	4 U	4 U	4 U	4.0 U	10 U	5.0 U	2 U	2 U	2 U	2 U	2 U	2.0 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	0.0	0.0	1.9	1.4	1.4	1.3	2.3	1.4	2.4	2.1	1.1	1.4	1.1	1.0	1.3	1.7	1.2	1.9	0.1	0.0	0.2	0.3	0.2	0.1

Please refer to notes at end of table.

Table 6
Groundwater Analytical Results: TPH and VOCs
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-15 Cont.		MW-16							
Lab ID:	250-8868-10	250-12687-16	PTL0402-14	PUC0864-11	PUF0596-19	PUI0833-19	PUL0745-19	250-437-19	250-8868-11	250-12687-17
Date Sampled:	12/13/2012	06/24/2013	12/9/2010	3/23/2011	6/14/2011	09/21/2011	12/20/2011	06/21/2012	12/13/2012	06/25/2013
Total Petroleum Hydrocarbons (µg/L)										
HCID - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
HCID - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
HCID - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPH - Gasoline-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPH - Diesel-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPH - Heavy Oil-Range Hydrocarbons	--	--	--	--	--	--	--	--	--	--
VOCs (µg/L)										
Acetone	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Benzene	1.0 U	0.20 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.20 U
Bromobenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Bromochloromethane	5.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
Bromodichloromethane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Bromoform	5.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	1.0 U
Bromomethane	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
n-Butylbenzene	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
sec-Butylbenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
tert-Butylbenzene	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chlorobenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chloroethane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Chloroform	1.0 U	0.50 U	5.04 B	5.15 B	3.26 B	1.91	3.04	1.9	1.7	1.3
Chloromethane	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
2-Chlorotoluene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
4-Chlorotoluene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2-Dibromo-3-chloropropane (DBCP)	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Dibromomethane	5.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
1,2-Dichlorobenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,3-Dichlorobenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,4-Dichlorobenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane (1,1-DCA)	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2-Dichloroethane (EDC)	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1-Dichloroethene (1,1-DCE)	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
cis-1,2-Dichloroethene	1.0 U	0.52	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
trans-1,2-Dichloroethene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2-Dichloropropane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,3-Dichloropropane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
2,2-Dichloropropane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1-Dichloropropene	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
trans-1,3-Dichloropropene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Ethylbenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Hexachlorobutadiene	4.0 U	4.0 U	4 U	4 U	4 U	4 U	4 U	4.0 U	4.0 U	4.0 U
2-Hexanone	15 U	10 U	10 U	10 U	10 U	10 U	10 U	15 U	15 U	10 U
Isopropylbenzene	2.0 U	2.0 U	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
p-Isopropyltoluene	2.0 U	2.0 U	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
Methyl-t-butylether (MTBE)	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
Methylene Chloride (Dichloromethane)	5.0 U	5.0 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U
Naphthalene	5.0 U	2.0 U	2 U	2 U	2 U	2 U	2 U	5.0 U	5.0 U	2.0 U
n-Propylbenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Styrene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1,1,2-Tetrachloroethane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1,2,2-Tetrachloroethane	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Tetrachloroethene (PCE)	5.6	9.0	14.7	5.96	7.60	4.44	8.35	13	8.7	11
Toluene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2,3-Trichlorobenzene	5.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	1.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane (TCA)	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,1,2-Trichloroethane	5.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
Trichloroethene (TCE)	1.5	1.9	1.01	1 U	1 U	1 U	1.03	1.3	1.1	1.6
Trichlorofluoromethane (CFC 11)	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
1,2,3-Trichloropropane	5.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	5.0 U	5.0 U	0.50 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
Vinyl Chloride	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
o-Xylene	1.0 U	0.50 U	1 U	1 U	1 U	1 U	1 U	1.0 U	1.0 U	0.50 U
m,p-Xylene	2.0 U	1.0 U	2 U	2 U	2 U	2 U	2 U	2.0 U	2.0 U	1.0 U
Total Xylenes	--	--	--	--	--	--	--	--	--	--
Total Molar Chlorinated Ethenes (micromoles per liter [µmol/L])	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1

Notes:

1. VOCs = Volatile organic compounds by EPA Method 8260.
2. µg/L = Micrograms per liter.
3. U = The compound was analyzed for, but was not detected at or above the quantitation limit presented.
4. -- = Not analyzed.
5. Shaded cells highlight detected concentrations of listed analyte.
6. J = Estimated concentration of detected analyte.
7. B = The concentration was detected, but flagged as an estimate based on data quality review; see Appendix B.

Table 7
Soil Vapor Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	Tarr Facility								
Sample ID	B37	VP-1	VP-1	VP-1	VP-1	B19	VP-2	VP-2	VP-2
Lab Sample ID	0607446A-04	0809503B-13	0903664A-03	1005544C-21A	1008553A-01	0607446A-02	0809503B-15	0903664A-04	1005544C-22A
Sampler Type	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
Depth Interval (feet)	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8
Date Sampled	7/19/2006	9/20/2008	3/21/2009	5/20/2010	8/20/2010	7/19/2006	9/20/2008	3/21/2009	5/20/2010
Volatile Organic Compounds (µg/m3)									
Freon 12	--	3.1	150 U	2.8	2	--	120 U	160 U	2.4
Freon 114	--	2 U	220 U	3.8 U	1.3 U	--	170 U	220 U	2.1 U
Chloromethane	--	0.58 U	260 U	2.2	0.85	--	200 U	260 U	1.4
Vinyl Chloride	25	0.072 U	79 U	0.14 U	0.048 U	750 U	61 U	82 U	0.076 U
1,3-Butadiene	--	0.62 U	68 U	1.8	0.41 U	--	53 U	71 U	1.1
Bromomethane	--	1.1 U	120 U	4.4	0.73 U	--	93 U	120 U	1.2 U
Chloroethane	--	0.74 U	82 U	1.4 U	0.49 U	--	63 U	85 U	0.79 U
Freon 11	--	2.8	170 U	3.1 U	1	--	130 U	180 U	1.7 U
Ethanol	--	66	230 U	600 E	260 E	--	180 U	240 U	340 E
Freon 113	--	2.2 U	240 U	4.2 U	1.4 U	--	180 U	250 U	2.3 U
1,1-Dichloroethene	42	0.11 U	140	0.22 U	0.074 U	1,200 U	180	130 U	0.12 U
Acetone	--	160	290 U	500	110	--	230 U	300 U	370 E
2-Propanol	--	170	300 U	850 E	96	--	240 U	320 U	1,500 E
Carbon Disulfide	--	36	96 U	8.6 U	2.9 U	--	75 U	100 U	4.6 U
3-Chloropropene	--	--	390 U	8.6 U	2.9 U	--	300 U	400 U	4.7 U
Methylene Chloride	--	2	110 U	5.4	1.3 U	--	83 U	110 U	2.1 U
Methyl tert-butyl ether	35	1 U	110 U	2 U	0.67 U	1,000 U	86 U	120 U	1.1 U
trans-1,2-Dichloroethene	38	1.1 U	120 U	2.2 U	0.74 U	1,200 U	95 U	130 U	1.2 U
Hexane	--	7.4	110 U	3.8	1.7	--	84 U	110 U	4.4
1,1-Dichloroethane	39	1.6	120 U	0.45 U	0.15 U	1,200 U	97 U	130 U	0.24 U
2-Butanone (Methyl Ethyl Ketone)	--	37	91 U	280	20 J	--	71 U	95 U	180
cis-1,2-Dichloroethene	240	3.1	800	0.44 U	0.15 U	1,200 U	580	280	0.24 U
Tetrahydrofuran	--	4.2 U	91 U	8.1 U	2.8 U	--	71 U	95 U	4.4 U
Chloroform	--	1.4 U	150 U	2.7 U	0.91 U	--	120 U	160 U	1.4 U
1,1,1-Trichloroethane	180	9.7	510	0.6 U	0.2 U	5000	260	700	0.32 U
Cyclohexane	--	1.7	110 U	3	3.1	--	83 U	110 U	2.5
Carbon Tetrachloride	--	1.8 U	200 U	3.5 U	1.2 U	--	150 U	200 U	1.9 U
2,2,4-Trimethylpentane	--	--	140 U	13 U	4.4 U	--	110 U	150 U	6.9 J
Benzene	31 U	0.7	99 U	1.5	0.73	930 U	77 U	100 U	2.3
1,2-Dichloroethane	39 U	0.23 U	120 U	0.45 U	0.15 U	1,200 U	97 U	130 U	0.24 U
Heptane	--	6 J	130 U	18	7.4	--	98 U	130 U	21
Trichloroethene	1,500	32	4,400	0.59 U	0.2 U	36,000	7,400	7,200	11
1,2-Dichloropropane	--	1.3 U	140 U	2.6 U	0.86 U	--	110 U	150 U	1.4 U
1,4-Dioxane	--	2.2	450 U	2 U	0.67 U	--	340 U	460 U	1.1 U
Bromodichloromethane	--	1.9 U	210 U	3.7 U	1.2 U	--	160 U	220 U	2 U
cis-1,3-Dichloropropene	--	1.3 U	140 U	2.5 U	0.85 U	--	110 U	150 U	1.4 U
4-Methyl-2-pentanone	--	15	130 U	22	11	--	98 U	130 U	27
Toluene	62	37	120 U	110	28	1,100 U	90 U	120 U	80
trans-1,3-Dichloropropene	--	1.3 U	140 U	2.5 U	0.85 U	--	110 U	150 U	1.4 U
1,1,2-Trichloroethane	53 U	0.31 U	170 U	0.6 U	0.2 U	1,600 U	130 U	180 U	0.32 U
Tetrachloroethene	26,000	510	86,000	1.8	1.1	640,000	100,000	130,000	3.8
2-Hexanone	--	5.8 U	510 U	11 U	3.8 UJ	--	390 U	530 U	6.1 U
Dibromochloromethane	--	2.4 U	260 U	4.7 U	1.6 U	--	200 U	270 U	2.5 U
1,2-Dibromoethane (EDB)	--	2.2 U	240 U	4.2 U	1.4 U	--	180 U	250 U	2.3 U
Chlorobenzene	--	1.3 U	140 U	2.5 U	0.86 U	--	110 U	150 U	1.4 U
Ethyl Benzene	42 U	15	130 U	91	17	1,300 U	100 U	140 U	56
m,p-Xylene	46	74	130 U	400	65	1,300 U	100 U	140 U	230
o-Xylene	42 U	20	130 U	74	17	1,300 U	100 U	140 U	44
Styrene	--	1.2 U	130 U	2.4 U	0.8 U	--	100 U	140 U	1.3 U
Bromoform	--	2.9 U	320 U	5.7 U	1.9 U	--	250 U	330 U	3.1 U
Cumene	--	1.4 U	150 U	2.7 U	0.92 U	--	120 U	160 U	1.5 U
1,1,2,2-Tetrachloroethane	66 U	0.39 U	210 U	0.76 U	0.26 U	2,000 U	160 U	220 U	0.41 U
Propylbenzene	--	1.4 U	150 U	2.7 U	0.92 U	--	120 U	160 U	1.5 U
4-Ethyltoluene	--	2.3	150 U	4.2	1.4	--	120 U	160 U	4.6
1,3,5-Trimethylbenzene	--	1.4 U	150 U	2.7 U	0.92 U	--	120 U	160 U	1.8
1,2,4-Trimethylbenzene	--	2.4	150 U	4.9	2.3	--	120 U	160 U	6.2
1,3-Dichlorobenzene	--	1.7 U	190 U	3.3 U	1.1 U	--	140 U	190 U	1.8 U
1,4-Dichlorobenzene	--	1.7 U	190 U	3.3 U	1.1 U	--	140 U	190 U	1.8 U
alpha-Chlorotoluene	--	1.4 U	160 U	2.8 U	0.97 U	--	120 U	170 U	1.5 U
1,2-Dichlorobenzene	--	1.7 U	190 U	3.3 U	1.1 U	--	140 U	190 U	1.8 U
1,2,4-Trichlorobenzene	--	10 U	920 U	20 U	6.9 U	--	710 U	960 U	11 U
Hexachlorobutadiene	--	15 U	1,300 U	29 U	10 U	--	1,000 U	1,400 U	16 U

Location	Tarr Facility											
Sample ID	VP-2	B16	VP-3	VP-3	VP-3	VP-3	B38	VP-4	VP-4	VP-4	VP-4	B34
Lab Sample ID	1008553A-02	0607446A-01	0809503B-11	0903664A-01	1005544C-23A	1008553A-03	0607446A-05	0809503B-10	0903664A-02	1005544C-24A	1008553A-04	0607446A-03
Sampler Type	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
Depth Interval (feet)	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8
Date Sampled	8/20/2010	7/19/2006	9/20/2008	3/21/2009	5/20/2010	8/20/2010	7/19/2006	9/20/2008	3/21/2009	5/20/2010	8/20/2010	7/19/2006
Volatile Organic Compounds (µg/m3)												
Freon 12	1.9	--	230 U	140 U	2.4 U	9.2 U	--	140 U	10 U	2.6	2.1	--
Freon 114	1.1 U	--	330 U	200 U	3.3 U	13 U	--	190 U	15 U	1 U	1.1 U	--
Chloromethane	1	--	390 U	230 U	1.1	3.8 U	--	230 U	17 U	0.31 U	0.32 U	--
Vinyl Chloride	0.039 U	220 U	120 U	72 U	0.12 U	0.48 U	140 U	71 U	5.4 U	0.065	0.04 U	140 U
1,3-Butadiene	0.34 U	--	100 U	62 U	1 U	4.1 U	--	62 U	4.6 U	0.33 U	0.34 U	--
Bromomethane	0.59 U	--	180 U	110 U	1.9 U	7.2 U	--	110 U	8.2 U	0.58 U	0.6 U	--
Chloroethane	0.4 U	--	120 U	74 U	1.3 U	4.9 U	--	73 U	5.6 U	0.39 U	0.41 U	--
Freon 11	0.97	--	260 U	160 U	2.7 U	10 U	--	160 U	12 U	1.4	1	--
Ethanol	210 E	--	350 U	210 U	50	18 U	--	210 U	16 U	11	7.2	--
Freon 113	1.2 U	--	360 U	220 U	3.7 U	14 U	--	210 U	16 U	1.1 U	1.2 U	--
1,1-Dichloroethene	0.06 U	340 U	190 U	160	0.19 U	0.74 U	210 U	150	8.3 U	0.059 U	0.061 U	210 U
Acetone	910 E	--	450 U	270 U	630 E	540	--	280	20 J	43	11	--
2-Propanol	130	--	460 U	280 U	62	190	--	270 U	21 U	23	2.4	--
Carbon Disulfide	2.4 U	--	150 U	88 U	7.4 U	29 U	--	86 U	6.6 U	6.9	2.4 U	--
3-Chloropropene	2.4 U	--	590 U	350 U	7.5 U	29 U	--	350 U	26 U	2.3 U	2.4 U	--
Methylene Chloride	1 U	--	160 U	98 U	3.3 U	13 U	--	96 U	7.3 U	3.1	1.1 U	--
Methyl tert-butyl ether	0.55 U	310 U	170 U	100 U	1.7 U	6.7 U	190 U	100 U	7.6 U	0.56	0.56 U	190 U
trans-1,2-Dichloroethene	0.6 U	340 U	190 U	110 U	1.9 U	7.4 U	210 U	110 U	8.3 U	0.59 U	0.61 U	210 U
Hexane	2.7	--	160 U	99 U	3.7	430	--	98 U	7.4 U	0.52 U	0.55 U	--
1,1-Dichloroethane	0.12 U	350 U	190 U	140	0.39 U	1.5 U	220 U	110 U	8.5 U	0.12 U	0.12 U	220 U
2-Butanone (Methyl Ethyl Ketone)	52 J	--	140 U	83 U	280	9.3 J	--	82 U	6.2 U	3	2.2 J	--
cis-1,2-Dichloroethene	0.12 U	540	1,600	2,100	0.38 U	1.5 U	3,500	110 U	140	3.2	4.1	210 U
Tetrahydrofuran	2.2 U	--	140 U	83 U	7.1 U	27 U	--	82 U	6.2 U	2.2 U	2.3 U	--
Chloroform	0.74 U	--	230 U	140 U	2.3 U	9.1 U	--	140 U	10 U	0.73 U	0.76 U	--
1,1,1-Trichloroethane	0.16 U	2,600	1,500	1,600	0.52 U	2 U	1,800	420	29	0.68	1.6	360
Cyclohexane	4.7	--	160 U	97 U	6	2,400	--	96 U	7.2 U	0.51 U	0.53 U	--
Carbon Tetrachloride	0.96 U	--	300 U	180 U	3 U	12 U	--	170 U	13 U	0.94 U	0.98 U	--
2,2,4-Trimethylpentane	3.6 U	--	220 U	130 U	11 U	43 U	--	130 U	9.8 U	3.5 U	3.6 U	--
Benzene	0.6	280 U	150 U	90 U	2	3 U	170 U	89 U	6.7 U	0.4	0.25 U	170 U
1,2-Dichloroethane	0.12 U	350 U	190 U	110 U	0.39 U	1.5 U	220 U	110 U	8.5 U	0.12 U	0.12 U	220 U
Heptane	7.5	--	190 U	120 U	20	11	--	110 U	8.6 U	0.61 U	0.64 U	--
Trichloroethene	0.16 U	27,000	27,000	18,000	9.3	2.0 U	12,000	2,400	340	5.4	14	2,100
1,2-Dichloropropane	0.7 U	--	220 U	130 U	2.2 U	8.6 U	--	130 U	9.7 U	0.69 U	0.72 U	--
1,4-Dioxane	1.3	--	680 U	410 U	1.7 U	6.7 U	--	400 U	30 U	0.54 U	0.56 U	--
Bromodichloromethane	1 U	--	310 U	190 U	3.2 U	12 U	--	190 U	14 U	1 U	1 U	--
cis-1,3-Dichloropropene	0.69 U	--	210 U	130 U	2.2 U	8.4 U	--	130 U	9.6 U	0.68 U	0.7 U	--
4-Methyl-2-pentanone	7.9	--	190 U	120 U	88	9.9	--	110 U	8.6 U	1.2 J	0.63 U	--
Toluene	30	320 U	240	110 U	250	190	200 U	100 U	7.9 U	5	0.58	200 U
trans-1,3-Dichloropropene	0.69 U	--	210 U	130 U	2.2 U	8.4 U	--	130 U	9.6 U	0.68 U	0.7 U	--
1,1,2-Trichloroethane	0.16 U	470 U	260 U	150 U	0.52 U	2 U	290 U	150 U	11 U	0.16 U	0.17 U	290 U
Tetrachloroethene	3.4	170,000	160,000	120,000	4.1	5.9	130,000	65,000	4,800	56	120	100,000
2-Hexanone	3.1 UJ	--	770 U	460 U	9.8 U	38 UJ	--	460 U	34 U	3 U	3.2 UJ	--
Dibromochloromethane	1.3 U	--	400 U	240 U	4.1 U	16 U	--	240 U	18 U	1.3 U	1.3 U	--
1,2-Dibromoethane (EDB)	1.2 U	--	360 U	220 U	3.7 U	14 U	--	210 U	16 U	1.1 U	1.2 U	--
Chlorobenzene	0.7 U	--	220 U	130 U	2.2 U	8.6 U	--	130 U	9.7 U	0.68 U	0.71 U	--
Ethyl Benzene	10	380 U	200 U	120 U	66	140	230 U	120 U	9.1 U	1.2	0.3	230 U
m,p-Xylene	40	380 U	280	120 U	280	510	230 U	120 U	9.1 U	5.2	1	230 U
o-Xylene	10	380 U	200 U	120 U	73	150	230 U	120 U	9.1 U	1.6	0.3	230 U
Styrene	0.65 U	--	200 U	120 U	2 U	7.9 U	--	120 U	9 U	0.63 U	0.66 U	--
Bromoform	1.6 U	--	480 U	290 U	5 U	19 U	--	290 U	22 U	1.5 U	1.6 U	--
Cumene	0.75 U	--	230 U	140 U	2.4 U	9.1 U	--	140 U	10 U	0.73 U	0.76 U	--
1,1,2,2-Tetrachloroethane	0.21 U	590 U	320 U	190 U	0.66 U	2.6 U	370 U	190 U	14 U	0.2 U	0.21 U	370 U
Propylbenzene	0.75 U	--	230 U	140 U	2.4 U	9.1 U	--	140 U	10 U	0.73 U	0.76 U	--
4-Ethyltoluene	0.94	--	230 U	140 U	5.4	9.1 U	--	140 U	10 U	1.1	0.76 U	--
1,3,5-Trimethylbenzene	0.75 U	--	230 U	140 U	2.4 U	9.1 U	--	140 U	10 U	0.73 U	0.76 U	--
1,2,4-Trimethylbenzene	1.6	--	230 U	140 U	6.1	9.1 U	--	140 U	10 U	1.6	0.76 U	--
1,3-Dichlorobenzene	0.91 U	--	280 U	170 U	2.9 U	11 U	--	170 U	13 U	0.9 U	0.93 U	--
1,4-Dichlorobenzene	0.91 U	--	280 U	170 U	2.9 U	11 U	--	170 U	13 U	0.9 U	0.93 U	--
alpha-Chlorotoluene	0.79 U	--	240 U	140 U	2.5 U	9.6 U	--	140 U	11 U	0.77 U	0.8 U	--
1,2-Dichlorobenzene	0.91 U	--	280 U	170 U	2.9 U	11 U	--	170 U	13 U	0.9 U	0.93 U	--
1,2,4-Trichlorobenzene	5.6 U	--	1,400 U	840 U	18 U	69 U	--	820 U	62 U	5.5 U	5.8 U	--
Hexachlorobutadiene	8.1 U	--	2,000 U	1,200 U	26 U	99 U	--	1,200 U	90 U	7.9 U	8.3 U	--

Location	Tarr Facility									
Sample ID	VP-5	VP-5	VP-5	VP-5	VP-6	VP-6	VP-6	VP-6	VP-6	B-1
Lab Sample ID	0809503A-08	0903664B-12	1005544C-25A	1008553A-05	0809503A-06	0903664B-13	0907105AR1-01	1005544C-26A	1008553A-06	0606435B-01
Sampler Type	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
Depth Interval (feet)	1.2-1.8	1.2-1.8	1.2-1.8	1.2-1.8	3.8-5	3.8-5	0907105AR1-01	3.8-5	3.8-5	3.8-5
Date Sampled	9/20/2008	3/21/2009	5/20/2010	8/20/2010	9/20/2008	3/21/2009	6/25/2009	5/20/2010	8/20/2010	6/15/2006
Volatile Organic Compounds (µg/m3)										
Freon 12	58 U	23 U	14 U	9.6 U	140 U	190 U	65 U	9.9 U	5 U	--
Freon 114	82 U	33 U	20 U	14 U	190 U	270 U	92 U	14 U	7.1 U	--
Chloromethane	97 U	39 U	6 U	4 U	230 U	320 U	110 U	4.2 U	2.1 U	--
Vinyl Chloride	30 U	12 U	0.75 U	0.5 U	71 U	99 U	34 U	0.51 U	0.26 U	3,600 U
1,3-Butadiene	26 U	10 U	6.4 U	4.3 U	62 U	86 U	29 U	4.4 U	2.2 U	--
Bromomethane	46 U	18 U	11 U	7.5 U	110 U	150 U	51 U	7.8 U	3.9 U	--
Chloroethane	31 U	12 U	7.7 U	5.1 U	73 U	100 U	35 U	5.3 U	2.7 U	--
Freon 11	66 U	26 U	16 U	11 U	160 U	220 U	74 U	11 U	5.7 U	--
Ethanol	88 U	35 U	28 U	18 U	210 U	290 U	99 U	19 U	9.5 U	--
Freon 113	90 U	36 U	22 U	15 U	210 U	300 U	100 U	15 U	7.7 U	--
1,1-Dichloroethene	46 U	19 U	1.2 U	0.77 U	140	150 U	130 U	0.8 U	0.4 U	5,500 U
Acetone	300	140	91	23 U	260	370 U	120 U	160	110	--
2-Propanol	120 U	46 U	36 U	24 U	270 U	380 U	130 U	160	120	--
Carbon Disulfide	36 U	15 U	45 U	30 U	86 U	120 U	41 U	31 U	16 U	--
3-Chloropropene	150 U	59 U	46 U	30 U	350 U	490 U	160 U	31 U	16 U	--
Methylene Chloride	41 U	16 U	20 U	13 U	96 U	130 U	46 U	14 U	7 U	--
Methyl tert-butyl ether	42 U	17 U	10 U	7 U	100 U	140 U	47 U	7.2 U	3.6 U	5,000 U
trans-1,2-Dichloroethene	46 U	19 U	12 U	7.7 U	110 U	150 U	52 U	8 U	4 U	5,500 U
Hexane	41 U	16 U	10 U	6.8 U	98 U	140 U	46 U	7.1 U	3.6 U	--
1,1-Dichloroethane	48 U	19 U	2.4 U	1.6 U	110 U	160 U	53 U	1.6 U	0.82 U	5,600 U
2-Butanone (Methyl Ethyl Ketone)	35 U	14 U	8.6 U	5.7 UJ	82 U	110 U	39 U	5.9 U	3 UJ	--
cis-1,2-Dichloroethene	46 U	19 U	2.3 U	1.5 U	110 U	150 U	52 U	1.6 U	0.8 U	37,000
Tetrahydrofuran	35 U	14 U	43 U	29 U	82 U	110 U	39 U	30 U	15 U	--
Chloroform	57 U	23 U	14 U	9.5 U	140 U	190 U	64 U	9.8 U	4.9 U	--
1,1,1-Trichloroethane	64 U	26 U	3.2 U	2.1 U	410	320	340	4.4	2.3	7,600 U
Cyclohexane	40 U	16 U	10 U	6.7 U	96 U	130 U	45 U	6.9 U	3.5 U	--
Carbon Tetrachloride	74 U	30 U	18 U	12 U	170 U	240 U	83 U	13 U	6.4 U	--
2,2,4-Trimethylpentane	55 U	22 U	68 U	45 U	130 U	180 U	61 U	47 U	24 U	--
Benzene	38 U	15 U	4.7 U	3.1 U	89 U	120 U	42 U	3.2 U	1.6 U	4,400 U
1,2-Dichloroethane	48 U	19 U	2.4 U	1.6 U	110 U	160 U	53 U	1.6 U	0.82 U	5,600 U
Heptane	48 U	19 U	12 U	8 U	110 U	160 U	54 U	8.2 U	4.1 U	--
Trichloroethene	380	72	17	6.5	2,400	1,700	2,300	66	33	140,000
1,2-Dichloropropane	54 U	22 U	13 U	9 U	130 U	180 U	61 U	9.3 U	4.7 U	--
1,4-Dioxane	170 U	68 U	10 U	7 U	400 U	560 U	190 U	7.2 U	3.6 U	--
Bromodichloromethane	79 U	31 U	20 U	13 U	190 U	260 U	88 U	13 U	6.8 U	--
cis-1,3-Dichloropropene	53 U	21 U	13 U	8.8 U	130 U	180 U	60 U	9.1 U	4.6 U	--
4-Methyl-2-pentanone	48 U	19 U	12 U	7.9 U	110 U	160 U	54 U	8.2 U	4.1 U	--
Toluene	44 U	18 U	2.8	1.5 U	100 U	150 U	50 U	1.5 U	0.94	5,200 U
trans-1,3-Dichloropropene	53 U	21 U	13 U	8.8 U	130 U	180 U	60 U	9.1 U	4.6 U	--
1,1,2-Trichloroethane	64 U	26 U	3.2 U	2.1 U	150 U	210 U	72 U	2.2 U	1.1 U	7,600 U
Tetrachloroethene	23,000	10,000	2,900	1600	65,000	76,000	64,000	1,800	1,000	1,700,000
2-Hexanone	190 U	77 U	60 U	40 UJ	460 U	640 U	220 U	41 U	21 UJ	--
Dibromochloromethane	100 U	40 U	25 U	16 U	240 U	330 U	110 U	17 U	8.6 U	--
1,2-Dibromoethane (EDB)	90 U	36 U	22 U	15 U	210 U	300 U	100 U	15 U	7.8 U	--
Chlorobenzene	54 U	22 U	13 U	8.9 U	130 U	180 U	60 U	9.2 U	4.6 U	--
Ethyl Benzene	51 U	20 U	2.5 U	1.7 U	120 U	170 U	57 U	1.7 U	0.88 U	6,000 U
m,p-Xylene	51 U	20 U	5.1 U	3.4 U	120 U	170 U	57 U	3.5 U	1.8 U	6,000 U
o-Xylene	51 U	20 U	2.5 U	1.7 U	120 U	170 U	57 U	1.7 U	0.88 U	6,000 U
Styrene	50 U	20 U	12 U	8.3 U	120 U	160 U	56 U	8.6 U	4.3 U	--
Bromoform	120 U	48 U	30 U	20 U	290 U	400 U	140 U	21 U	10 U	--
Cumene	58 U	23 U	14 U	9.5 U	140 U	190 U	65 U	9.9 U	5 U	--
1,1,2,2-Tetrachloroethane	81 U	32 U	4 U	2.7 U	190 U	270 U	90 U	2.8 U	1.4 U	9,500 U
Propylbenzene	58 U	23 U	14 U	9.5 U	140 U	190 U	65 U	9.9 U	5 U	--
4-Ethyltoluene	58 U	23 U	14 U	9.5 U	140 U	190 U	65 U	9.9 U	5 U	--
1,3,5-Trimethylbenzene	58 U	23 U	14 U	9.5 U	140 U	190 U	65 U	9.9 U	5 U	--
1,2,4-Trimethylbenzene	58 U	23 U	14 U	9.5 U	140 U	190 U	65 U	9.9 U	5 U	--
1,3-Dichlorobenzene	71 U	28 U	18 U	12 U	170 U	230 U	79 U	12 U	6.1 U	--
1,4-Dichlorobenzene	71 U	28 U	18 U	12 U	170 U	230 U	79 U	12 U	6.1 U	--
alpha-Chlorotoluene	61 U	24 U	15 U	10 U	140 U	200 U	68 U	10 U	5.2 U	--
1,2-Dichlorobenzene	71 U	28 U	18 U	12 U	170 U	230 U	79 U	12 U	6.1 U	--
1,2,4-Trichlorobenzene	350 U	140 U	110 U	72 U	820 U	1,200 U	390 U	74 U	37 U	--
Hexachlorobutadiene	500 U	200 U	160 U	100 U	1,200 U	1,600 U	560 U	110 U	54 U	--

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15.
2. $\mu g/m^3$ = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the CCV.
7. Shaded cells highlight detected concentrations of listed analyte.

Table 7
Soil Vapor Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	Tarr Facility								740 N. Russell	
Sample ID	VP-14	VP-14	VP-14	VP-16*	VP-17*	S-2-11	D-2i	D-8i	SV-A	B-42
Lab Sample ID	0904356-01	1005544D-33A	1008553B-13	0911075-05	0911075-01	0911075-04	0911075-03	0911075-02	0705129-01	0705456-01
Sampler Type	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Temporary	Temporary
Depth Interval	1.2-1.8	1.2-1.8	1.2-1.8	22-27	22-27	4-15	18-33	18-33	4.5 to 5	2.5 to 3
Date Sampled	4/9/2009	5/20/2010	8/20/2010	10/30/2009	10/30/2009	10/30/2009	10/30/2009	10/30/2009	5/2/2007	5/17/2007
Volatile Organic Compounds (µg/m3)										
Freon 12	24 U	3.7 U	5.3 U	4,300 U	7,000 U	7,100 U	4,200 U	31,000 U	--	--
Freon 114	34 U	5.2 U	7.5 U	6,100 U	9,800 U	10,000 U	5,900 U	44,000 U	--	--
Chloromethane	10 U	1.5 U	8.9 U	7,200 U	12,000 U	12,000 U	6,900 U	52,000 U	--	--
Vinyl Chloride	1.2 U	0.19 U	2.7 U	2,200 U	3,600 U	3,700 U	2,100 U	16,000 U	360 U	370 U
1,3-Butadiene	11 U	1.6 U	2.4 U	1,900 U	3,100 U	3,200 U	1,800 U	14,000 U	--	--
Bromomethane	19 U	2.9 U	4.2 U	3,400 U	5,500 U	5,600 U	3,300 U	25,000 U	--	--
Chloroethane	13 U	2 U	2.8 U	2,300 U	3,700 U	3,800 U	2,200 U	17,000 U	--	--
Freon 11	27 U	4.2 U	6 U	4,900 U	7,900 U	8,100 U	4,700 U	36,000 U	--	--
Ethanol	46 U	10	32	6,600 U	11,000 U	11,000 U	6,300 U	48,000 U	--	--
Freon 113	37 U	5.7 U	8.2 U	6,700 U	11,000 U	11,000 U	6,400 U	49,000 U	--	--
1,1-Dichloroethene	1.9 U	0.3 U	4.3 U	5,900	5,600 U	5,700 U	3,300 U	25,000 U	2,300	570 U
Acetone	72 U	70	33	8,300 U	13,000 U	14,000 U	63,000	60,000 U	--	--
2-Propanol	60 U	9.2 U	10 U	8,600 U	14,000 U	14,000 U	8,200 U	62,000 U	--	--
Carbon Disulfide	76 U	12 U	14	2,700 U	4,400 U	4,500 U	2,600 U	20,000 U	--	--
3-Chloropropene	76 U	12 U	13 U	1,100 U	18,000 U	18,000 U	10,000 U	80,000 U	--	--
Methylene Chloride	34 U	5.2 U	3.7 U	3,000 U	4,900 U	5,000 U	2,900 U	22,000 U	--	--
Methyl tert-butyl ether	18 U	2.7 U	3.9 U	3,200 U	5,100 U	5,200 U	3,000 U	23,000 U	--	--
trans-1,2-Dichloroethene	19 U	3 U	4.3 U	3,500 U	5,600 U	5,700 U	3,300 U	25,000 U	550 U	570 U
Hexane	17 U	2.6 U	3.8 U	3,100 U	5,000 U	5,100 U	3,000 U	22,000 U	--	--
1,1-Dichloroethane	4 U	0.6 U	4.4 U	3,500 U	5,700 U	5,800 U	3,400 U	26,000 U	--	--
2-Butanone (Methyl Ethyl Ketone)	14 U	3.9	4.5	2,600 U	4,200 U	4,200 U	11,000	19,000 U	--	--
cis-1,2-Dichloroethene	53	20	46	28,000 U	190,000	8,200	14,000	180,000	5,800	570 U
Tetrahydrofuran	72 U	11 U	3.2 U	2,600 U	4,200 U	160,000	59,000	46,000	--	--
Chloroform	24 U	3.6 U	5.2 U	4,300 U	6,900 U	7,000 U	4,100 U	31,000 U	--	--
1,1,1-Trichloroethane	5.3 U	0.81 U	5.9 U	20,000	17,000	7,800 U	6,400	78,000	--	--
Cyclohexane	17 U	2.6 U	3.7 U	3,000 U	4,800 U	5,000 U	2,900 U	22,000 U	--	--
Carbon Tetrachloride	31 U	4.7 U	6.8 U	5,500 U	8,900 U	9,100 U	5,300 U	40,000 U	--	--
2,2,4-Trimethylpentane	110 U	17 U	5 U	4,100 U	6,600 U	6,700 U	3,900 U	30,000 U	--	--
Benzene	7.8 U	1.2 U	3.4 U	2,800 U	4,500 U	4,600 U	2,700 U	20,000 U	--	--
1,2-Dichloroethane	4 U	0.6 U	4.4 U	3,500 U	5,700 U	5,800 U	3,400 U	26,000 U	--	--
Heptane	20 U	3 U	4.4 U	3,600 U	5,800 U	5,900 U	3,400 U	26,000 U	--	--
Trichloroethene	150	41	120	210,000	260,000	64,000	96,000	1,000,000	44,000	770 U
1,2-Dichloropropane	22 U	3.4 U	5 U	4,000 U	6,500 U	6,600 U	3,900 U	29,000 U	--	--
1,4-Dioxane	18 U	2.7 U	15 U	13,000 U	20,000 U	21,000 U	12,000 U	92,000 U	--	--
Bromodichloromethane	33 U	5 U	7.2 U	5,900 U	9,400 U	9,600 U	5,600 U	42,000 U	--	--
cis-1,3-Dichloropropene	22 U	3.4 U	4.9 U	4,000 U	6,400 U	6,500 U	3,800 U	29,000 U	--	--
4-Methyl-2-pentanone	20 U	3 U	4.4 U	3,600 U	5,800 U	5,900 U	3,400 U	26,000 U	--	--
Toluene	19	1.7	4 U	3,300 U	5,300 U	5,400 U	3,200 U	24,000 U	--	--
trans-1,3-Dichloropropene	22 U	3.4 U	4.9 U	4,000 U	6,400 U	6,500 U	3,800 U	29,000 U	--	--
1,1,2-Trichloroethane	5.3 U	0.81 U	5.9 U	4,800 U	7,700 U	7,800 U	4,600 U	35,000 U	--	--
Tetrachloroethene	3,300	660	2,800	1,900,000	2,200,000	2,100,000	2,400,000	11,000,000	230,000	1,500
2-Hexanone	100 U	15 U	18 U	14,000 U	23,000 U	24,000 U	14,000 U	100,000 U	--	--
Dibromochloromethane	42 U	6.3 U	9.2 U	7,400 U	12,000 U	12,000 U	7,200 U	54,000 U	--	--
1,2-Dibromoethane (EDB)	37 U	5.7 U	8.3 U	6,700 U	11,000 U	11,000 U	6,400 U	49,000 U	--	--
Chlorobenzene	22 U	3.4 U	4.9 U	4,000 U	6,500 U	6,600 U	3,900 U	29,000 U	--	--
Ethyl Benzene	10	1.1	4.7 U	3,800 U	6,100 U	6,200 U	3,600 U	28,000 U	--	--
m,p-Xylene	38	4	6.1	3,800 U	6,100 U	6,200 U	3,600 U	28,000 U	--	--
o-Xylene	10	1.4	4.7 U	3,800 U	6,100 U	6,200 U	3,600 U	28,000 U	--	--
Styrene	21 U	3.2 U	4.6 U	3,700 U	6,000 U	6,100 U	3,600 U	27,000 U	--	--
Bromoform	50 U	7.7 U	11 U	9,000 U	14,000 U	15,000 U	8,700 U	66,000 U	--	--
Cumene	24 U	3.7 U	5.3 U	4,300 U	6,900 U	7,100 U	4,100 U	31,000 U	--	--
1,1,2,2-Tetrachloroethane	6.7 U	1 U	7.4 U	6,000 U	9,700 U	9,900 U	5,800 U	44,000 U	--	--
Propylbenzene	24 U	3.7 U	5.3 U	4,300 U	6,900 U	7,100 U	4,100 U	31,000 U	--	--
4-Ethyltoluene	24 U	3.7 U	5.3 U	4,300 U	6,900 U	7,100 U	4,100 U	31,000 U	--	--
1,3,5-Trimethylbenzene	24 U	3.7 U	5.3 U	4,300 U	6,900 U	7,100 U	4,100 U	31,000 U	--	--
1,2,4-Trimethylbenzene	24 U	3.7 U	5.3 U	4,300 U	6,900 U	7,100 U	4,100 U	31,000 U	--	--
1,3-Dichlorobenzene	29 U	4.5 U	6.5 U	5,300 U	8,500 U	8,600 U	5,000 U	38,000 U	--	--
1,4-Dichlorobenzene	29 U	4.5 U	6.5 U	5,300 U	8,500 U	8,600 U	5,000 U	38,000 U	--	--
alpha-Chlorotoluene	25 U	3.8 U	5.6 U	4,500 U	7,300 U	7,400 U	4,300 U	33,000 U	--	--
1,2-Dichlorobenzene	29 U	4.5 U	6.5 U	5,300 U	8,500 U	8,600 U	5,000 U	38,000 U	--	--
1,2,4-Trichlorobenzene	180 U	28 U	32 U	26,000 U	42,000 U	43,000 U	25,000 U	190,000 U	--	--
Hexachlorobutadiene	260 U	40 U	46 U	37,000 U	60,000 U	61,000 U	36,000 U	270,000 U	--	--

Location	807 North Albina						North Albina, adjacent to 816 North Russell				
Sample ID	B-42	VP-8	VP-8	VP-8	VP-8	VP-8	B-43	VP-9	VP-9	VP-9	VP-9	VP-9
Lab Sample ID		0809503B-19	0903664B-14	0907105AR1-03	1005544C-27A	1008553A-07	0705456-02	0809503B-18	0903664A-06	0907105B-10	1005544C-28A	1008553A-08
Sampler Type		Permanent	Permanent	Permanent	Permanent	Permanent	Temporary	Permanent	Permanent	Permanent	Permanent	Permanent
Depth Interval		3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	2.5 to 3	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5
Date Sampled		9/20/2008	3/20/2009	6/25/2009	5/20/2010	8/20/2010	5/17/2007	9/20/2008	3/20/2009	6/25/2009	5/20/2010	8/20/2010
Volatile Organic Compounds (µg/m3)											
Freon 12	280 U	170 U	99 U	15 U	12 U	--	9.4 U	3.6	17 U	4.6 U	5 U
Freon 114	390 U	240 U	140 U	21 U	17 U	--	13 U	5 U	23 U	6.5 U	7.1 U
Chloromethane	470 U	290 U	170 U	25 U	5.1 U	--	3.9 U	5.9 U	6.9 U	1.9 U	2.1 U
Vinyl Chloride	140 U	90 U	51 U	7.8 U	0.63 U	7.1 U	0.49 U	1.8 U	0.86 U	0.24 U	0.26 U
1,3-Butadiene	120 U	78 U	44 U	6.7 U	5.5 U	--	4.2 U	1.6 U	7.4 U	2.1 U	2.2 U
Bromomethane	220 U	140 U	78 U	12 U	9.6 U	--	7.4 U	2.8 U	65 U	3.6 U	4 U
Chloroethane	150 U	93 U	53 U	8 U	6.5 U	--	5 U	1.9 U	8.9 U	2.5 U	2.7 U
Freon 11	320 U	200 U	110 U	17 U	14 U	--	11 U	4 U	19 U	5.2 U	5.7 U
Ethanol	420 U	260 U	150 U	23 U	23 U	--	18 U	5.4 U	35	8.8 U	9.6 U
Freon 113	430 U	270 U	150 U	23 U	19 U	--	15 U	5.5 U	26 U	7.2 U	7.8 U
1,1-Dichloroethene	910	530	820	12 U	0.98 U	11 U	0.76 U	2.8 U	1.3 U	0.37 U	0.4 U
Acetone	1,900	590	190 U	29 U	29 U	--	35	6.8 U	40 U	34	54
2-Propanol	560 U	340 U	200 U	30 U	30 U	--	23 U	7.1 U	41 U	11 U	12 U
Carbon Disulfide	180 U	110 U	62 U	9.5 U	38 U	--	30 U	3.5	52 U	14 U	54
3-Chloropropene	710 U	440 U	250 U	38 U	39 U	--	--	9 U	52 U	15 U	16 U
Methylene Chloride	200 U	120 U	70 U	10 U	17 U	--	13 U	2.5 U	23 U	6.5 U	7.1 U
Methyl tert-butyl ether	200 U	130 U	72 U	11 U	8.9 U	--	6.9 U	2.6 U	12 U	3.4 U	3.7 U
trans-1,2-Dichloroethene	220 U	140 U	80 U	12 U	9.8 U	11 U	7.6 U	2.8 U	13 U	3.7 U	4 U
Hexane	200 U	120 U	71 U	11 U	8.7 U	--	6.7 U	2.5 U	12 U	3.3 U	3.6 U
1,1-Dichloroethane	230 U	140 U	81 U	12 U	2 U	--	1.5 U	2.9 U	2.7 U	0.76 U	0.82 U
2-Butanone (Methyl Ethyl Ketone)	170 U	100 U	59 U	9 U	7.3 UJ	--	5.6 U	2.1 U	9.9 U	2.8 U	17 J
cis-1,2-Dichloroethene	220 U	140 U	80 U	12 U	2 U	11 U	1.5 U	2.8 U	1.3 U	0.74 U	0.81 U
Tetrahydrofuran	170 U	100 U	59 U	9 U	36 U	--	28 U	2.1 U	50 U	14 U	15 U
Chloroform	280 U	170 U	98 U	15 U	12 U	--	18	14	18	38	20
1,1,1-Trichloroethane	1,900	720 U	1,300	21	3.6	--	50	16	45	2.8	4.6
Cyclohexane	190 U	120 U	69 U	10 U	8.5 U	--	6.6 U	2.5 U	12 U	3.2 U	3.5 U
Carbon Tetrachloride	360 U	220 U	130 U	19 U	16 U	--	12 U	4.5 U	21 U	5.9 U	6.4 U
2,2,4-Trimethylpentane	260 U	160 U	94 U	14 U	58 U	--	--	3.4 U	78 U	22 U	24 U
Benzene	180 U	110 U	64 U	9.7 U	3.9 U	--	3 U	2.3 U	5.4 U	1.5 U	1.6 U
1,2-Dichloroethane	230 U	140 U	81 U	12 U	2 U	--	1.5 U	2.9 U	2.7 U	0.76 U	0.82 U
Heptane	230 U	140 U	82 U	12 U	10 U	--	7.8 U	3 U	14 U	3.8 U	4.2 U
Trichloroethene	9,800	1,900	4,900 U	70	29	15 U	5.5 U	5.9	6.2	1.3	1.1 U
1,2-Dichloropropane	260 U	160 U	93 U	14 U	11 U	--	8.8 U	3.3 U	16 U	4.3 U	4.7 U
1,4-Dioxane	810 U	500 U	290 U	44 U	8.9 U	--	6.9 U	10 U	12 U	3.4 U	5.7
Bromodichloromethane	380 U	240 U	130 U	20 U	16 U	--	13 U	4.8 U	22 U	6.2 U	6.8 U
cis-1,3-Dichloropropene	260 U	160 U	91 U	14 U	11 U	--	8.7 U	3.3 U	15 U	4.2 U	4.6 U
4-Methyl-2-pentanone	230 U	140 U	82 U	12 U	10 U	--	7.8 U	2.9 U	14 U	3.8 U	4.2 U
Toluene	210 U	130 U	76 U	11 U	2.1	--	1.4 U	2.7 U	2.8 U	1.4	0.77 U
trans-1,3-Dichloropropene	260 U	160 U	91 U	14 U	11 U	--	8.7 U	3.3 U	15 U	4.2 U	4.6 U
1,1,2-Trichloroethane	310 U	190 U	110 U	16 U	2.7 U	--	2.1 U	3.9 U	3.7 U	1 U	1.1 U
Tetrachloroethene	180,000	79,000	100,000	5,700	2,500	44	4,500	1,300	3,100	960	1,100
2-Hexanone	920 U	580 U	330 U	50 U	50 UJ	--	39 U	12 U	69 U	19 U	21 UJ
Dibromochloromethane	480 U	300 U	170 U	26 U	21 U	--	16 U	6.1 U	29 U	7.9 U	8.7 U
1,2-Dibromoethane (EDB)	430 U	270 U	150 U	23 U	19 U	--	15 U	5.5 U	26 U	7.2 U	7.8 U
Chlorobenzene	260 U	160 U	92 U	14 U	11 U	--	8.8 U	3.3 U	15 U	4.3 U	4.7 U
Ethyl Benzene	240 U	150 U	87 U	13 U	2.1 U	--	1.6 U	3.1 U	6.3	0.81 U	0.88 U
m,p-Xylene	240 U	150 U	87 U	13 U	4.3 U	--	3.3 U	3.1 U	33	1.6 U	1.8 U
o-Xylene	240 U	150 U	87 U	13 U	2.1 U	--	1.6 U	3.1 U	13	0.81 U	0.88 U
Styrene	240 U	150 U	86 U	13 U	10 U	--	8.1 U	3.1 U	14 U	4 U	4.3 U
Bromoform	580 U	360 U	210 U	31 U	26 U	--	20 U	7.4 U	35 U	9.6 U	10 U
Cumene	280 U	170 U	99 U	15 U	12 U	--	9.4 U	3.5 U	16 U	4.6 U	5 U
1,1,2,2-Tetrachloroethane	390 U	240 U	140 U	21 U	3.4 U	--	2.6 U	4.9 U	4.6 U	1.3 U	1.4 U
Propylbenzene	280 U	170 U	99 U	15 U	12 U	--	9.4 U	3.5 U	16 U	4.6 U	5 U
4-Ethyltoluene	280 U	170 U	99 U	15 U	12 U	--	9.4 U	3.5 U	41	4.6 U	5 U
1,3,5-Trimethylbenzene	280 U	170 U	99 U	15 U	12 U	--	9.4 U	3.5 U	16 U	4.6 U	5 U
1,2,4-Trimethylbenzene	280 U	170 U	99 U	15 U	12 U	--	9.4 U	3.5 U	24	4.6 U	5 U
1,3-Dichlorobenzene	340 U	210 U	120 U	18 U	15 U	--	11 U	4.3 U	20 U	5.6 U	6.1 U
1,4-Dichlorobenzene	340 U	210 U	120 U	18 U	15 U	--	11 U	4.3 U	20 U	5.6 U	6.1 U
alpha-Chlorotoluene	290 U	180 U	100 U	16 U	13 U	--	9.9 U	3.7 U	17 U	4.8 U	5.3 U
1,2-Dichlorobenzene	340 U	210 U	120 U	18 U	15 U	--	11 U	4.3 U	20 U	5.6 U	6.1 U
1,2,4-Trichlorobenzene	1,700 U	1,000 U	600 U	90 U	92 U	--	71 U	21 U	120 U	35 U	38 U
Hexachlorobutadiene	2,400 U	1,500 U	860 U	130 U	130 U	--	100 U	31 U	180 U	50 U	54 U

Location	2503 North Albina					2405 North Albina			
Sample ID	B-44	VP-10	VP-10	VP-10	VP-10	B-45	VP-11	VP-11	VP-11
Lab Sample ID	0705456-03	0809503B-17	0903664A-07	1005544C-29A	1008553A-09	0705456-04	0809503A-05	0903664A-05	907105-09
Sampler Type	Temporary	Permanent	Permanent	Permanent	Permanent	Temporary	Permanent	Permanent	Permanent
Depth Interval	2.5 to 3	3.8-5	3.8-5	3.8-5	3.8-5	2.5 to 3	3.8-5	3.8-5	3.8-5
Date Sampled	5/17/2007	9/20/2008	3/20/2009	5/20/2010	8/20/2010	5/17/2007	9/20/2008	3/20/2009	6/25/2009
Volatile Organic Compounds (µg/m3)									
Freon 12	--	34 U	36 U	13 U	17 U	--	57	47	39 U
Freon 114	--	48 U	51 U	19 U	24 U	--	81	67	55 U
Chloromethane	--	56 U	60 U	5.5 U	7.1 U	--	96	79	65 U
Vinyl Chloride	340 U	17 U	19 U	0.68 U	0.87 U	7.1 U	30	24	20 U
1,3-Butadiene	--	15 U	16 U	5.9 U	7.6 U	--	26	21	17 U
Bromomethane	--	26 U	28 U	10 U	13 U	--	45	37	31 U
Chloroethane	--	18 U	19 U	7.1 U	9 U	--	31 U	25 U	21 U
Freon 11	--	38 U	41 U	15 U	19 U	--	65 U	54 U	44 U
Ethanol	--	51 U	55 U	25 U	32 U	--	87 U	72 U	60 U
Freon 113	--	52 U	56 U	20 U	26 U	--	89 U	74 U	60 U
1,1-Dichloroethene	530 U	180	96	1.1 U	1.4 U	30	46 U	38 U	31 U
Acetone	--	65 U	69 U	32 U	41 U	--	110 U	91 U	75 U
2-Propanol	--	67 U	72 U	33 U	42 U	--	110 U	94 U	78 U
Carbon Disulfide	--	21 U	23 U	42 U	53 U	--	36 U	30 U	25 U
3-Chloropropene	--	85 U	91 U	42 U	54 U	--	140 U	120 U	99 U
Methylene Chloride	--	24 U	25 U	19 U	24 U	--	40 U	33 U	27 U
Methyl tert-butyl ether	--	24 U	26 U	9.7 U	12 U	--	42 U	35 U	28 U
trans-1,2-Dichloroethene	530 U	27 U	29 U	11 U	14 U	11 U	46 U	38 U	31 U
Hexane	--	24 U	26 U	9.4 U	12 U	--	41 U	34 U	28 U
1,1-Dichloroethane	--	28 U	30 U	2.2 U	2.8 U	--	47 U	39 U	32 U
2-Butanone (Methyl Ethyl Ketone)	--	20 U	22 U	7.9 U	10 UJ	--	34 U	28 U	23 U
cis-1,2-Dichloroethene	530 U	27 U	29 U	2.1 U	2.7 U	11 U	46 U	38 U	31 U
Tetrahydrofuran	--	20 U	22 U	40 U	50 U	--	34 U	28 U	23 U
Chloroform	--	33 U	36 U	13 U	17 U	--	57 U	47 U	38 U
1,1,1-Trichloroethane	--	330	240	15	19	--	300	170	230
Cyclohexane	--	23 U	25 U	9.2 U	12 U	--	40 U	33 U	27 U
Carbon Tetrachloride	--	43 U	46 U	17 U	22 U	--	73 U	60 U	50 U
2,2,4-Trimethylpentane	--	32 U	34 U	62 U	80 U	--	54 U	45 U	37 U
Benzene	--	22 U	23 U	4.3 U	5.5 U	--	37 U	31 U	25 U
1,2-Dichloroethane	--	28 U	30 U	2.2 U	2.8 U	--	47 U	39 U	32 U
Heptane	--	28 U	30 U	11 U	14 U	--	48 U	39 U	32 U
Trichloroethene	720 U	1,600	980	48	38	1,400	2,200	1,200	1,900
1,2-Dichloropropane	--	31 U	34 U	12 U	16 U	--	54 U	44 U	36 U
1,4-Dioxane	--	98 U	100 U	9.6 U	12 U	--	170 U	140 U	110 U
Bromodichloromethane	--	46 U	49 U	18 U	23 U	--	78 U	64 U	53 U
cis-1,3-Dichloropropene	--	31 U	33 U	12 U	16 U	--	53 U	44 U	36 U
4-Methyl-2-pentanone	--	28 U	30 U	11 U	14 U	--	48 U	39 U	32 U
Toluene	--	26 U	28 U	2 U	2.6 U	--	44 U	36 U	30 U
trans-1,3-Dichloropropene	--	31 U	33 U	12 U	16 U	--	53 U	44 U	36 U
1,1,2-Trichloroethane	--	37 U	40 U	2.9 U	3.7 U	--	63 U	52 U	43 U
Tetrachloroethene	910 U	27,000	18,000	2,600	2,900	6,000	24,000	19,000	23,000
2-Hexanone	--	110 U	120 U	55 U	70 UJ	--	190 U	160 U	130 U
Dibromochloromethane	--	58 U	62 U	23 U	29 U	--	99 U	82 U	67 U
1,2-Dibromoethane (EDB)	--	52 U	56 U	20 U	26 U	--	89 U	74 U	61 U
Chlorobenzene	--	31 U	34 U	12 U	16 U	--	53 U	44 U	36 U
Ethyl Benzene	--	30 U	32 U	2.3 U	3 U	--	50 U	42 U	34 U
m,p-Xylene	--	30 U	32 U	4.6 U	5.9 U	--	50 U	42 U	34 U
o-Xylene	--	30 U	32 U	2.3 U	3 U	--	50 U	42 U	34 U
Styrene	--	29 U	31 U	11 U	14 U	--	49 U	41 U	34 U
Bromoform	--	70 U	75 U	28 U	35 U	--	120 U	99 U	82 U
Cumene	--	33 U	36 U	13 U	17 U	--	57 U	47 U	39 U
1,1,2,2-Tetrachloroethane	--	47 U	50 U	3.7 U	4.7 U	--	80 U	66 U	54 U
Propylbenzene	--	33 U	36 U	13 U	17 U	--	57 U	47 U	39 U
4-Ethyltoluene	--	33 U	36 U	13 U	17 U	--	57 U	47 U	39 U
1,3,5-Trimethylbenzene	--	33 U	36 U	13 U	17 U	--	57 U	47 U	39 U
1,2,4-Trimethylbenzene	--	33 U	36 U	13 U	17 U	--	57 U	47 U	39 U
1,3-Dichlorobenzene	--	41 U	44 U	16 U	20 U	--	70 U	58 U	48 U
1,4-Dichlorobenzene	--	41 U	44 U	16 U	20 U	--	70 U	58 U	48 U
alpha-Chlorotoluene	--	35 U	38 U	14 U	18 U	--	60 U	50 U	41 U
1,2-Dichlorobenzene	--	41 U	44 U	16 U	20 U	--	70 U	58 U	47 U
1,2,4-Trichlorobenzene	--	200 U	220 U	99 U	130 U	--	340 U	280 U	230 U
Hexachlorobutadiene	--	290 U	310 U	140 U	180 U	--	490 U	410 U	340 U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15.
2. $\mu g/m^3$ = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the CCV.
7. Shaded cells highlight detected concentrations of listed analyte.

Table 7
Soil Vapor Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2405 North Albina		Corner North Albina & North Page				700 Block North Russell			Corner Interstate and Mississipi		2400 Block North Borthwick		2624 North Borthwick		2400 Block North Borthwick		2600 Block North Mississippi		Corner Miss./Albina				2400 Block Mississippi				2400 Block North Borthwick		2600 Block North Albina	
Sample ID	VP-11	VP-11	VP-12	VP-12	VP-12	VP-12	B-40	VP-13	VP-13	VP-18	VP-18	VP-19	VP-19	VP-20	VP-20	VP-21	VP-21	VP-22	VP-22	B-54	B-39	VP-23	VP-23	B-41	VP-24	VP-24	VP-25	VP-25	VP-25	VP-26	VP-26
Lab Sample ID	1005544C-30A	1008553A-10	0809503A-03	0903664B-15	1005544D-31A	1008553B-11	0705457-02	1005544D-32A	1008553B-12	1005544D-34A	1008553B-14	1005544D-35A	1008553B-15	1005544D-36A	1008553B-16	1005544D-37A	1008553B-17	1005544D-38A	1008553B-18	0809137-01	0705457-01	1005544D-39A	1008553B-19	0705457-03	1005544D-40A	1008553B-20	1005544E-41A	1008553C-21	1005544E-42A	1008553C-22
Sampler Type	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Temporary	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Temporary	Temporary	Permanent	Permanent	Temporary	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
Depth Interval	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	2.5 to 3	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	19-20	2.5 to 3	3.8-5	3.8-5	2.5 to 3	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5
Date Sampled	5/20/2010	8/20/2010	9/20/2008	3/20/2009	5/20/2010	8/20/2010	5/16/2007	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	09/03/2008	5/16/2007	5/20/2010	8/20/2010	5/17/2007	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010
Volatile Organic Compounds (µg/m3)																															
Freon 12	28 U	26 U	4.8	2.1	2.2	3.8 U	--	6.9 U	15 U	2.7	3.0	3	2.6	3	2.9	6.5 U	9.8 U	3.5	2.6	8.2	--	3.9	2.7	--	6 U	9.2 U	2.3	2.7	2.4	2.4
Freon 114	40 U	38 U	2 U	1 U	1.1 U	5.4 U	--	9.7 U	21 U	1.6 U	1.1 U	1.5 U	1.1 U	1.1 U	1.1 U	9.2 U	14 U	1.2 U	1.1 U	2.2 U	--	1.1 U	1 U	--	8.5 U	13 U	1.1 U	1 U	0.98 U	1.2 U
Chloromethane	47 U	44 U	0.6 U	0.3 U	0.34 U	6.4 U	--	11 U	25 U	0.47 U	0.31 U	0.45 U	0.59	1.6	1.4	11 U	16 U	0.35 U	1.1	0.64 U	--	0.32 U	1.6	--	10 U	15 U	0.34 U	0.3 U	0.29 U	0.35 U
Vinyl Chloride	14 U	14 U	0.075 U	0.037 U	0.042 U	2 U	360 U	3.6 U	7.8 U	0.058 U	0.13 U	0.056 U	0.2 U	0.041 U	0.04 U	3.3 U	5 U	0.11	0.04 U	0.079 U	370 U	0.04 U	0.037 U	370 U	3.1 U	4.8 U	0.042 U	0.12 U	0.036 U	0.048 U
1,3-Butadiene	13 U	12 U	0.64 U	0.32 U	0.36 U	1.7 U	--	3.1 U	6.7 U	0.51 U	0.34 U	0.48 U	0.35 U	0.36 U	0.34 U	2.9 U	4.4 U	0.74	0.35 U	0.68 U	--	0.34 U	0.32 U	--	2.7 U	4.1 U	0.36 U	0.32 U	0.31 U	0.38 U
Bromomethane	22 U	21 U	1.1 U	0.57 U	0.64 U	3 U	--	5.4 U	12 U	0.89 U	0.59 U	0.85 U	0.61 U	0.62 U	0.6 U	5.1 U	7.7 U	0.65 U	0.61 U	1.2 U	--	0.6 U	2.9	--	4.7 U	7.2 U	0.64 U	0.57 U	0.55 U	0.66 U
Chloroethane	15 U	14 U	0.77 U	0.38 U	0.43 U	2 U	--	3.7 U	8 U	0.6 U	0.4 U	0.58 U	0.42 U	0.42 U	0.41 U	3.4 U	5.2 U	0.44 U	0.42 U	0.82 U	--	0.41 U	0.38 U	--	3.2 U	4.9 U	0.43 U	0.38 U	0.37 U	0.45 U
Freon 11	32 U	30 U	2.9	1.8	1.8	4.4 U	--	7.8 U	17 U	2.4	3.4	2.2	2.2	2	2.1	7.4 U	11 U	1.8	1.2	3.1	--	2.5	1.8	--	6.8 U	10 U	1.4	2.1	1.2	1.6
Ethanol	43 U	40 U	8.8	3 J	1.5 U	5.8 U	--	11	23 U	3.5	13	2.1 U	1.5 U	3.6	9.7	9.9 U	15 U	18	4.1	12	--	1.5 U	7.3	--	9.2 U	14 U	1.5 UJ	1.4 U	1.3 UJ	1.9
Freon 113	44 U	41 U	2.2 U	1.1 U	1.2 U	5.9 U	--	11 U	23 U	1.8 U	1.2 U	1.7 U	1.2 U	1.2 U	1.2 U	10 U	15 U	1.3 U	1.2 U	11	--	1.2 U	1.1 U	--	9.4 U	14 U	1.2 U	1.1 U	1.1 U	1.6
1,1-Dichloroethene	23 U	21 U	0.12 U	0.058 U	0.065 U	3.1 U	550 U	5.5 U	12 U	0.091 U	0.2 U	0.087 U	0.31 U	0.064 U	0.061 U	5.2 U	7.8 U	1.1	0.063 U	33	570 U	0.061 U	0.058 U	570 U	4.8 U	7.4 U	0.065 U	0.19 U	0.056 U	0.075 U
Acetone	82	58	1,900 E	16	3.5	19	--	13 U	29 U	7.8	20	3	7.6	14	9.5	12 U	19 U	17	8.5	42	--	4.4	22	--	12 U	18 U	8.2	12	8.6	23
2-Propanol	56 U	53 U	350 E	7.3	3	7.6 U	--	39	30 U	2.8 U	1.9 U	2.7 U	1.9 U	20	1.9 U	13 U	19 U	6.3	2.4	3.8 U	--	1.9 U	2.1	--	12 U	18 U	2 UJ	1.8 U	1.7 UJ	2.1 U
Carbon Disulfide	18 U	17 U	8	8.1	2.6 U	2.4 U	--	8.6	9.5 U	3.6 U	2.4 U	3.4 U	2.5 U	2.5 U	2.4 U	4.1 U	6.2 U	12	2.5 U	4.8 U	--	2.4 U	3.7	--	3.8 U	5.8 U	2.6 U	2.3 U	2.2 U	2.7 U
3-Chloropropene	71 U	67 U	--	2.3 U	2.6 U	9.7 U	--	17 U	38 U	3.6 U	2.4 U	3.4 U	2.5 U	2.5 U	2.4 U	16 U	25 U	2.6 U	2.5 U	--	--	2.4 U	2.3 U	--	15 U	23 U	2.6 U	2.3 U	2.2 U	2.7 U
Methylene Chloride	20 U	19 U	2 U	1 U	1.1 U	2.7 U	--	30	10 U	1.6 U	1 U	1.5 U	1.1 U	1.1 U	1.2	4.6 U	6.9 U	5.2	1.2	6.6	--	1.1 U	1.7	--	4.2 U	6.5 U	1.1 U	3.4	0.98 U	1.2 U
Methyl tert-butyl ether	20 U	19 U	1 U	0.53 U	0.59 U	2.8 U	--	5 U	11 U	0.82 U	1.8 U	0.79 U	2.8 U	0.58 U	0.56 U	4.7 U	7.1 U	0.6 U	0.57 U	1.1 U	--	0.56 U	0.53 U	--	4.4 U	6.7 U	0.59 U	1.8 U	0.51 U	0.68 U
trans-1,2-Dichloroethene	22 U	21 U	1.2 U	0.58 U	0.65 U	3.1 U	550 U	5.5 U	12 U	0.91 U	2 U	0.87 U	3.1 U	0.64 U	0.61 U	5.2 U	7.8 U	0.67 U	0.63 U	1.2 U	570 U	0.61 U	0.58 U	570 U	4.8 U	7.4 U	0.65 U	1.9 U	0.56 U	0.75 U
Hexane	20 U	19 U	1 U	0.51 U	0.58 U	2.7 U	--	4.9 U	11 U	0.81 U	0.54 U	0.77 U	0.56 U	0.57 U	0.55 U	4.6 U	7 U	1.3	0.56 U	4.2	--	0.55 U	0.51 U	--	4.3 U	6.6 U	0.58 U	0.51 U	0.5 U	0.6 U
1,1-Dichloroethane	23 U	22 U	0.24 U	0.12 U	0.13 U	3.1 U	--	5.6 U	12 U	0.18 U	0.41 U	0.18 U	0.64 U	0.13 U	0.12 U	5.3 U	8 U	0.22	0.13 U	2.5	--	0.12 U	0.12 U	--	4.9 U	7.5 U	0.13 U	0.39 U	0.11 U	0.15 U
2-Butanone (Methyl Ethyl Ketone)	17 U	16 U	2.9 U	1.6	0.48 U	3.9	--	4.1 U	9 U	1.2	2.8	0.64 U	2.3 U	2.7	2.3 U	3.9 U	5.8 U	4.4	2.3 U	32	--	0.83	3.3	--	3.6 U	5.5 U	0.94	2.2 U	1.5	3.8
cis-1,2-Dichloroethene	22 U	21 U	0.23 U	0.12 U	0.13 U	3.1 U	550 U	5.5 U	12 U	0.18 U	0.4 U	0.17 U	0.63 U	0.13 U	0.12 U	5.2 U	7.8 U	0.13 U	0.12 U	0.28	570 U	0.12 U	0.12 U	570 U	4.8 U	7.4 U	0.13 U	0.39 U	0.11 U	0.15 U
Tetrahydrofuran	17 U	16 U	4.3 U	2.2 U	2.4 U	2.3 U	--	4.1 U	9 U	3.4 U	2.2 U	3.2 U	2.3 U	2.4 U	2.3 U	3.9 U	5.8 U	2.5 U	2.3 U	22	--	2.3 U	2.2 U	--	3.6 U	5.5 U	2.4 U	2.2 U	2.1 U	2.5 U
Chloroform	28 U	26 U	12 U	0.71 U	7.6	10	--	6.8 U	15 U	1.2	0.74 U	2.2	0.9	0.79 U	0.76 U	6.4 U	9.6 U	2.6	0.77 U	560	--	22	0.71 U	--	15	18	2.4	0.71 U	2.6	0.83 U
1,1,1-Trichloroethane	98	54	2.4 U	0.31	1.3	4.2 U	--	16	28	5.4	5.3	8.8	18	0.18 U	0.17 U	13	14	12	0.28	83	--	3.1	0.16 U	--	94	94	2.3	4.2	20	89
Cyclohexane	20 U	18 U	1 U	0.5 U	0.56 U	2.7 U	--	4.8 U	10 U	0.79 U	0.52 U	0.75 U	0.54 U	0.55 U	0.53 U	4.5 U	6.8 U	1.7	0.54 U	3.2	--	0.53 U	0.5 U	--	4.2 U	6.4 U	0.56 U	0.5 U	0.48 U	0.59 U
Carbon Tetrachloride	36 U	34 U	1.8 U	0.92 U	1 U	4.9 U	--	8.7 U	19 U	1.4 U	0.96 U	1.4 U	0.99 U	1 U	0.98 U	8.2 U	12 U	1 U	0.99 U	2 U	--	0.98 U	0.92 U	--	7.7 U	12 U	1 U	0.92 U	0.89 U	1.1 U
2,2,4-Trimethylpentane	27 U	25 U	--	3.4 U	3.8 U	3.6 U	--	6.5 U	14 U	5.3 U	3.6 U	5.1 U	3.7 U	3.8 U	3.6 U	6.1 U	9.2 U	3.9 U	3.7 U	--	--	3.6 U	3.4 U	--	5.7 U	8.7 U	3.8 U	3.4 U	3.3 U	4 U
Benzene	18 U	17 U	0.47 U	0.23 U	0.26 U	2.5 U	--	4.4 U	9.7 U	0.36 U	0.81 U	0.35 U	1.3 U	0.62	0.35	4.2 U	6.3 U	1.2	0.53	2.8	--	0.25 U	0.48	--	3.9 U	5.9 U	0.26 U	0.78 U	0.22 U	0.3 U
1,2-Dichloroethane	23 U	22 U	0.24 U	0.12 U	0.13 U	3.1 U	--	5.6 U	12 U	0.18 U	0.41 U	0.18 U	0.64 U	0.13 U	0.12 U	5.3 U	8 U	0.14 U	0.13 U	0.25 U	--	0.12 U	0.12 U	--	4.9 U	7.5 U	0.13 U	0.39 U	0.11 U	0.15 U
Heptane	23 U	22 U	1.2 U	0.6 U	0.67 U	3.2 U	--	5.7 U	12 U	0.94 U	0.62 U	0.9 U	0.65 U	0.66 U	0.64 U	5.4 U	8.1 U	0.95	0.65 U	7.5	--	0.64 U	0.61	--	5 U	7.6 U	0.67 U	0.6 U	0.58 U	0.7 U
Trichloroethene	1,200	960	0.31 U	0.16 U	0.18 U	4.2 U	750 U	88	150	0.82	0.77	8.2	17	0.17 U	0.17 U	16	14	81	0.95	100	770 U	0.17 U	0.16 U	770 U	770	940	0.42	0.52 U	2.2	4.0
1,2-Dichloropropane	26 U	25 U	1.3 U	0.67 U	0.76 U	3.6 U	--	6.4 U	14 U	0.82 U	0.7 U	1 U	0.73 U	0.74 U	0.72 U	6 U	9.1 U	0.78 U	0.73 U	1.4 U	--	0.72 U	0.67 U	--	5.6 U	8.6 U	0.76 U	0.67 U	0.65 U	0.79 U
1,4-Dioxane	82 U	77 U	1 U	0.53 U	0.59 U	11 U	--	20 U	44 U	0.82 U	0.55 U	0.79 U	0.57 U	0.58 U	0.58	19 U	28 U	0.6 U	0.57 U	1.1 U	--	0.56 U	0.53 U	--	18 U	27 U	0.59 U	0.53 U	0.51 U	0.74
Bromodichloromethane	38 U	36 U	2 U	0.98 U	1.1 U	5.2 U	--	9.3 U	20 U	1.5 U	1 U	1.5 U	1.0 U	1.1 U	1	8.8 U	13 U	1.1 U	1 U	4.9	--	1 U	0.98 U	--	8.2 U	12 U	1 U	0.98 U	0.94 U	1.1 U
cis-1,3-Dichloropropene	26 U	24 U	1.3 U	0.66 U	0.74 U	3.5 U	--	6.3 U	14 U	1 U	0.69 U	0.99 U	0.72 U	0.73 U	0.7 U	5.9 U	9 U	0.76 U	0.72 U	1.4 U	--	0.7 U	0.66 U	--	5.5 U	8.4 U	0.74 U	0.66 U	0.64 U	0.78 U
4-Methyl-2-pentanone	23 U	22 U	1.2 U	0.71 U	0.67 U	3.2 U	--	5.7 U	12 U	0.94 U	0.62 U	0.9 U	0.65 U	0.69	0.63 U	5.4 U	8.1 U	0.69 U	0.65 U	2.8	--	0.63 U	0.6 U	--	5 U	7.6 U	0.67 U	0.6 U	0.58 U	0.7 U
Toluene	21 U	20 U	4.7	0.38 U	0.36	2.9 U	--	180	11 U	0.88	0.38 U	0.84	0.60	2.5	0.91	4.9 U	7.4 U	9.7	1.2	13	--	0.61	1.7	--	4.6 U	7 U	0.31	0.37 U	1.2	0.37
trans-1,3-Dichloropropene	26 U	24 U	1.3 U	0.66 U	0.74 U	3.5 U	--	6.3 U	14 U	1 U	0.69 U	0.99 U	0.72 U	0.73 U	0.7 U	5.9 U	9 U	0.76 U	0.72 U	1.4 U	--	0.7 U	0.66 U	--	5.5 U	8.4 U	0.74 U	0.66 U	0.64 U	0.78 U
1,1,2-Trichloroethane	31 U	29 U	0.32 U	0.16 U	0.18 U	4.2 U	--	7.6 U	16 U	0.25 U	0.55 U	0.24 U	0.86 U	0.18 U	0.17 U	7.1 U	11 U	0.18 U	0.17 U	0.34 U	--	0.17 U	0.16 U	--	6.6 U	10 U	0.18 U	0.53 U	0.15 U	0.21 U
Tetrachloroethene	13,000	14,000	150	11 U	60	140	940 U	3,300	6,900	290	460	550	890	8.7	21	3,500	4,000	150	3.9	540	980 U	89	0.94	980 U	3,200	4,000	330	670	110	180
2-Hexanone	93 U	88 U	6 U	3 U	3.4 U	13 U	--	23 U	50 U	4.7 U	3.1 U	4.5 U	3.2 U	3.3 U	3.2 U	21 U	32 U	3.4 U	3.2 U	6.3 U	--	3.2 U	3 U	--	20 U	30 U	3.4 U	3 U	2.9 U	3.5 U
Dibromochloromethane	48 U	46 U	2.5 U	1.2 U	1.4 U	6.6 U	--	12 U	26 U	2 U	1.3 U	1.9 U	1.3 U	1.4 U	1.3 U	11 U	17 U	1.4 U	1.3 U	2.6 U	--	1.3 U	1.2 U	--	10 U	16 U	1.4 U	1.2 U	1.2 U	1.4 U
1,2-Dibromoethane (EDB)	44 U	41 U	2.2 U	1.1 U	1.3 U	6 U	--	11 U	23 U	1.8 U	1.2 U	1.7 U	1.2 U	1.2 U	1.2 U	10 U	15 U	1.3 U	1.2 U	2.4 U	--	1.2 U	1.1 U	--	9.4 U	14 U	1.3 U	1.1 U	1.1 U	1.3 U
Chlorobenzene	26 U	25 U	1.3 U	0.67 U	0.76 U	3.6 U	--	6.4 U	14 U	1 U	0.7 U	1 U	0.73 U	0.74 U	0.71 U	6 U	9.1 U	0.77 U	0.73 U	1.4 U	--	0.71 U	0.67 U	--	5.6 U	8.6 U	0.76 U	0.67 U	0.65 U	0.79 U
Ethyl Benzene	25 U	23 U	0.25 U	0.13 U	0.14 U	3.4 U	--	6 U	13 U	1	0.44 U	2.3	0.69 U	1.7	0.26	5.7 U	8.6 U	1	0.24	7	--	2.6	1.2	--	5.3 U	8.1 U	1.1	1.1	0.54	0.25
m,p-Xylene	25 U	23 U	0.51 U	0.25 U	0.28 U	3.4 U	--	6 U	13 U	3.6	0.88 U	7.8	1.4 U	5.8	0.74	5.7 U	8.6 U	3.4	0.59	22	--	8.6	4.2	--	5.3 U	8.1 U	3.2	2.6	1.6	0.69
o-Xylene	25 U	23 U	0.25 U	0.13 U	0.14 U	3.4 U	--	6 U	13 U	1.2	0.44 U	2.2	0.69 U	1.8	0.25	5.7 U	8.6 U	1.2	0.19	9.5	--	2.1	1.3	--	5.3 U	8.1 U	0.67	1.1	0.44	0.24
Styrene	24 U	23 U	1.2 U	0.62 U	0.7 U	3.3 U	--	5.9 U	13 U	0.98 U	0.65 U	0.93 U	0.83	0.68 U	0.66 U	5.6 U	8.4 U	0.72 U	0.67 U	2.3	--	0.66 U	0.62 U	--	5.2 U	7.9 U	0.7 U	0.62 U	0.6 U	0.73 U
Bromoform	59 U	55 U	3 U	1.5 U	1.7 U	8 U	--	14 U	31 U	2.4 U	1.6 U	2.3 U	1.6 U	1.7 U	1.6 U	14 U	20 U	1.7 U	1.6 U	3.2 U	--	1.6 U	1.5 U	--	13 U	19 U	1.7 U	1.5 U	1.4 U	1.8 U
Cumene	28 U	26 U	1.4 U	0.72 U	0.81 U	3.8 U	--	6.8 U	15 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	0.82 U	0.78 U	1.5 U	--	0.76 U	0.72 U	--	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U
1,1,2,2-Tetrachloroethane	39 U	37 U	0.4 U	0.2 U	0.22 U	5.3 U	--	9.5 U	21 U	0.31 U	0.7 U	0.3 U	1.1 U	0.22 U	0.21 U	9 U	14 U	0.23 U	0.22 U	0.42 U	--	0.21 U	0.2 U	--	8.4 U	13 U	0.22 U	0.67 U	0.19 U	0.26 U
Propylbenzene	28 U	26 U	1.4 U	0.72 U	0.81 U	3.8 U	--	6.8 U	15 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	0.82 U	0.78 U	2	--	0.76 U	0.72 U	--	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U
4-Ethyltoluene	28 U	26 U	1.4 U	0.72 U	0.81 U	3.8 U	--	6.8 U	15 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	1.1	0.78 U	7.3	--	0.76 U	0.72 U	--	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U
1,3,5-Trimethylbenzene	28 U	26 U	1.4 U	0.72 U	0.81 U	3.8 U	--	6.8 U	15 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	0.82 U	0.78 U	2.3	--	0.76 U	0.72 U	--	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U
1,2,4-Trimethylbenzene	28 U	26 U	1.4 U	0.72 U	0.81 U	3.8 U	--	6.8 U	15 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	1.1	0.78	7.6 U	--	0.76 U	0.74	--	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U
1,3-Dichlorobenzene	34 U	32 U	1.8 U	0.88 U	0.99 U	4.6 U	--	8.4 U	18 U	1.4 U	0.91 U	1.3 U	0.95 U	0.97 U	0.93 U	7.9 U	12 U	1 U	0.95 U	1.9 U	--	0.93 U	0.88 U	--	7.3 U	11 U	0.99 U	0.88 U	0.85 U	1 U
1,4-Dichlorobenzene	34 U	32 U	1.8 U	0.88 U	0.99 U	4.6 U	--	8.4 U	18 U	1.4 U	0.91 U	1.3 U	0.95 U	0.97 U	0.93 U	7.9 U	12 U	1 U	0.95 U	1.9 U	--	0.93 U	0.88 U	--	7.3 U	11 U	0.99 U	0.88 U	0.85 U	1 U
alpha-Chlorotoluene	30 U	28 U	1.5 U	0.76 U	0.85 UJ	4 U	--	7.2 U	16 U	1.2 U	0.79 U	1.1 U	1.6	0.83 U	0.8 U	6.8 U	10 U	0.87 U	0.82 U	1.6 U	--	0.8 U	0.76 U	--	6.3 U	9.6 U	0.85 U	0.76 U	0.73 U	0.88 U
1,2-Dichlorobenzene	34 U	32 U	1.8 U	0.88 U	0.99 U	4.6 U	--	8.4 U	18 U	1.4 U	0.91 U	1.3 U	0.95 U	0.97 U	0.93 U	7.9 U	12 U	1 U	0.95 U	1.9 U	--	0.93 U	0.88 U	--	7.3 U	11 U	0.99 U	0.88 U	0.85 U	1 U
1,2,4-Trichlorobenzene	170 U	160 U	11 U	5.4 U	6.1 U	23 U	--	41 U	90 U	8.5 U	5.6 U	8.1 U	5.9 U	6 U	5.8 U	39 U	59 U	6.2 U	5.9 U	12 U	--	5.8 U	5.4 U	--	36 U	55 U	6.1 U	5.4 U	5.2 U	6.3 U
Hexachlorobutadiene	240 U	230 U	16 U	7.8 U	8.7 U	33 U	--	59 U	130 U	12 U	8.1 U	12 U	8.4 U	8.6 U	8.3 U	56 U	84 U	9 U	8.4 U	16 U	--	8.3 U	7.8 U	--	52 U	79 U	8.7 U	7.8 U	7.5 U	9.1 U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15.
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the CCV.
7. Shaded cells highlight detected concentrations of listed analyte.

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick	2429 N. Borthwick	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick	2429 N. Borthwick	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.
	Office	Office	Office	Office	North Office	North Office	North Office	North Office	North Office	Reception	Reception	Reception	South Office	South Office	Warehouse	Warehouse	Warehouse
Sample ID	VP-1A	VP-1A	VP-1A	VP-1A	North Office	North Office	North Office	2429-NO-A	2429-NO-A	South Office	South Office	South Office	2429-SO-A	2429-SO-A	VP-2A	VP-2A	VP-2A
Lab Sample ID	0809503A-01	0903664B-24	1005544A-03	1008553D-37	0906577-02	0907457-02	1005544B-19	1005544B-19	1008553D-35	0906577-01	090745701-01	1005544B-20	1005544B-20	1008553D-36	0809503B-14	0903664B-23	0906577-03
Date Sampled	9/20/2008	3/21/2009	5/20/2010	8/20/2010	6/20/2009	7/18/2009	1/30/2010	5/20/2010	8/20/2010	6/20/2009	7/18/2009	1/30/2010	5/20/2010	8/20/2010	9/20/2008	3/21/2009	6/20/2009
Volatile Organic Compounds (µg/m3)																	
Freon 12	2.4	2.6	3.3 U	2.2	2.5	2.2	4 U	2.1 U	2.2	2.3	2.2	2.1 U	2.6 U	2.2	2.5	2.6	2.3
Freon 114	0.98 U	1.7 U	4.7 U	1.1 U	1.5 U	1.2 U	5.6 U	3 U	1.1 U	1.3 U	1.1 U	2.9 U	3.8 U	1.1 U	0.94 U	2.6 U	2.8 U
Chloromethane	0.76	1.5	1.4 U	1.1	1.2	0.84	1.7 U	1.1	0.93	1	1.6	0.94	1.1 U	1	1.4	1.4	1.1
Vinyl Chloride	0.036 U	0.062 U	0.17 U	0.04 U	0.055 U	0.046 U	0.2 U	0.11 U	0.041 U	0.048 U	0.04 U	0.11 U	0.14 U	0.042 U	0.034 U	0.097 U	0.1 U
1,3-Butadiene	0.31 U	0.54 U	1.5 U	0.35 U	0.47 U	0.4 U	1.8 U	0.95 U	0.36 U	0.42 U	0.35 U	0.093 U	1.2 U	0.36 U	0.3 U	0.84 U	0.89 U
Bromomethane	1	0.94 U	2.6 U	0.61 U	0.83 U	0.7 U	3.1 U	1.7 U	0.62 U	0.74 U	0.61 U	1.6 U	2.1 U	0.64 U	0.52 U	1.5 U	1.6 U
Chloroethane	0.37 U	0.64 U	1.8 U	0.42 U	0.56 U	0.47 U	2.1 U	1.1 U	0.42 U	0.5 U	0.42 U	1.1 U	1.4 U	0.43 U	0.35 U	1 U	1.1 U
Freon 11	1.2	1.4 U	3.8 U	1	1.4	1.3	4.5 U	2.4 U	1.1	1.6	1.3	2.4 U	3 U	1.1	2.6	2.1 U	2.2 U
Ethanol	110 E	160	480 J	320 E	120	19	160	480 E	280 E	120	22	160	460 E	290 E	130 E	260	160
Freon 113	1.1	1.9	5.1 U	1.2 U	1.6 U	1.4 U	6.2 U	3.3 U	1.2 U	1.4 U	1.2 U	3.2 U	4.1 U	1.2 U	1 U	2.9 U	3.1 U
1,1-Dichloroethene	0.056	0.12	0.27 U	0.063 U	0.085 U	0.071 U	0.32 U	0.17 U	0.064 U	0.075 U	0.063 U	0.17 U	0.21 U	0.065 U	0.053 U	0.15 U	0.16 U
Acetone	150 E	170	490	160 E	190	44	120	450 E	170 E	170	46	130	440	170 E	210 E	180	400 E
2-Propanol	150 E	410 E	1,400 E, J	170 E	130	19	84	1,200 E	180 E	140	26	73	1,200 E	180 E	190 E	440 E	250
Carbon Disulfide	2.2 U	3.8 U	10 U	2.5 U	3.3 U	2.8 U	12 U	6.7 U	2.5 U	3 U	2.5 U	6.5 U	8.4 U	2.6 U	2.1 U	5.9 U	6.2 U
3-Chloropropene	--	3.8 U	10 U	2.5 U	3.3 U	2.8 U	12 U	6.7 U	2.5 U	3 U	2.5 U	6.6 U	8.4 U	2.6 U	--	5.9 U	6.3 U
Methylene Chloride	2.4	8.6	4.7 U	1.1 U	1.5 U	1.2 U	5.6 U	3.2	1.10 U	1.3 U	1.1 U	3.7 J	3.7 U	1.1 U	2.6	19	2.8 U
Methyl tert-butyl ether	0.51 U	0.88 U	2.4 UJ	0.57 U	0.77 U	0.64 U	2.9 U	1.6 U	0.58 U	0.68 U	0.57 U	1.5 U	1.9 U	0.59 U	0.48 U	1.4 U	1.4 U
trans-1,2-Dichloroethene	0.56 U	0.96 U	2.7 U	0.63 U	0.85 U	0.71 U	3.2 U	1.7 U	0.64 U	0.75 U	0.63 U	1.7 U	2.1 U	0.65 U	0.53 U	1.5 U	1.6 U
Hexane	11	16	5.6	5	17	0.74	8.8	6.4	4.30	17	0.99	7.2	6	4.6	22	19	54
1,1-Dichloroethane	0.11 U	0.2 U	0.54 U	0.13 U	0.17 U	0.14 U	0.65 U	0.35 U	0.13 U	0.15 U	0.13 U	0.34 U	0.43 U	0.13 U	0.11 U	0.31 U	0.32 U
2-Butanone (Methyl Ethyl Ketone)	17	24	170	36	37	3.8	14	150	38	33	4.9	16	160	34	38	12	75
cis-1,2-Dichloroethene	0.11 U	0.5	0.53 U	0.12 U	0.26	0.14 U	0.64 U	0.34 U	0.13 U	0.26	0.12 U	0.33 U	0.42 U	0.13 U	0.11 U	0.3 U	0.32 U
Tetrahydrofuran	2.1 U	3.6 U	9.9 U	2.3 U	3.2 U	2.6 U	12 U	6.4 U	2.4 U	2.8 U	2.3 U	6.2 U	7.9 U	2.4 U	2 U	5.6 U	5.9 U
Chloroform	0.69 U	1.2 U	3.3 U	0.77 U	1 U	0.87 U	3.9 U	2.1 U	0.79 U	0.93 U	0.77 U	2 U	2.6 U	0.8 U	0.65 U	1.8 U	2 U
1,1,1-Trichloroethane	0.15 U	0.51	0.73 U	0.17 U	0.29	0.2 U	0.88 U	0.47 U	0.18 U	0.32	0.17 U	0.46 U	0.59 U	0.18 U	0.15 U	0.41 U	0.44 U
Cyclohexane	2.3	3	15	3.6	5.8	0.62 U	2.8 U	16	3	5.8	0.54 U	1.8	14	3.7	4.6	4.2	12
Carbon Tetrachloride	0.89 U	1.5 U	4.2 U	0.99 U	1.3 U	1.1 U	5.1 U	2.7 U	1 U	1.2 U	0.99 U	2.6 U	3.4 U	1 U	0.84 U	2.4 U	2.5 U
2,2,4-Trimethylpentane	--	5.7 U	16 U	3.7 U	5 U	4.2 U	19 U	10 U	3.8 U	4.4 U	3.7 U	9.8 U	12 U	3.8 U	--	8.9 U	9.4 U
Benzene	0.54	0.92	1.1 U	0.9	1.2	0.46	1.3 U	0.89	0.89	1.1	0.94	0.98	0.92	0.9	0.58	0.9	0.93
1,2-Dichloroethane	0.11 U	0.2 U	0.54 U	0.13 U	0.17 U	0.14 U	0.65 U	0.35 U	0.13 U	0.15 U	0.13 U	0.34 U	0.43 U	0.13 U	0.11 U	0.31 U	0.32 U
Heptane	8.3	23	20	14	9.8	1.1	9.8	20	12	10	1.1	9.1	20	16	33 J	46	27
Trichloroethene	0.79	3.6	0.72 U	0.17 U	1.8	0.19 U	0.86 U	0.46 U	0.17 U	2.0	0.17 U	0.45 U	0.58 U	0.18 U	0.81	1.5	0.61
1,2-Dichloropropane	0.65 U	1.1 U	3.1 U	0.73 U	0.99 U	0.83 U	3.7 U	2 U	0.74 U	0.88 U	0.73 U	1.9 U	2.5 U	0.76 U	0.62 U	1.8 U	1.8 U
1,4-Dioxane	0.51 U	0.88 U	2.4 U	0.72	0.77 U	0.64 U	2.9 U	1.6 U	0.58 U	0.68 U	0.57 U	1.5 U	1.9 U	1.1	0.48 U	1.4 U	1.4 U
Bromodichloromethane	0.94 U	1.6 U	4.5 U	1 U	1.4 U	1.2 U	5.4 U	2.9 U	1.1 U	1.3 U	1 U	2.8 U	3.6 U	1.1 U	0.9 U	2.5 U	2.7 U
cis-1,3-Dichloropropene	0.64 U	1.1 U	3 U	0.72 U	0.97 U	0.81 U	3.6 U	2 U	0.73 U	0.86 U	0.72 U	1.9 U	2.4 U	0.74 U	0.61 U	1.7 U	1.8 U
4-Methyl-2-pentanone	7.3	11	16	60	6.1	9.7	5.7	16	38	5.8	6	4.7	15	70	8	8.9	10
Toluene	67	46	200	46	110	12	49	180	38	100	16	45	170	47	94	87	230
trans-1,3-Dichloropropene	0.64 U	1.1 U	3 U	0.72 U	0.97 U	0.81 U	3.6 U	2 U	0.73 U	0.86 U	0.72 U	1.9 U	2.4 U	0.74 U	0.61 U	1.7 U	1.8 U
1,1,2-Trichloroethane	0.15 U	0.26 U	0.73 U	0.17 U	0.23 U	0.2 U	0.88 U	0.47 U	0.18 U	0.21 U	0.17 U	0.46 U	0.59 U	0.18 U	0.15 U	0.41 U	0.44 U
Tetrachloroethene	3.3	82	0.91 U	0.41	42	0.46	1.1	0.58 U	0.29	41	0.73	0.57 U	0.73 U	0.31	3.4	70	16
2-Hexanone	2.9 U	5 U	14 U	3.2 U	4.4 U	3.7 U	16 U	8.8 U	3.3 U	3.9 U	3.2 U	8.6 U	11 U	3.4 U	2.7 U	7.8 U	8.2 U
Dibromochloromethane	1.2 U	2.1 U	5.7 U	1.3 U	1.8 U	1.5 U	6.8 U	3.7 U	1.4 U	1.6 U	1.3 U	3.6 U	4.6 U	1.4 U	1.1 U	3.2 U	3.4 U
1,2-Dibromoethane (EDB)	1.1 U	1.9 U	5.2 U	1.2 U	1.6 U	1.4 U	6.2 U	3.3 U	1.2 U	1.5 U	1.2 U	3.2 U	4.1 U	1.3 U	1 U	2.9 U	3.1 U
Chlorobenzene	0.65 U	1.1 U	3.1 U	0.73 U	0.98 U	0.82 U	3.7 U	2 U	0.74 U	0.87 U	0.73 U	1.9 U	2.5 U	0.76 U	0.62 U	1.7 U	1.8 U
Ethyl Benzene	25	9.2	97	16	86	4.2	86	93	11	85	4.2	75	90	15	12	57	120
m,p-Xylene	--	39	430	70	310	17	320	380	46	310	17	270	390	63	57	250	440
o-Xylene	35	11	87	18	92	4.2	88	84	8	91	4.1	76	83	13	18	70	130
Styrene	0.6 U	1 U	2.8 U	0.67 U	0.91 U	0.76 U	3.4 U	1.8 U	0.68 U	0.81 U	0.67 U	1.8 U	2.3 U	0.7 U	0.57 U	1.6 U	1.7 U
Bromoform	1.4 U	2.5 U	6.9 U	1.6 U	2.2 U	1.8 U	8.3 U	4.4 U	1.7 U	2 U	1.6 U	4.3 U	5.6 U	1.7 U	1.4 U	3.9 U	4.2 U
Cumene	0.69 U	1.2 U	3.3 U	0.78 U	1 U	0.88 U	4 U	2.1 U	0.79 U	0.93 U	0.78 U	2.1 U	2.6 U	0.81 U	0.66 U	1.9 U	2 U
1,1,2,2-Tetrachloroethane	0.19 U	0.33 U	0.92 U	0.22 U	0.29 U	0.24 U	1.1 U	0.59 U	0.22 U	0.26 U	0.22 U	0.58 U	0.74 U	0.22 U	0.18 U	0.52 U	0.55 U
Propylbenzene	0.78	1.2 U	3.3 U	0.78 U	1 U	0.88 U	4 U	2.1 U	0.79 U	0.93 U	0.78 U	2.1 U	2.6 U	0.81 U	0.66 U	1.9 U	2 U
4-Ethyltoluene	3.5	3.9	5	2.5	3.3	0.88 U	4 U	5.2	2.3	3.6	0.79	3.5	5.3	2.3	3.1	5.8	5.8
1,3,5-Trimethylbenzene	1.4	1.6	3.3 U	0.82	1.2	0.88 U	4 U	2.1 U	0.88	1.2	0.78 U	2.1 U	2.6 U	0.81 U	1	2.1	2.1
1,2,4-Trimethylbenzene	4.2	5	6	3.2	3.2	0.88 U	4 U	6.4	3.1	3.2	0.78 U	3.4	6.3	2.8	2.8	6.5	5.5
1,3-Dichlorobenzene	0.85 U	1.5 U	4 U	0.95 U	1.3 U	1.1 U	4.8 U	2.6 U	0.97 U	1.1 U	0.95 U	2.5 U	3.2 U	0.99 U	0.8 U	2.3 U	2.4 U
1,4-Dichlorobenzene	0.85 U	1.5 U	4 U	0.95 U	1.3 U	1.1 U	4.8 U	2.6 U	0.97 U	1.1 U	0.95 U	2.5 U	3.2 U	0.99 U	0.8 U	2.3 U	2.4 U
alpha-Chlorotoluene	0.73 U	1.2 U	3.5 U	0.82 U	1.1 U	0.93 U	4.2 U	2.2 UJ	0.83 U	0.98 U	0.82 U	2.2 U	2.8 UJ	0.85 U	0.69 U	2 U	2.1 U
1,2-Dichlorobenzene	0.85 U	1.5 U	4 U	0.95 U	1.3 U	1.1 U	4.8 U	2.6 U	0.97 U	1.1 U	0.95 U	2.5 U	3.2 U	0.99 U	0.8 U	2.3 U	2.4 U
1,2,4-Trichlorobenzene	5.2 U	9 U	25 U	5.9 U	7.9 U	6.6 U	30 U	16 U	6 U	7 U	5.9 U	16 U	20 U	6.1 U	5 U	14 U	15 U
Hexachlorobutadiene	7.5 U	13 U	36 U	8.4 U	11 U	9.5 U	43 U	23 U	8.6 U	10 U	8.4 U	22 U	29 U	8.7 U	7.1 U	20 U	21 U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2429 N. Borthwick Ave. Warehouse		2503 N. Albina Ave. Office		2503 N. Albina Ave. Office		2503 N. Albina Ave. Office		2503 N. Albina Ave. Office		2503 N. Albina Ave. Office		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse	
Sample ID	VP-2A		VP-2A		VP-2A		VP-3A		VP-3A		VP-3A		VP-3A		VP-3A		2503 N. Albina-Office		2503 N. Albina-Office		2503-O-A		2503-O-A		2503 N. Albina-Office		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse	
Lab Sample ID	0907457-03		1005544A-04		1008553D-38		0809503B-12		0903664B-11		0906577-04		0907457-04		1005544A-0		0903664C-18		0907297-03		1005544B-13		1008553C-29		1012335-06		0903664C-19		0907105B-13	
Date Sampled	7/18/2009		5/20/2010		8/20/2010		9/20/2008		3/21/2009		6/20/2009		7/18/2009		5/20/2010		3/20/2009		7/14/2009		5/20/2010		8/20/2010		12/13/2010		3/20/2009		6/25/2009	
Volatile Organic Compounds (µg/m3)																														
Freon 12	2.6		3.8	U	2.2		4.7	U	2.6		2.7		8.4	U	7.4	U	2.2		2.1		2.4		2.2		2.20		2.3		2.3		2	
Freon 114	2.9	U	5.4	U	1.1	U	6.7	U	2	U	2.4	U	12	U	10	U	2.2	U	1.1	U	1.2	U	1.1	U	1.1	U	1.3	U	1.2	U	1.2	U
Chloromethane	0.87	U	1.6	U	0.86		2	U	0.74		1		3.5	U	3.1	U	1.2		1.7		1.3		1.1		1.3		1.1		2.2		1.3	J
Vinyl Chloride	0.11	U	0.2	U	0.041	U	0.24	U	0.074	U	0.089	U	0.44	U	0.38	U	0.29	U	0.04	U	0.043	U	0.041	U	0.042	U	0.05	U	0.046	U	0.043	U
1,3-Butadiene	0.93	U	1.7	U	0.36	U	2.1	U	0.64	U	0.77	U	3.8	U	3.3	U	0.71	U	0.34	U	0.37	U	0.36	U	0.36	U	0.4	U	0.4	U	0.37	U
Bromomethane	1.6	U	3	U	0.62	U	3.7	U	1.1	U	1.4	U	6.6	U	5.8	U	1.2	U	0.6	U	0.65	U	0.68		0.64	U	0.71	U	4.8		3.3	U
Chloroethane	1.1	U	2	U	0.42	U	2.5	U	0.76	U	0.92	U	4.5	U	3.9	U	0.85	U	0.41	U	0.44	U	0.42	U	0.43	U	0.48	U	0.47	U	0.44	U
Freon 11	2.4	U	4.4	U	1.1		5.4	U	1.6	U	2	U	9.6	U	8.4	U	1.8	U	1.5		1.3		1		0.98		1.2		1.4		1	
Ethanol	96		100	J	250	E	720		190		43		41		220	J	1,300	E	190	E	240	E	99		390	E	230	E	160	E	120	
Freon 113	3.2	U	5.9	U	1.2	U	7.4	U	2.2	U	2.7	U	13	U	11	U	2.5	U	1.2	U	1.3	U	1.2	U	1.2	U	1.4	U	1.4	U	1.3	U
1,1-Dichloroethene	0.17	U	0.31	U	0.064	U	0.38	U	0.11	U	0.14	U	0.68	U	0.59	U	0.46	U	0.53		0.067	U	0.064	U	0.065	U	0.07	U	0.3		0.067	U
Acetone	270		820	E	150		120		120		110		260		4,200	E	2,600	E	60		29		27		43		45		51		40	
2-Propanol	94		2,400	E, J	140		120		580	E	100		290		1,400	J	2,200	E	180	E	16		6.4		13		7.6		200	E	27	
Carbon Disulfide	6.5	U	12	U	2.5	U	15	U	4.5	U	5.4	U	27	U	23	U	5	U	2.4	U	2.6	U	2.5	U	2.6	U	2.8	U	2.8	U	2.6	U
3-Chloropropene	6.6	U	12	U	2.5	U	--		4.5	U	5.5	U	27	U	23	U	5	U	2.4	U	2.6	U	2.5	U	2.6	U	2.9	U	2.8	U	2.6	U
Methylene Chloride	2.9	U	5.4	U	1.1	U	8.9		2.5		2.4	U	12	U	10	U	2.2	U	1.1	U	1.2	U	1.1	U	1.1	U	1.3	U	1.2	U	1.1	J
Methyl tert-butyl ether	1.5	U	2.8	UJ	0.58	U	3.5	U	1	U	1.3	U	6.2	U	5.4	UJ	4.1	U	0.56	U	0.6	U	0.58	UJ	0.59	U	0.66	U	0.64	U	0.6	U
trans-1,2-Dichloroethene	1.7	U	3.1	U	0.64	U	3.8	U	1.1	U	1.4	U	6.8	U	5.9	U	4.6	U	0.61	U	0.67	U	0.64	U	0.65	U	0.72	U	0.71	U	0.67	U
Hexane	5.2		6.30		4.6		3.4	U	1	U	4.9		6	U	18		51		8.4		14		0.57	U	20		2.4		10		22	
1,1-Dichloroethane	0.34	U	0.63	U	0.13	U	0.78	U	0.23	U	0.28	U	1.4	U	1.2	U	0.93	U	0.12	U	0.14	U	0.13	U	0.13	U	0.15	U	0.14	U	0.14	U
2-Butanone (Methyl Ethyl Ketone)	17		270		20		18		23		92		43		1,400		130		12		6.7		3		14		5.9		10		20	
cis-1,2-Dichloroethene	0.33	U	0.61	U	0.13	U	0.76	U	0.23	U	0.28	U	1.4	U	1.2	U	0.91	U	0.12	U	0.13	U	0.13	U	0.13	U	0.14	U	0.14	U	0.13	U
Tetrahydrofuran	6.2	U	11	U	2.4	U	14	U	4.2	U	5.2	U	25	U	22	U	4.7	U	2.3	U	2.5	U	2.4	U	2.4	U	2.7	U	2.6	U	2.5	U
Chloroform	2	U	3.8	U	0.79	U	4.7	U	1.4	U	1.7	U	8.3	U	7.3	U	1.6	U	0.76	U	0.82	U	0.79	U	0.8	U	0.89	U	0.87	U	0.82	U
1,1,1-Trichloroethane	0.46	U	0.84	U	0.18	U	1	U	0.47		0.38	U	1.9	U	1.6	U	1.2	U	0.99		0.18	U	0.18	U	0.18	U	0.2	U	0.77		0.27	
Cyclohexane	2.9		30		5		3.3	U	1.8		6.8		5.9	U	60		230		1.7		0.58	U	0.55	U	0.63		0.63	U	1.9		0.96	
Carbon Tetrachloride	2.6	U	4.9	U	1	U	6	U	1.8	U	2.2	U	11	U	9.4	U	2	U	0.98	U	1	U	1	U	1	U	1.2	U	1.1	U	1	U
2,2,4-Trimethylpentane	9.8	U	18	U	3.8	U	--		6.7	U	8.2	U	40	U	35	U	9.6		3.6	U	3.9	U	3.8	U	3.8	U	4.3	U	4.2	U	3.9	U
Benzene	0.94		1.2	U	0.81		1.5	U	0.62		0.83		2.7	U	2.4	U	1.8	U	1		0.46		0.36		0.34		0.56		1.1		0.55	
1,2-Dichloroethane	0.34	U	0.63	U	0.13	U	0.78	U	0.23	U	0.28	U	1.4	U	1.2	U	0.93	U	1.1		0.56	J	0.35		0.29		0.33		0.64		0.45	
Heptane	16		18		18		16	J	30		41		44		48		280		1.4		1		0.66	U	0.99		1.4		1.1		2	
Trichloroethene	0.45	U	0.83	U	0.17	U	6.5		2.2		0.38	U	1.8	U	1.6	U	1.2	U	3.4		0.26		0.17	U	0.18	U	0.2	U	1.6		0.66	
1,2-Dichloropropane	1.9	U	3.6	U	0.74	U	4.4	U	1.3	U	1.6	U	7.9	U	6.9	U	1.5	U	0.72	U	0.78	U	0.74	U	0.76	U	0.84	U	0.83	U	0.78	U
1,4-Dioxane	1.5	U	2.8	U	0.58	U	3.4	U	1	U	2.3	U	6.2	U	5.4	U	1.2	U	0.56	U	0.6	U	0.58	U	0.59	U	0.66	U	0.64	U	0.6	U
Bromodichloromethane	2.8	U	5.2	U	1.1	U	6.4	U	1.9	U	0.38	U	11	U	10	U	2.2	U	1	U	1.1	U	1.1	U	1.1	U	1.2	U	1.2	U	1.1	U
cis-1,3-Dichloropropene	1.9	U	3.5	U	0.73	U	4.4	U	1.3	U	1.6	U	7.8	U	6.8	U	1.5	U	0.7	U	0.76	U	0.73	U	0.74	U	0.83	U	0.81	U	0.76	U
4-Methyl-2-pentanone	90		15		90		68		69		9.9		110		60		180		0.74		0.69	U	0.66	U	0.67	U	0.75	U	0.73	U	0.92	U
Toluene	170		190		60		380		230		130		520		660		850		20		27		6.6		48		16		20		23	
trans-1,3-Dichloropropene	1.9	U	3.5	U	0.73	U	4.4	U	1.3	U	1.6	U	7.8	U	6.8	U	1.5	U	0.7	U	0.76	U	0.73	U	0.74	U	0.83	U	0.81	U	0.76	U
1,1,2-Trichloroethane	0.46	U	0.84	U	0.18	U	1	U	0.31	U	0.38	U	1.9	U	1.6	U	1.2	U	0.17	U	0.18	U	0.18	U	0.18	U	0.2	U	0.2	U	0.19	U
Tetrachloroethene	3.4		1	U	0.22	U	1.9		8.6		3.5		2.4		2	U	1.6	U	52		3.4		0.29		0.22	U	0.34		27		12	
2-Hexanone	8.6	U	16	U	3.3	U	20	U	5.9	U	7.2	U	35	U	30	U	6.6	U	3.2	U	3.4	U	3.3	U	3.4	U	3.7	U	3.7	U	3.4	U
Dibromochloromethane	3.6	U	6.6	U	1.4	U	8.2	U	2.4	U	3	U	14	U	13	U	2.7	U	1.3	U	1.4	U	1.4	U	1.4	U	1.6	U	1.5	U	1.4	U
1,2-Dibromoethane (EDB)	3.2	U	6	U	1.2	U	7.4	U	2.2	U	2.7	U	13	U	11	U	2.5	U	1.2	U	1.3	U	1.2	U	1.3	U	1.4	U	1.4	U	1.3	U
Chlorobenzene	1.9	U	3.6	U	0.74	U	4.4	U	1.3	U	1.6	U	7.9	U	6.8	U	1.5	U	0.71	U	0.77	U	0.74	U	0.76	U	0.84	U	0.82	U	0.77	U
Ethyl Benzene	13		61		14		57		28		100		130		140		250		1.4		2.1		1		0.7		0.6		1		1.3	
m,p-Xylene	52		280		59		320		140		400		530		610		990		4		6.3		3.3		1.5		1.4		2.6		3.2	
o-Xylene	13		53		12		89		43		130		140		120		230		1.3		1.4		0.68		0.39		0.48		0.85		1	
Styrene	1.8	U	3.3	U	0.68	U	4.1	U	1.2	U	1.5	U	7.3	U	6.3	U	1.4	U	1.2		0.8		0.68	U	0.77		0.78	U	1		1.4	
Bromoform	4.3	U	8	U	1.7	U	9.9	U	3	U	3.6	U	18	U	15	U	3.3	U	1.6	U	1.7	U	1.7	U	1.7	U	1.9	U	1.8	U	1.7	U
Cumene	2.1	U	3.8	U	0.79	U	4.7	U	1.4	U	1.8		8.4	U	7.3	U	3		0.76	U	0.82	U	0.79	U	0.81	U	0.9	U	0.88	U	0.82	U
1,1,2,2-Tetrachloroethane	0.58	U	1.1	U	0.22	U	1.3	U	0.4	U	0.48	U	2.3	U	2	U	1.6	U	0.21	U	0.23	U	0.22	U	0.22	U	0.25	U	0.24	U	0.23	U
Propylbenzene	2.1	U	3.8	U	0.79	U	4.7	U	1.4	U	16		8.4	U	7.3	U	1.6	U	0.76	U	0.82	U	0.79	U	0.81	U	0.9	U	0.88	U	0.82	U
4-Ethyltoluene	2.1	U	5.7		1.4		6.2		2.5		110		8.4	U	18		4.5		4		0.82	U	0.79	U	0.81	U	0.9	U	2		0.82	U
1,3,5-Trimethylbenzene	2.1	U	3.8	U	0.79	U	4.7	U	1.4	U	43		8.4	U	7.3	U	1.6	U	2		0.82	U	0.79	U	0.81	U	0.9	U	0.88	U	0.82	U
1,2,4-Trimethylbenzene	2.1	U	7.6		1.6		7.2		3.9		130		8.4	U	26		5.8		5.8		0.82	U	0.79	U	0.81	U	0.9	U	2.6		0.98	
1,3-Dichlorobenzene	2.5	U	4.6	U	0.97	U	5.8	U	1.7	U	2.1	U	10	U	9	U	1.9	U	0.93	U	1	U	0.97	U	0.99	U	1.1	U	1.1	U	1	U
1,4-Dichlorobenzene	2.5	U	4.6	U	0.97	U	5.8	U	1.7	U	2.1	U	10	U	9	U	1.9	U	0.93	U	1	U	0.97	U	0.99	U	1.1	U	1.1	U	1	U
alpha-Chlorotoluene	2.2	U	4	U	0.83	U	5	U	1.5	U	1.8	U	8.8	U	7.7	U	1.7	U	0.8	U	0.87	U	0.83	U	0.85	U	0.95	U	0.93	U	0.87	U
1,2-Dichlorobenzene	2.5	U	4.6	U	0.97	U	5.8	U	1.7	U	2.1	U	10	U	9	U	1.9	U	0.93	U	1	U	0.97	U	0.99	U	1.1	U	1.1	U	1	U
1,2,4-Trichlorobenzene	16	U	29	U	6	U	36	U	11	U	13	U	63	U	55	U	12	U	5.8	U	6.2	U	6	U	6.1	U	6.8	U	6.6	U	6.2	U
Hexachlorobutadiene	22	U	41	U	8.6	U	51	U	15	U	19	U	91	U	79	U	17	U	8.3	U	9	U	8.6	U	8.7	U	9.8	U	9.5	U	9	U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2503 N. Albina Ave. Warehouse		2405 N. Albina Ave. Office		2405 N. Albina Ave. Office		2405 N. Albina Ave. Office	
Sample ID	2503 N. Albina Warehouse		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse		2503 N. Albina-Warehouse		2503-W-A		2503-W-A		2503 N. Albina-Warehouse		2405 N. Albina (Office)		2405 N. Albina - Office		2405-O-A	
Lab Sample ID	090727A-04		0909152A-01		0910089-01		0910726-01		0911576-02		0912605-01		1001588-02		1002520-01		1003564-01A		1004600-01A		1005544B-12		1008553C-28		1012335-08		0907105B-14		0907297-01		1005544A-08	
Date Sampled	7/14/2009		8/31/2009		9/30/2009		10/30/2009		11/24/2009		12/22/2009		1/26/2010		2/23/2010		3/24/2010		4/27/2010		5/20/2010		8/20/2010		12/13/2010		6/25/2009		7/14/2009		5/20/2010	
Volatile Organic Compounds (µg/m3)																																
Freon 12	2.3		2.3		2.1		2.4		2.9		1.8		1.8		2.6		2.6		2.9		2.3		2.50		2.20		2.0		2.5		3.4	
Freon 114	1.1	U	1.4	U	1.2	U	1.1	U	1.2	U	0.92	U	1.1	U	1.1	U	1.6	U	1.2	U	1.2	U	1.1	U	1.20	U	1.2	U	1.2	U	1.2	U
Chloromethane	0.99		1.5		1.2		1.6		1.4		0.67		0.89		1.4		1.2		1.4		0.92		1.20		0.81		1.0	J	1.5		2	
Vinyl Chloride	0.041	U	0.05	U	0.043	U	0.041	U	0.044	U	0.034	U	0.042	U	0.04	U	0.057	U	0.043	U	0.044	U	0.039	U	0.05	U	0.044	U	0.045	U	0.044	U
1,3-Butadiene	0.36	U	0.43	U	0.37	U	0.36	U	0.42		0.29	U	0.36	U	0.37		0.49	U	0.37	U	0.38	U	0.34	U	0.39	U	0.38	U	0.39	U	0.38	U
Bromomethane	0.62	U	0.76	U	1.1		0.62	U	0.66	U	0.51	U	0.64	U	0.61	U	0.87	U	0.65	U	0.66	U	0.59	U	0.68	U	3.3	U	0.68	U	0.66	U
Chloroethane	0.42	U	0.52	U	0.44	U	0.42	U	0.45	U	0.35	U	0.43	U	0.42	U	0.59	U	0.44	U	0.45	U	0.4	U	0.46	U	0.45	U	0.46	U	0.45	U
Freon 11	1.4		1.5		1.2		1.3		2		0.93		0.98		1.3		1.3		1.6		1.1		1.10		1.2		1.3		1.7		1.9	
Ethanol	390	E	50		120		56		98		38		72		400	E	63		110		55		180	E	160	E	150	E	110		130	E
Freon 113	1.2	U	1.5	U	1.3	U	1.2	U	1.3	U	1	U	1.2	U	1.2	U	1.7	U	1.3	U	1.3	U	1.2	U	1.3	U	1.3	U	1.3	U	1.3	U
1,1-Dichloroethene	0.064	U	0.19		0.21		0.064	U	0.14		0.052	U	0.065	U	0.063	U	0.088	U	0.14		0.068	U	0.06	U	0.07	U	0.068	U	0.069	U	0.068	U
Acetone	26		26		34		32		34		21		420	E	37		18		34		21		22.00		50		87		68		68	
2-Propanol	14		26		79		50		21		10		27		27		6.3		11		6		5.90		6		14		35		26	
Carbon Disulfide	2.5	U	3	U	2.6	U	2.5	U	2.7	U	2	U	2.6	U	2.5	U	3.5	U	2.6	U	2.7	U	2.4	U	2.7	U	12		2.7	U	2.7	U
3-Chloropropene	2.5	U	3.1	U	2.6	U	2.5	U	2.7	U	2.1	U	2.6	U	2.5	U	3.5	U	2.6	U	2.7	U	2.4	U	2.7	U	2.7	U	2.7	U	2.7	U
Methylene Chloride	1.1	U	1.4	U	1.2	U	1.5		1.2	U	0.92	U	3		1.1	U	1.5	U	1.2	U	1.2	U	1.1		1.3		3.7		6.5		2.7	
Methyl tert-butyl ether	0.58	U	0.71	U	0.6	U	0.58	U	0.62	U	0.48	U	0.59	U	0.57	U	0.8	U	0.6	U	0.62	UJ	0.55	U	0.63	U	0.62	U	0.63	U	0.62	U
trans-1,2-Dichloroethene	0.64	U	0.78	U	0.67	U	0.64	U	0.68	U	0.52	U	0.65	U	0.63	U	0.88	U	0.67	U	0.68	U	0.6	U	0.69	U	0.68	U	0.69	U	0.68	U
Hexane	100		8.4		1.8		2.7		0.85		0.64		3.5		2.3		1.5		0.7		0.6	U	24		1.4				0.63		0.73	
1,1-Dichloroethane	0.18		0.16	U	0.14	U	0.13	U	0.14	U	0.11	U	0.13	U	0.13	U	0.18	U	0.14	U	0.14	U	0.12	U	0.14	U	0.14	U	0.14	U	0.14	U
2-Butanone (Methyl Ethyl Ketone)	7.1		5.3		1.9		23		7.4		2.4		8.7		17		3.9		37		2.3		11.00		5.7		8.5		4		2.6	
cis-1,2-Dichloroethene	0.14		0.16	U	0.13	U	0.13	U	0.14	U	0.1	U	0.13	U	0.12	U	0.18	U	0.13	U	0.14	U	0.12	U	0.14	U	0.14	U	0.14	U	0.14	U
Tetrahydrofuran	2.4	U	2.9	U	2.5	U	2.4	U	2.5	U	1.9	U	2.4	U	2.3	U	3.3	U	2.5	U	2.5	U	2.2	U	2.6	0.6	2.5	U	2.6	U	2.5	U
Chloroform	0.79	U	0.96	U	0.82	U	0.79	U	0.83	U	0.64	U	0.8	U	0.77	U	1.1	U	0.82	U	0.83	U	0.74	U	0.85	U	0.83	U	0.85	U	0.83	U
1,1,1-Trichloroethane	0.18	U	0.21	U	0.18	U	0.24		0.19	U	0.14	U	0.18	U	0.17	U	0.24	U	0.18	U	0.19	U	0.16	U	0.19	U	0.22		0.35		0.19	U
Cyclohexane	24		0.67	U	0.58	U	2		0.59	U	0.45	U	0.79		1.1		0.77	U	6.6		0.59	U	0.64		0.6	U	1		1.4		0.8	
Carbon Tetrachloride	1	U	1.2	U	1	U	1	U	1.1	U	0.83	U	1	U	0.99	U	1.4	U	1	U	1.1	U	0.96	U	1.1	U	1.1	U	1.1	U	1.1	U
2,2,4-Trimethylpentane	11		4.6	U	3.9	U	4.1		4	U	3.1	U	3.8	U	3.7	U	5.2	U	3.9	U	4	U	3.6	U	4.1	U	4	U	4.1	U	4	U
Benzene	35		0.53		0.52		1.4		1.8		0.55		1.5		2.1		1.1		0.54		0.35		0.38		0.5				0.50		0.58	
1,2-Dichloroethane	0.2	J	0.38		0.25		0.26		0.26	J	0.15		0.14		0.18		0.18	U	0.36		0.18		0.14		0.2				0.35	J	0.14	U
Heptane	18		1.4		0.69	U	2.6		1.3		0.54	U	2.2		2.2		1.1		2		0.7	U	1.3		1.3				1.4		0.7	U
Trichloroethene	0.17	U	0.21	U	0.18	U	0.4		0.2		0.14	U	0.18	U	0.17	U	0.24	U	0.18	U	0.18	U	0.16	U	0.19	U	1.8		3		0.42	
1,2-Dichloropropane	0.74	U	0.9	U	0.78	U	0.74	U	0.79	U	0.61	U	0.76	U	0.73	U	1	U	1.2		0.79	U	0.7	U	0.81	0.54	0.86		1.6		0.79	U
1,4-Dioxane	0.58	U	0.71	U	0.6	U	0.58	U	0.62	U	0.48	U	0.59	U	0.57	U	0.8	U	0.6	U	0.62	U	0.55	U	0.63	0.27	4.1		0.63	U	0.62	U
Bromodichloromethane	1.1	U	1.3	U	1.1	U	1.1	U	1.1	U	0.88	U	1.1	U	1	U	1.5	U	1.1	U	1.1	U	1	U	1.2	0.3	1.1	U	1.2	U	1.1	U
cis-1,3-Dichloropropene	0.73	U	0.89	U	0.76	U	0.73	U	0.78	U	0.6	U	0.74	U	0.72	U	1	U	0.76	U	0.78	U	0.69	U	0.79	U	0.78	U	0.79	U	0.78	U
4-Methyl-2-pentanone	2.1		0.8	U	0.69	U	0.66	U	1.2		0.54	U	2.6		0.65	U	0.91	U	0.85		0.7	U	0.62	U	0.72	U	0.86		0.72	U	0.7	U
Toluene	88		19		14		32		15		5.5		21		19		7		28		6		54		20				6.2		9.6	
trans-1,3-Dichloropropene	0.73	U	0.89	U	0.76	U	0.73	U	0.78	U	0.6	U	0.74	U	0.72	U	1	U	0.76	U	0.78	U	0.69	U	0.79	U	0.78	U	0.79	U	0.78	U
1,1,2-Trichloroethane	0.18	U	0.21	U	0.18	U	0.18	U	0.19	U	0.14	U	0.18	U	0.17	U	0.24	U	0.18	U	0.19	U	0.16	U	0.19	U	0.19	U	0.19	U	0.19	U
Tetrachloroethene	1.4		2.2		1.2		7.1		0.75		0.52		0.53		0.55		0.35		0.37		0.23		0.21	U	0.25				21		3.2	
2-Hexanone	3.3	U	4	U	3.4	U	3.3	U	3.5	U	2.7	U	3.4	U	3.2	U	4.6	U	3.4	U	3.5	U	3.1	U	3.6	0	3.5	U	3.6	U	3.5	U
Dibromochloromethane	1.4	U	1.7	U	1.4	U	1.4	U	1.4	U	1.1	U	1.4		1.3	U	1.9	U	1.4	U	1.4	U	1.3	U	1.5	U	1.4	U	1.5	U	1.4	U
1,2-Dibromoethane (EDB)	1.2	U	1.5	U	1.3	U	1.2	U	1.3	U	1	U	1.3	U	1.2	U	1.7	U	1.3	U	1.3	U	1.2	U	1.3	U	1.3	U	1.3	U	1.3	U
Chlorobenzene	0.74	U	0.9	U	0.77	U	0.74	U	0.79	U	0.61	U	0.76	U	0.73	U	1	U	0.77	U	0.79	U	0.7	U	0.8	1.8	0.79	U	0.8	U	0.79	U
Ethyl Benzene	7.4		1.2		0.83		1.7		1.5		0.57		1.7		1.7		1.2		2.7		0.69		0.69		0.5		1		0.55		0.68	
m,p-Xylene	25		2.2		1.7		4.5		4		1.4		5.7		5.4		4.2		8.8		2		1.6		1.2				0.8		1.8	
o-Xylene	6.4		0.73		0.47		1.4		1.1		0.49		1.8		1.5		1.2		2		0.4		0.35		0.4				0.29		0.72	
Styrene	0.81		0.99		0.72	U	1		0.81		0.56	U	0.7	U	0.81		0.95	U	0.74		0.73	U	0.81		0.74	U	0.73	U	0.74	U	0.73	U
Bromoform	1.7	U	2	U	1.7	U	1.7	U	1.8	U	1.4	U	1.7	U	1.6	U	2.3	U	1.7	U	1.8	U	1.6	U	1.8	U	1.8	U	1.8	U	1.8	U
Cumene	0.79	U	0.96	U	0.82	U	0.79	U	0.84	U	0.65	U	0.81	U	0.78	U	1.1	U	0.82	U	0.84	U	0.75	U	0.86	0.5	0.84	U	0.86	U	0.84	U
1,1,2,2-Tetrachloroethane	0.22	U	0.27	U	0.23	U	0.22	U	0.23	U	0.18	U	0.22	U	0.22	U	0.31	U	0.23	U	0.23	U	0.21	U	0.24	0.1	0.23	U	0.24	U	0.23	U
Propylbenzene	0.79	U	0.96	U	0.82	U	0.79	U	0.84	U	0.65	U	1.1		0.78	U	1.1	U	0.82	U	0.84	U	0.75	U	0.86	U	1		0.86	U	0.84	U
4-Ethyltoluene	2.2		0.96	U	0.82	U	1.4		2		0.93		5.3		1.1		2.3		0.82	U	0.84	U	0.75	U	0.86	U	5.2		0.86	U	1.4	
1,3,5-Trimethylbenzene	0.79	U	0.96	U	0.82	U	0.79	U	0.84	U	0.65	U	1.6		0.78	U	1.1	U	0.82	U	0.84	U	0.75	U	0.86	U	3.1		0.86	U	0.84	U
1,2,4-Trimethylbenzene	2.1		0.96	U	0.82	U	1.4		1.1		0.88		5.5		1.2		2.1		0.86		0.84	U	0.75	U	0.86	U	10		0.86	U	2.5	
1,3-Dichlorobenzene	0.97	U	1.2	U	1	U	0.97	U	1	U	0.79	U	0.99	U	0.95	U	1.3	U	1	U	1	U	0.91	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	0.97	U	1.2	U	1	U	0.97	U	1	U	0.79	U	0.99	U	0.95	U	1.3	U	1	U	1	U	0.91	U	1	U	1	U	1	U	1	U
alpha-Chlorotoluene	0.83	U	1	U	0.87	U	0.83	U	0.88	U	0.68	U	0.85	U	0.82	U	1.2	U	0.87	U	0.88	U	0.79	U	0.9	U	0.88	U	0.9	U	0.88	U
1,2-Dichlorobenzene	0.97	U	1.2	U	1	U	0.97	U	1	U	0.79	U	0.99	U	0.95	U	1.3	U	1	U	1	U	0.91	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	6	U	7.3	UJ	6.2	U	6	U	6.3	U	4.9	U	6.1	U	5.9	U	8.3	U	6.2	U	6.3	U	5.6	U	6.5	U	6.3	U	6.5	U	6.3	U
Hexachlorobutadiene	8.6	U	10	U	9	U	8.6	U	9.1	U	7	U	8.7	U	8.4	U	12	U	9	U	9.1	U	8.1	U	9.3	U	9.1	U	9.3	U	9.1	U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.	2405 N. Albina Ave.
	Office	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse
Sample ID	2405-O-A	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405 N. Albina-Warehouse	2405-W-A	2405-W-A	2405 N. Albina-Warehouse
Lab Sample ID	1008553C-26	0903664C-17	0907105AR1-02	0907297-02	0909478-01	0910089-02	0910726-02	0911576-01	0912605-02	1001588-01	1002520-02	1003564-02A	1004600-02A	1005544B-11A	1008553C-27	1012335-07
Date Sampled	8/20/2010	3/20/2009	6/25/2009	7/14/2009	9/15/2009	9/30/2009	10/30/2009	11/24/2009	12/22/2009	1/26/2010	2/23/2010	3/24/2010	4/27/2010	5/20/2010	8/20/2010	12/13/2010
Volatile Organic Compounds (µg/m3)																
Freon 12	2.4	2.6	1.9	2.5	2.4	2.3	2.3	2.8	1.9	1.8	3.2	2.8	2.8	2.1	2.4	2.1
Freon 114	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	0.92 U	1.2 U	1.2 U	1.1 U	1.3 U	1.2 U	1.1 U	1.2 U
Chloromethane	0.96	1.1	0.78 J	1.6	2.1	1.2	1.2	1.4	0.67	0.78	1.5	1.2	1.2	0.85	0.92	1.6
Vinyl Chloride	0.043 U	0.044 U	0.042 U	0.04 U	0.043 U	0.044 U	0.042 U	0.041 U	0.034 U	0.043 U	0.045 U	0.04 U	0.047 U	0.044 U	0.042 U	0.05 U
1,3-Butadiene	0.37 U	0.38 U	0.36 U	0.35 U	0.37 U	0.38 U	0.36 U	0.46	0.29 U	0.37 U	0.45	0.35 U	0.4 U	0.38 U	0.36 U	0.4 U
Bromomethane	0.65 U	0.66 U	3.2 U	0.61 U	0.65 U	0.66 U	0.64 U	0.62 U	0.51 U	0.65 U	0.68 U	0.61 U	0.71 U	0.74	0.64 U	0.7 U
Chloroethane	0.44 U	0.45 U	0.43 U	0.42 U	0.44 U	0.45 U	0.43 U	0.42 U	0.35 U	0.44 U	0.46 U	0.42 U	0.48 U	0.45 U	0.43 U	0.47 U
Freon 11	1.1	2	1.2	1.7	2.9	1.4	0.92	1.9	1	0.96	1.5	1.4	1.6	1	1.1	1.2
Ethanol	100	130	97	98	82	86	140 E	48	29	53	51	45	290	26	63	44
Freon 113	1.3 U	1.3 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1 U	1.3 U	1.3 U	1.2 U	1.4 U	1.3 U	1.2 U	1.4 U
1,1-Dichloroethene	0.067 U	0.3	0.065 U	0.063 U	0.067 U	0.2	0.065 U	0.086	0.052 U	0.067 U	0.069 U	0.063 U	0.072 U	0.068 U	0.065 U	0.07 U
Acetone	130	35	94	75	130	66	49	14	10	21	22	27	54	22	110	32
2-Propanol	9.4	18	12	39	150 J	34	20	23	5.6	8.6	8.1	20	6.8	9.6	5.3	2.4
Carbon Disulfide	2.6 U	2.7 U	2.6 U	2.5 U	2.6 U	3.5	8.7	2.5 U	2 U	2.6 U	2.7 U	2.5 U	2.8 U	2.7 U	2.6 U	2.8 U
3-Chloropropene	2.6 U	2.7 U	2.6 U	2.5 U	2.6 U	2.7 U	2.6 U	2.5 U	2.1 U	2.6 U	2.7 U	2.5 U	2.9 U	2.7 U	2.6 U	2.8 U
Methylene Chloride	1.7	3.1	3.2	5.6	21	14	2.1	1.8	1	1.4	3.8	6	2.7	1.3	1.1 J	2.4
Methyl tert-butyl ether	0.6 U	0.62	0.59 U	0.57 U	0.6 U	0.62 U	0.59	0.58 U	0.48 U	0.6 U	0.63 U	0.57 U	0.66 U	0.62 UJ	0.59 U	0.64 U
trans-1,2-Dichloroethene	0.67 U	0.68 U	0.65 U	0.63 U	0.67 U	0.68 U	0.65	0.64 U	0.52 U	0.67 U	0.69 U	0.63 U	0.72 U	0.68 U	0.65 U	0.71 U
Hexane	14	0.6	0.99	0.78	77	0.75	2.1	0.88	1.1	1.6	2.2	1.7	0.8	0.6 U	28	1.1
1,1-Dichloroethane	0.14 U	0.14 U	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.13 U	0.11 U	0.14 U	0.14 U	0.13 U	0.15 U	0.14 U	0.13 U	0.14 U
2-Butanone (Methyl Ethyl Ketone)	2.50 U	4.8	6.2	6	7.8	2.1	2.8	3.8	2.6	3.1	6	2.1	1.7	1.6	2.4 U	4.6
cis-1,2-Dichloroethene	0.13 U	0.14 U	0.13 U	0.12 U	0.13 U	0.14 U	0.13 U	0.13 U	1.3	0.13 U	0.14 U	0.12 U	0.14 U	0.14 U	0.13 U	0.14 U
Tetrahydrofuran	2.5 U	2.5 U	2.4 U	2.3 U	2.5 U	2.5 U	2.4 U	2.4 U	1.9 U	2.5 U	2.6 U	2.3 U	2.7 U	2.5 U	2.4 U	2.6 U
Chloroform	0.82 U	0.83 U	0.8 U	0.77 U	0.82	0.83 U	0.8 U	0.79 U	0.64 U	0.82 U	0.85 U	0.77 U	0.89 U	0.83 U	0.8 U	0.87 U
1,1,1-Trichloroethane	0.18 U	0.72	0.21	0.33	0.57	0.19 U	0.29	0.19 U	0.14 U	0.18 U	0.19 U	0.17 U	0.2 U	0.19 U	0.18 U	0.2 U
Cyclohexane	9.6	1.2	1	1.4	1.7	0.59 U	1.5	0.6	0.64	0.81	1.2	0.82	0.63	0.59 U	19	0.62 U
Carbon Tetrachloride	1 U	1.1 U	1 U	0.99 U	1 U	1.1 U	1 U	1 U	0.83 U	1 U	1.1 U	0.99 U	1.2 U	1.1 U	1 U	1.1 U
2,2,4-Trimethylpentane	3.9 U	4 U	3.8 U	3.7 U	3.9	4 U	4.6	3.8 U	3.1 U	3.9 U	4.1 U	3.7 U	4.3 U	4 U	3.8 U	4.2 U
Benzene	0.50	0.94	0.5	0.49	1.5	0.8	2	2	0.92	1.6	2.2	1.4	0.6	0.41	0.48	0.74
1,2-Dichloroethane	0.14 U	0.26	0.28	0.36 J	0.27	0.14 U	0.13 U	0.13 U	0.11 U	0.14 U	0.14 U	0.13 U	0.15 U	0.14 U	0.13 U	0.58
Heptane	1.1	0.7 U	1.8	1.5	2.8	0.7 U	2	0.84	0.82	1.2	1.5	1.1	0.75	0.7 U	1.1	0.73 U
Trichloroethene	0.19	4.5	1.8	3	4.7	1.4	2	0.57	0.42	0.28	0.38	0.26	0.34	0.18 U	0.18 U	0.4
1,2-Dichloropropane	0.78 U	0.8	1.1	1.6	2.4	1	0.76 U	0.74 U	0.61 U	0.78 U	0.81 U	0.73 U	0.84 U	0.79 U	0.76 U	0.83 U
1,4-Dioxane	1.1	0.62 U	0.59 U	0.57 U	0.6 U	0.62 U	0.59 U	0.58 U	0.48 U	0.6 U	0.63 U	0.57 U	0.66 U	0.62 U	0.59 U	9.9
Bromodichloromethane	1.1 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.88 U	1.1 U	1.2 U	1 U	1.2 U	1.1 U	1.1 U	1.2 U
cis-1,3-Dichloropropene	0.76 U	0.78 U	0.74 U	0.72 U	0.76 U	0.78 U	0.74 U	0.73 U	0.6 U	0.76 U	0.79 U	0.72 U	0.83 U	0.78 U	0.74 U	0.81 U
4-Methyl-2-pentanone	0.69 U	1	0.67 U	0.65 U	1	0.7 U	0.67 U	0.66 U	0.54 U	0.69 U	0.72 U	0.65 U	0.75 U	0.7 U	0.67 U	0.73 U
Toluene	40	9.3	6.1	8.3	15	5.8	9.8	11	6.4	7.1	11	6.3	3.5	8	23	18
trans-1,3-Dichloropropene	0.76 U	0.78 U	0.74 U	0.72 U	0.76 U	0.78 U	0.74 U	0.73 U	0.6 U	0.76 U	0.79 U	0.72 U	0.83 U	0.78 U	0.74 U	0.81 U
1,1,2-Trichloroethane	0.18 U	0.19 U	0.18 U	0.17 U	0.18 U	0.19 U	0.18 U	0.18 U	0.14 U	0.18 U	0.19 U	0.17 U	0.2 U	0.19 U	0.18 U	0.20 U
Tetrachloroethene	1.4	42	17	26	39	13	17	3.1	3	2	2.1	1.3	2.5	1	0.48	2.7
2-Hexanone	3.4 U	3.5 U	3.4 U	3.2 U	3.4 U	3.5 U	3.4 U	3.3 U	2.7 U	3.4 U	3.6 U	3.2 U	3.7 U	3.5 U	3.4 U	3.7 U
Dibromochloromethane	1.4 U	1.4 U	1.4 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U	1.1 U	1.4 U	1.5 U	1.3 U	1.6 U	1.4 U	1.4 U	1.5 U
1,2-Dibromoethane (EDB)	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U	1.2 U	1 U	1.3 U	1.3 U	1.2 U	1.4 U	1.3 U	1.3 U	1.4 U
Chlorobenzene	0.77 U	0.79 U	0.76 U	0.73 U	0.77 U	0.79 U	0.76 U	0.74 U	0.61 U	0.77 U	0.8 U	0.73 U	0.84 U	0.79 U	0.76 U	0.82 U
Ethyl Benzene	2.3	0.7	1.1	1.4	5.1	0.99	0.14	1.5	1	1.2	1.7	1.6	0.64	0.38	0.75	0.46
m,p-Xylene	5	1.9	2.3	3.2	15	2.4	0.28	4.2	2.9	4.4	5.6	5.4	1.9	0.85	1.5	1.3
o-Xylene	0.91	0.65	1	1.2	5	0.86	0.14	1.2	1.2	1.6	1.8	1.7	0.78	0.34	0.31	0.48
Styrene	1.6	0.73 U	0.7 U	0.8	1.3	0.73 U	0.7	0.68 U	0.56 U	0.72 U	0.74 U	0.67 U	0.78 U	0.73 U	1.5	0.76 U
Bromoform	1.7 U	1.8 U	1.7 U	1.6 U	1.7 U	1.8 U	1.7 U	1.7 U	1.4 U	1.7 U	1.8 U	1.6 U	1.9 U	1.8 U	1.7 U	1.8 U
Cumene	0.82 U	0.84 U	0.81 U	0.78 U	0.82 U	0.84 U	0.81 U	0.79 U	0.65 U	0.82 U	0.86 U	0.78 U	0.9 U	0.84 U	0.81 U	0.88 U
1,1,2,2-Tetrachloroethane	0.23 U	0.23 U	0.22 U	0.22 U	0.23 U	0.23 U	0.22 U	0.22 U	0.18 U	0.23 U	0.24 U	0.22 U	0.25 U	0.23 U	0.22 U	0.24 U
Propylbenzene	0.82 U	0.84 U	1.1	0.97	2.4	0.84 U	0.81 U	0.79 U	0.65 U	0.82 U	0.86 U	0.78 U	0.9 U	0.84 U	0.81 U	0.88 U
4-Ethyltoluene	2	5.7	5.1	6.8	14	5.5	0.81	1.9	2	2.9	2.1	3.5	1.4	0.84 U	0.8	3.2
1,3,5-Trimethylbenzene	0.82 U	2.9	3	4	6.7	2.6	0.81	0.84	0.96	0.93	0.97	1.2	0.9	0.84 U	0.81 U	1.1
1,2,4-Trimethylbenzene	2.6	11	10	15	23	8.9	0.81	2.5	3.4	3.4	3.1	3.3	2.6	1.1	1.4	4
1,3-Dichlorobenzene	1 U	1 U	0.99 U	0.95 U	1 U	1 U	0.99 U	0.97 U	0.79 U	1 U	1 U	0.95 U	1.1 U	1 U	0.99 U	1.1 U
1,4-Dichlorobenzene	1 U	1 U	0.99 U	0.95 U	1 U	1 U	0.99 U	0.97 U	0.79 U	1 U	1 U	0.95 U	1.1 U	1 U	0.99 U	1.1 U
alpha-Chlorotoluene	0.87 U	0.88 U	0.85 U	0.82 U	0.87 U	0.88 U	0.85 U	0.83 U	0.68 U	0.87 U	0.9 U	0.82 U	0.95 U	0.88 U	0.85 U	0.93 U
1,2-Dichlorobenzene	1 U	1 U	0.99 U	0.95 U	1 U	1 U	0.99 U	0.97 U	0.79 U	1 U	1 U	0.95 U	1.1 U	1 U	0.99 U	1.1 U
1,2,4-Trichlorobenzene	6.2 U	6.3 U	6.1 U	5.9 U	6.2 UJ	6.3 U	6.1 U	6 U	4.9 U	6.2 U	6.5 U	5.9 U	6.8 U	6.3 U	6.1 U	6.6 U
Hexachlorobutadiene	9 U	9.1 U	8.7 U	8.4 U	9 U	9.1 U	8.7 U	8.6 U	7 U	9 U	9.3 U	8.4 U	9.8 U	9.1 U	8.7 U	9.5 U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2405 N. Albina Ave.	2320 N. Albina Ave.	2320 N. Albina Ave.	2320 N. Albina Ave.	2320 N. Borthwick Ave.	2320 N. Borthwick Ave.	651 N. Russell St.	651 N. Russell St.	651 N. Russell St.	733 N. Russell St.	733 N. Russell St.	733 N. Russell St.	733 N. Russell St.	733 N. Russell St.	733 N. Russell St.	733 N. Russell St.
	Tote Composite	Warehouse	Warehouse	Warehouse	Warehouse	Warehouse	Office	Office	Office	Warehouse	Warehouse	Warehouse	Warehouse	Basement	Basement	Basement
Sample ID	Tote Composite from 2405 N. Albina	Ambient-1	2320 N. Albina-Warehouse	2320 N. Albina-Warehouse	2320-W-A	2320-W-A	651 N. Russell-Office	651 N. RUSSELL-OFFICE	651 N. RUSSELL	733 N. Russell-Warehouse	733-W-A	733-W-A	733 N.Russell-Warehouse	733 N. Russell-Basement	733 N. Russell-Basement	733-B-A
Lab Sample ID	0907105B-11	0801492-01	0904356-02	0907105AR1-07	1005544A-08	1008553C-25	0907105B-12	1005544A-01B	1008553C-23	0907105AR1-04	1005544B-17	1008553D-33	1012335-01	0904356-03	0907105AR1-06	1005544B-18
Date Sampled	6/25/2009	1/28/2008	4/9/2009	6/25/2009	5/20/2010	8/20/2010	6/25/2009	5/20/2010	8/20/2010	6/25/2009	5/20/2010	8/20/2010	12/13/2010	4/9/2009	6/25/2009	5/20/2010
Volatile Organic Compounds (µg/m3)																
Freon 12	1.9	3	2	1.9	3.1	2.2	2	2.3	2.4	1.9	2.4	2.2	2.2	2.4	2	2.2
Freon 114	1.1 U	1.2 U	1.9 U	1.1 U	1.1 U	1.5 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U
Chloromethane	0.84 J	1.3	1.2	0.55 J	1.6	1.1	2.5 J	1	1.4	0.64 J	0.85	1.20	0.77		0.58 J	0.99
Vinyl Chloride	0.04 U	0.045 U	0.068 U	0.04 U	0.042 U	0.055 U	0.048 U	0.045 U	0.042 U	0.041 U	0.04 U	0.043 U	0.04 U	0.04 U	0.041 U	0.04 U
1,3-Butadiene	0.35 U	0.62	0.59 U	0.35 U	0.36 U	0.48 U	0.45	0.39 U	0.36 U	0.36 U	0.34 U	0.37 U	0.37 U	0.34 U	0.36 U	0.34 U
Bromomethane	0.31 U	1.6	1 U	3.1 U	0.64 U	0.84 U	5.2 J	0.68 U	0.64 U	3.1 U	0.6 U	0.65 U	0.65 U	0.6 U	3.1 U	0.62
Chloroethane	0.42 U	0.46 U	0.71 U	0.42 U	0.43 U	0.57 U	0.49 U	0.46 U	0.43 U	0.42 U	0.41 U	0.44 U	0.44 U	0.41 U	0.42 U	0.41 U
Freon 11	1	1.8	1.5 U	1.1	1.6	1.2 U	1.1	1.1	1.2	1	1	1.2	1	1.3	1	1.1
Ethanol	190 E	46	10	10	6.5	19	29	9.8 J	14	10	18	12	34		8.1	4.3
Freon 113	1.2 U	1.3 U	2 U	1.2 U	1.2 U	1.7 U	1.4 U	1.3 U	1.2 U	1.2 U	1.2 U	1.3 U	1.30 U	1.2 U	1.2 U	1.2 U
1,1-Dichloroethene	0.063 U	0.069 U	0.11 U	0.063 U	0.065 U	0.086 U	0.074 U	0.069 U	0.065 U	0.064 U	0.061 U	0.067 U	0.07 U	0.13	0.064 U	0.061 U
Acetone	50	18	12	23	87	51	26	34	24	34	98	12	39		19	56
2-Propanol	27	15	3.5	15	28	28	38	6.4 J	2.1	4.4	6.5	2.1 U	140		7.2	4.7
Carbon Disulfide	2.9	2.7 U	4.2 U	2.5 U	2.6 U	3.4 U	2.9 U	2.7 U	2.6 U	2.7	2.4 U	2.6 U	2.6 U	2.4 U	2.5 U	2.4 U
3-Chloropropene	2.5 U	0.88	4.2 U	2.5 U	2.6 U	3.4 U	2.9 U	2.7 U	2.6 U	2.5 U	2.4 U	2.6 U	2.6 U	2.4 U	2.5 U	2.4 U
Methylene Chloride	1.1 U	1.6	1.9 U	1.1 U	1.1 U	1.5 U	1.3 U	1.2 U	1.1 U	1.1 U	41	1.3	9.8	5.6	1.6	3.6
Methyl tert-butyl ether	0.57 U	0.63 U	0.97 U	0.57 U	0.59 U	0.78 U	0.67 U	0.63 UJ	0.59 U	0.58 U	0.56 U	0.6 U	0.6 U	0.56 U	0.58 U	0.56 UJ
trans-1,2-Dichloroethene	0.63 U	0.69 U	1.1 U	0.63 U	0.65 U	0.86 U	0.74 U	0.69 U	0.65 U	0.64 U	0.61 U	0.67 U	0.67 U	0.61 U	0.64 U	0.61 U
Hexane	21	9.4	4.4	4.1	0.58 U	0.85	2.5	0.62 U	0.66	2.6	28	3.6	48		4	1
1,1-Dichloroethane	0.13 U	0.14 U	0.22 U	0.13 U	0.13 U	0.18 U	0.15 U	0.14 U	0.13 U	0.13 U	0.12 U	0.14 U	0.14 U	0.12 U	0.13 U	0.12 U
2-Butanone (Methyl Ethyl Ketone)	44	2.2	5.5	17	2.2	7.9	8.9	5.8	2.8	12	8	2.5	5.9	5.5	20	5.7
cis-1,2-Dichloroethene	0.12 U	0.14 U	0.21 U	0.12 U	0.13 U	0.17 U	0.15 U	0.14 U	0.13 U	0.13 U	0.12 U	0.13 U	0.13 U	0.36	0.17	0.12 U
Tetrahydrofuran	2.3 U	2.6 U	4 U	2.3 U	2.4 U	3.2 U	2.8 U	2.6 U	2.4 U	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	3.1	2.3 U
Chloroform	0.77 U	0.85 U	1.3 U	0.77 U	0.8 U	1 U	0.91 U	0.85 U	0.8 U	0.79 U	0.76 U	0.82 U	0.82 U	0.76 U	0.79 U	0.76 U
1,1,1-Trichloroethane	0.28	0.19 U	0.29 U	0.17 U	0.18 U	0.24 U	0.2 U	0.19 U	0.18 U	0.18 U	0.17 U	0.18 U	2.3		0.24	0.17 U
Cyclohexane	2.4	2.4	0.92 U	0.56	0.8	0.75 U	0.64 U	0.6 U	0.56 U	0.55 U	0.96	0.83	2.9	U	0.55 U	0.53 U
Carbon Tetrachloride	0.99 U	1.1 U	1.7 U	0.99 U	1 U	1.4 U	1.2 U	1.1 U	1 U	1 U	0.98 U	1 U	1 U	0.98 U	1 U	0.98 U
2,2,4-Trimethylpentane	3.7 U	4.2	6.2 U	3.7 U	3.8 U	5.1 U	4.4 U	4.1 U	3.8 U	3.8 U	3.6 U	3.9 U	4 U	3.6 U	3.8 U	3.6 U
Benzene	1.4	5.2	0.57	0.68	0.6	0.36	1.9	0.93	0.7	1.1	3	1.4	3.8	0.44	1.2	0.61
1,2-Dichloroethane	0.62	0.14 U	0.22 U	0.13 U	0.15	0.18 U	0.15 U	0.14 U	0.13 U	0.13 U	0.12 U	0.18	0.14	0.53	0.13 U	0.12 U
Heptane	2.4	2.8	1.1 U	1	22	3.7	1.3	0.72 U	0.67 U	1.2	1.6	1.1	4.5	U	1.2	0.64 U
Trichloroethene	1.3	0.064	0.29 U	0.17 U	0.18 U	0.23 U	0.76	0.19 U	0.18 U	0.17 U	0.17 U	0.18 U	0.18 U	3.6	1.0	0.17 U
1,2-Dichloropropane	0.73 U	0.81 U	1.2 U	0.73 U	0.76 U	1 U	0.86 U	0.81 U	0.76 U	0.74 U	0.72 U	0.78 U	0.78 U	0.8	0.74 U	0.72 U
1,4-Dioxane	0.57 U	0.63 U	0.96 U	0.57 U	0.59 U	0.78 U	0.67 U	0.63 U	0.59 U	0.58 U	0.56 U	7	0.6 U	0.56 U	0.58 U	0.56 U
Bromodichloromethane	1 U	1.2 U	1.8 U	1 U	1.1 U	1.4 U	1.2 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	1 U	1.1 U	1 U
cis-1,3-Dichloropropene	0.72 U	0.79 U	1.2 U	0.72 U	0.74 U	0.98 U	0.85 U	0.79 U	0.74 U	0.73 U	0.7 U	0.76 U	0.76 U	0.7 U	0.73 U	0.7 U
4-Methyl-2-pentanone	1.2	1.1	1.1 U	0.65 U	1 J	1.7	2.9	2.2	1.2	1.1	1	0.69 U	1.8		1.3	0.63 U
Toluene	45	14	120	10	88	19	9.2	5.3	2.3	7.6	20	5.2	31		10	4.9
trans-1,3-Dichloropropene	0.72 U	0.79 U	1.2 U	0.72 U	0.74 U	0.98 U	0.85 U	0.79 U	0.74 U	0.73 U	0.7 U	0.76 U	0.76 U	0.7 U	0.73 U	0.7 U
1,1,2-Trichloroethane	0.17 U	0.19 U	0.29 U	0.17 U	0.18 U	0.24 U	0.2 U	0.19 U	0.18 U	0.18 U	0.17 U	0.18 U	0.18 U	0.17 U	0.18 U	0.17 U
Tetrachloroethene	12	0.23 J	2.8	1.6	0.22 U	0.29 U	0.93	0.28	1.2	1.5	0.48	0.23 U	2.4	1.3	25	0.68
2-Hexanone	3.2 U	3.6 U	5.5 U	3.2 U	3.4 U	4.4 U	3.8 U	3.6 U	3.4 U	3.3 U	3.2 U	3.4 U	3.4 U	3.2	3.3 U	3.2 U
Dibromochloromethane	1.3 U	1.5 U	2.3 U	1.3 U	1.4 U	1.8 U	1.6 U	1.5 U	1.4 U	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U	1.4 U	1.3 U
1,2-Dibromoethane (EDB)	1.2 U	1.3 U	2 U	1.2 U	1.3 U	1.7 U	1.4 U	1.3 U	1.3 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	0.73 U	0.8 U	1.2 U	0.73 U	0.76 U	1 U	0.86 U	0.8 U	0.76 U	0.74 U	0.71 U	0.77 U	0.77 U	0.71 U	0.74 U	0.71 U
Ethyl Benzene	2.2	2.1	38	1.1	0.2	0.7	1.6	3.7	0.35	1.6	6	0.44	4	1.8	2.8	3.3
m,p-Xylene	5	7.3	180	3.8	0.6	1.9	4.8	11	0.9	5.6	26	1.2	15		9.5	14
o-Xylene	2	2.4	60	1.2	0.2	0.47	1.5	1.8	0.28	1.7	5.6	0.35	4.8		2.7	2.4
Styrene	3.6	0.74 U	1.1 U	0.67 U	0.7 U	0.92 U	0.8 U	0.74 U	0.7 U	0.68 U	1.5	0.72 U	2	U	0.68 U	0.66 U
Bromoform	1.6 U	1.8	2.8 U	1.6 U	1.7 U	2.2 U	1.9 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U	1.6 U	1.7 U	1.6 U
Cumene	0.78 U	0.86 U	1.3 U	0.78 U	0.81 U	1.1 U	0.92 U	0.86 U	0.81 U	0.79 U	0.76 U	0.82 U	0.82 U	0.76 U	0.79 U	0.76 U
1,1,2,2-Tetrachloroethane	0.22 U	0.24 U	0.37 U	0.22 U	0.22 U	0.3 U	0.26 U	0.24 U	0.22 U	0.22 U	0.21 U	0.23 U	0.23 U	0.21 U	0.22 U	0.21 U
Propylbenzene	0.78 U	0.86 U	1.3 U	0.78 U	0.81 U	1.1 U	0.92 U	0.86 U	0.81 U	0.79 U	0.88	0.82 U	1 U	0.76 U	0.79 U	0.76 U
4-Ethyltoluene	1.7	1.7	1.3 U	0.78 U	0.81 U	1.1 U	0.92 U	1	0.84	1	4.1	0.82 U	5.2		0.8	0.76 U
1,3,5-Trimethylbenzene	0.78 U	0.86 U	1.3 U	0.78 U	0.81 U	1.1 U	0.92 U	0.86 U	0.81 U	0.79 U	1.4	0.82 U	1.9 U	0.76 U	0.79 U	0.76 U
1,2,4-Trimethylbenzene	2.7	2	1.3 U	0.78 U	0.81 U	1.1 U	0.92 U	0.86 U	1	1.4	5.2	0.9	7.1		0.96	0.76 U
1,3-Dichlorobenzene	0.95 U	1 U	1.6 U	0.95 U	0.99 U	1.3 U	1.1 U	1 U	0.99 U	0.97 U	0.93 U	1 U	1 U	0.93 U	0.97 U	0.93 U
1,4-Dichlorobenzene	0.95 U	1 U	1.6 U	0.95 U	0.99 U	1.3 U	1.1 U	1 U	0.99 U	0.97 U	0.93 U	1 U	1 U	0.93 U	0.97 U	0.93 U
alpha-Chlorotoluene	0.82 U	0.9 U	1.4 U	0.82 U	0.85 U	1.1 U	0.97 U	0.9 U	0.85 U	0.83 U	0.8 U	0.87 U	0.87 U	0.8 U	0.83 U	0.8 U
1,2-Dichlorobenzene	0.95 U	1 U	1.6 U	0.95 U	0.99 U	1.3 U	1.1 U	1 U	0.99 U	0.97 U	0.93 U	1 U	1 U	0.93 U	0.97 U	0.93 U
1,2,4-Trichlorobenzene	5.9 U	6.5 U	9.9 U	5.9 U	6.1 U	8 U	6.9 U	6.5 U	6.1 U	6 U	5.8 U	6.2 U	6.2 U	5.8 U	6 U	5.8 U
Hexachlorobutadiene	8.4 U	9.3 U	14 U	8.4 U	8.7 U	12 U	10 U	9.3 U	8.7 U	8.6 U	8.3 U	9 U	9 U	8.3 U	8.6 U	8.3 U

Notes:

1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	733 N. Russell St. Basement		733 N. Russell St. Basement		807 N. Russell St. Main		807 N. Russell St. Main		807 N. Russell St. Main		807 N. Russell St. Main		807 N. Russell St. Basement		807 N. Russell St. Basement		807 N. Russell St. Basement		807 N. Russell St. Basement		807 N. Russell St. Basement		816 N. Russell St. Restaurant Area		816 N. Russell St. Restaurant Area		816 N. Russell St. Restaurant Area		816 N. Russell St. Restaurant Area		816 N. Russell St. Bar	
Sample ID	733-B-A		733 N. Russell-Basement		807 N. Russell-Main		807 N. RUSSELL		807 N. RUSSELL		807 N.Russell-Main Floor		807 N. Russell-Basement		807 N. Russell-Basement		807-B-A		807-B-A		807 N. Russell-Basement		816 N. Russell		816 N. Russell St.		816 N. RUSSELL-REST		816 N. RUSSELL-REST		816 N. Russell St.	
Lab Sample ID	1008553D-34		1012335-03		0907105C-15		1005544B-15		1008553D-31		1012335-02		0903664C-16		0907105C-16		1005544B-16		1008553D-32		1012335-04		0905684-01		097105AR1-08		1005544B-14		1008553C-30		1012335-05	
Date Sampled	8/20/2010		12/13/2010		6/29/2009		5/20/2010		8/20/2010		12/13/2010		3/20/2009		6/29/2009		5/20/2010		8/20/2010		12/13/2010		5/23/2009		6/25/2009		5/20/2010		8/20/2010		12/13/2010	
Volatile Organic Compounds (µg/m3)																																
Freon 12	2.4		2.1			U	2.3		2.5		2.2				2.6	U	2.3		2.6		2.4		1.7		1.9		2.3		2.2		2	
Freon 114	1.2	U	1.2	U	3	U	1.1	U	1.1	U	1.3	U	1.2	U	3.7	U	1.1	U	0.94	U	1.2	U	1.2	U	1.3	U	1.1	U	1.1	U	1.2	U
Chloromethane	1.3		0.73			J	0.74		2.3		0.89				1.1	UJ	0.97		0.75		0.86		1		0.61	J	0.71		0.92		0.79	
Vinyl Chloride	0.044	U	0.05	U	0.11	U	0.042	U	0.039	U	0.05	U	0.044	U	0.14	U	0.04	U	0.034	U	0.04	U	0.044	U	0.047	U	0.041	U	0.066	U	0.05	U
1,3-Butadiene	0.38	U	0.39	0.1	0.95	U	0.36	U	0.34	U	0.4	0.4	0.38	U	1.2	U	0.35	U	0.3	U	0.37	U	0.38	U	0.4	U	0.36	U	0.34	U	0.39	U
Bromomethane	0.66	U	0.68	U	8.3	U	0.64	U	0.59	U	0.71	U	0.66	U	10	U	0.61	U	0.52	U	0.86		0.66	U	3.6	U	0.65		0.6	U	0.77	
Chloroethane	0.45	U	0.46	0.99	1.1	U	0.43	U	0.4	U	0.48	0.83	0.45	U	1.4	U	0.42	U	0.35	U	0.44	U	0.45	U	0.48	U	0.42	U	0.41	U	0.46	U
Freon 11	1.1		1.2			U	1.1		1.3		1.4				3	U	1.1		1.5		1.6		1.2		1.1		1.1		1.1		3.2	
Ethanol	9.2		2.5				130	E	49		200	E	7.1		20		55		14		18		230	E	480	E	640	E	720	E	680	E
Freon 113	1.3	U	1.3	U	3.3	U	1.2	U	1.2	U	1.4	U	1.3	U	4.1	U	1.2	U	1	U	1.3	U	1.3	U	1.4	U	1.2	U	1.2	U	1.3	U
1,1-Dichloroethene	0.068	U	0.07	U	0.17	U	0.065	U	0.060	U	0.07	U	0.46		0.21	U	0.063	U	0.053	U	0.07	U	0.068	U	0.072	U	0.064	U	0.1	U	0.07	U
Acetone	28		9.4	2.4			71		18		31	1.7			120		53		22		21		9.3		36		14		23		23	
2-Propanol	2.1	U	3.2	7.9		U	44		52		140		15		6.6	U	57		30		22		2.1	U	52		17		3.5		23	
Carbon Disulfide	4.8		2.7	U	6.7	U	2.6	U	2.4	U	2.8	U	2.7	U	8.3	U	2.5	U	2.5		2.6	U	2.7	U	2.8	U	2.5	U	2.4	U	2.7	U
3-Chloropropene	2.7	U	2.7	U	6.7	U	2.6	U	2.4	U	2.9	U	2.7	U	8.4	U	2.5	U	2.1	U	2.6	U	2.7	U	2.9	U	2.5	U	2.4	U	2.7	U
Methylene Chloride	2		12	82	3	U	1.1	U	1	U	3	52	1.2	U	3.7	U	1.1	U	0.93	U	2		1.2	U	1.3	U	1.3		1.1	U	1.2	
Methyl tert-butyl ether	0.62	U	0.63	5.2	1.5	U	0.59	UJ	0.55	U	0.66	U	0.62	U	1.9	U	0.57	UJ	0.48	U	0.6	U	0.62	U	0.66	U	0.58	UJ	0.93	U	0.63	U
trans-1,2-Dichloroethene	0.68	U	0.69	U	1.7	U	0.65	U	0.60	U	0.72	U	0.68	U	2.1	U	0.63	U	0.53	U	0.67	U	0.68	U	0.72	U	0.64	U	1	U	0.69	U
Hexane	3.60		2			U	0.58	U	0.54	U	0.72				2.4		0.56	U	0.47	U	0.66			U	0.78		2.2		0.55	U	1.2	
1,1-Dichloroethane	0.14	U	0.14	U	0.35	U	0.13	U	0.12	U	0.15	U	0.14	U	0.43	U	0.13	U	0.11	U	0.14	U	0.14	U	0.15	U	0.13	U	0.21	U	0.14	U
2-Butanone (Methyl Ethyl Ketone)	5		3.2		360		5.8		3.2		4.1		23		460		3.6		4		3.6		1.5		3.8		3.2		3.2		2.4	
cis-1,2-Dichloroethene	0.14	U	0.14	U	0.34	U	0.13	U	0.12	U	0.14	U	0.14		0.42	U	0.12	U	0.11	U	0.13	U	0.14	U	0.14	U	0.13	U	0.2	U	0.14	U
Tetrahydrofuran	2.5	U	2.6	0.5	6.3	U	2.4	U	2.2	U	2.7	0.1	2.5	U	7.9	U	2.3	U	2	U	2.5	0.6	2.5	U	2.7	U	2.4	U	2.3	U	2.6	U
Chloroform	0.83	U	0.85	U	2.1	U	0.8	U	0.74	U	0.89	U	0.83	U	2.6	U	0.77	U	0.65	U	0.82	U	0.99		0.89	U	0.79	U	0.76	U	0.85	U
1,1,1-Trichloroethane	0.19	U	0.82			U	0.18	U	0.16	U	0.20	U	1.4		0.58	U	0.17	U	0.15	U	0.18	U	0.19	U	0.2	U	0.18	U	0.28	U	0.19	U
Cyclohexane	0.69		0.60	U	1.5	U	0.56	U	0.52	U	0.94			U	1.8	U	0.54	U	0.46	U	0.58	U	0.59	U	0.63	U	0.55	U	0.53	U	0.69	
Carbon Tetrachloride	1.1	U	1.1	U	2.7	U	1	U	0.96	U	1.2	U	1.1	U	3.4	U	0.99	U	0.84	U	1	U	1.1	U	1.2	U	1	U	0.98	U	1.1	U
2,2,4-Trimethylpentane	4	U	4.1	U	10	U	3.8	U	3.6	U	4.3	U	4	U	12	U	3.7	U	3.1	U	3.9	U	4	U	4.3	U	3.8	U	3.6	U	4.1	U
Benzene	1.3		0.54	0.47			0.54		0.42		0.56				0.85	U	0.5		0.23		0.41		1		0.57		0.8		0.43		1.2	
1,2-Dichloroethane	0.14	U	0.14	U	0.47		0.17		0.12		0.16	0.59		U	0.43	U	0.13	U	0.12		0.14	U	0.14	U	0.15	U	0.13	U	0.21	U	0.14	U
Heptane	1.1		0.82			U	0.68		0.62	U	1.2		0.92		2.2	U	0.65	U	0.55	U	0.87			U	0.75	U	2.1		0.64	U	2	
Trichloroethene	0.18	U	0.32				0.18	U	0.16	U	0.2	U	7.7		0.57	U	0.17	U	0.14	U	0.18	U	1.1	U	0.24		0.17	U	0.28	U	0.19	U
1,2-Dichloropropane	0.79	U	0.81	0.71	2	U	0.76	U	0.7	U	0.84	0.84	0.79	U	2.5	U	0.73	U	0.62	U	0.78	U	0.79	U	0.84	U	0.74	U	0.72	U	0.81	U
1,4-Dioxane	2.2		0.63	U	1.5	U	0.59	U	0.55	U	0.66	0.14	0.62	U	1.9	U	0.57	U	0.48	U	0.60	U	0.62	U	0.66	U	0.58	U	0.66		3.5	
Bromodichloromethane	1.1	U	1.2	0.8	2.9	U	1.1	U	1	U	1.2	U	1.1	U	3.6	U	1	U	0.9	U	1.1	0.7	1.1	U	1.2	U	1.1	U	1	U	1.2	U
cis-1,3-Dichloropropene	0.78	U	0.79	0.18	1.9	U	0.74	U	0.69	U	0.83	U	0.78	U	2.4	U	0.72	U	0.61	U	0.76	U	0.78	U	0.83	U	0.73	U	0.7	U	0.79	U
4-Methyl-2-pentanone	0.7	U	1.1			U	0.67	U	0.71		1.4			U	2.2	U	0.72		0.55	U	0.7			U	0.75	U	0.66	U	0.63	U	0.72	U
Toluene	5.6		3.9				8.8		4.7		8		4.8		14		2.6		1.3		3.1		3		2.6		2.8		1		14	
trans-1,3-Dichloropropene	0.78	U	0.79	U	1.9	U	0.74	U	0.69	U	0.83	U	0.78	U	2.4	U	0.72	U	0.61	U	0.76	U	0.78	U	0.83	U	0.73	U	0.7	U	0.79	U
1,1,2-Trichloroethane	0.19	U	0.19	U	0.47	U	0.18	U	0.16	U	0.2	U	0.19	U	0.58	U	0.17	U	0.15	U	0.18	U	0.19	U	0.2	U	0.18	U	0.28	U	0.19	U
Tetrachloroethene	8.1		23	1.8			6.9		2.5		6.5	0.7	200		14		8.9		2.5		7.9	0.7			4.6		0.58		0.35	U	0.42	
2-Hexanone	3.5	U	3.6	0.6	8.8	U	3.4	U	3.1	U	3.7	U	3.5	U	11	U	3.2	U	2.7	U	3.4	U	3.5	U	3.7	U	3.3	U	3.2	U	3.6	U
Dibromochloromethane	1.4	U	1.5	U	3.6	U	1.4	U	1.3	U	1.6	U	1.4	U	4.5	U	1.3	U	1.1	U	1.4	U	1.4	U	1.6	U	1.4	U	1.3	U	1.5	U
1,2-Dibromoethane (EDB)	1.3	U	1.3	U	3.3	U	1.3	U	1.2	U	1.4	U	1.3	U	4.1	U	1.2	U	1	U	1.3	U	1.3	U	1.4	U	1.2	U	1.2	U	1.3	U
Chlorobenzene	0.79	U	0.8	5.4	2	U	0.76	U	0.7	U	0.84	U	0.79	U	2.4	U	0.73	U	0.62	U	0.77	0.4	0.79	U	0.84	U	0.74	U	0.71	U	0.8	U
Ethyl Benzene	0.53		1.1		1.1		2.6		0.26		0.88				0.46	U	1.6		0.12	U	0.48				0.42		1.5		0.31		0.73	
m,p-Xylene	1.5		3.1				10		0.49		2.4				0.93	U	6.4		0.23	U	1.6		0.79		1.3		5.6		0.73		2.4	
o-Xylene	0.43		0.79		0.9		1.9		0.18		0.93				0.46	U	1.1		0.12	U	0.5				0.5		1.2		0.24		0.88	
Styrene	0.73	U	0.74	U	7.4		2.4		2.7		2.2			U	2.3	U	0.67	U	0.57	U	0.72	U	0.73	U	0.78	U	0.68	U	0.66	U	0.74	U
Bromoform	1.8	U	1.8	U	4.4	U	1.7	U	1.6	U	1.9	0.44	1.8	U	5.5	U	1.6	U	1.4	U	1.7	0.29	1.8	U	1.9	U	1.7	U	1.6	U	1.8	U
Cumene	0.84	U	0.86	0.7	2.1	U	0.81	U	0.75	U	0.9	0.4	0.84	U	2.6	U	0.78	U	0.66	U	0.82	U	0.84	U	0.9	U	0.79	U	0.76	U	0.86	U
1,1,2,2-Tetrachloroethane	0.23	U	0.24	U	0.59	U	0.22	U	0.21	U	0.25	0.51	0.23	U	0.73	U	0.22	U	0.18	U	0.23	0.33	0.23	U	0.25	U	0.22	U	0.35	U	0.24	U
Propylbenzene	0.84	U	0.86	U	2.1	U	0.81	U	0.75	U	0.9	0.73	0.84	U	2.6	U	0.78	U	0.66	U	0.82	U	0.84	U	0.9	U	0.79	U	0.76	U	0.86	U
4-Ethyltoluene	0.91		0.86	U	2.1	U	0.81	U	0.75	U	1.4				2.6	U	0.78	U	0.66	U	0.82	U	0.84	U	0.9	U	0.79	U	0.76	U	0.86	U
1,3,5-Trimethylbenzene	0.84	U	0.86	U	2.1	U	0.81	U	0.75	U	0.9	U	0.84	U	2.6	U	0.78	U	0.66	U	0.82	U	0.84	U	0.9	U	0.79	U	0.76	U	0.86	U
1,2,4-Trimethylbenzene	1.1		0.86	U	2.1	U	0.81	U	0.75	U	1.5				2.6	U	0.78	U	0.66	U	0.82	U	0.84	U	0.9	U	0.79	U	0.76	U	0.88	
1,3-Dichlorobenzene	1	U	1	U	2.6	U	0.99	U	0.91	U	1.1	U	1	U	3.2	U	0.95	U	0.8	U	1	U	1	U	1.1	U	0.97	U	0.93	U	1	U
1,4-Dichlorobenzene	1	U	1	U	2.6	U	0.99	U	0.91	U	1.1	0.96	1	U	3.2	U	0.95	U	0.8	U	1	U	1	U	1.1	U	0.97	U	0.93	U	1	U
alpha-Chlorotoluene	0.88	U	0.9	U	2.2	U	0.85	U	0.79	U	0.95	U	0.88	U	2.8	U	0.82	U	0.69	U	0.87	U	0.88	U	0.95	U	0.83	U	0.8	U	0.9	U
1,2-Dichlorobenzene	1	U	1	U	2.6	U	0.99	U	0.91	U	1.1	0.4	1	U	3.2	U	0.95	U	0.8	U	1	U	1	U	1.1	U	0.97	U	0.93	U	1	U
1,2,4-Trichlorobenzene	6.3	U	6.5	U	16	U	6.1	U	5.6	U	6.8	U	6.3	U	20	U	5.9	U	5	U	6.2	U	6.3	U	6.8	U	6	U	5.8	U	6.5	U
Hexachlorobutadiene	9.1	U	9.3	U	23	U	8.7	U	8.1	U	9.8	U	9.1	U	28	U	8.4	U	7.1	U	9	U	9.1	U	9.8	U	8.6	U	8.3	U	9.3	U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 8
Indoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	2624 N. Borthwick Ave. Warehouse		2624 N. Borthwick Ave. Warehouse		2624 N. Borthwick Ave. Warehouse		2624 N. Borthwick Ave. Warehouse	
Sample ID	2624 N. Borthwick		2624 N. Borthwick-Warehouse		2624 N. BORTHWICK-WAREHOUSE		2624 N. BORTHWICK-WAREHOUSE	
Lab Sample ID	0907105C-05		0909291-01		1005544A-02		1008553C-24	
Date Sampled	6/25/2009		9/10/2009		5/20/2010		8/20/2010	
Volatile Organic Compounds (µg/m3)								
Freon 12	1.9		1.8		3.5	U	2.4	
Freon 114	1.1	U	1.1	U	4.9	U	1.6	U
Chloromethane	0.67	J	1.1		1.4	U	1.4	
Vinyl Chloride	0.041	U	0.04	U	0.18	U	0.059	U
1,3-Butadiene	0.36	U	0.34	U	1.6	U	0.51	U
Bromomethane	3.1	U	0.6	U	2.7	U	0.89	U
Chloroethane	0.42	U	0.41	U	1.8	U	0.61	U
Freon 11	1		1.1		4	U	1.3	U
Ethanol	8		5.2		49	J	21	
Freon 113	1.2	U	1.2	U	5.4	U	1.8	U
1,1-Dichloroethene	0.064	U	0.17		0.28	U	0.091	U
Acetone	11		5.2		27		13	
2-Propanol	2.9		1.9	U	8.6	UJ	2.8	U
Carbon Disulfide	2.5	U	2.4	U	11	U	3.6	U
3-Chloropropene	2.5	U	2.4	U	11	U	3.6	U
Methylene Chloride	1.1		16		4.9	U	1.6	U
Methyl tert-butyl ether	0.58	U	0.56	U	2.5	UJ	0.83	U
trans-1,2-Dichloroethene	0.64	U	0.61	U	2.8	U	0.91	U
Hexane	0.71		0.74		2.5	U	0.81	U
1,1-Dichloroethane	0.13	U	0.12		0.57	U	0.19	U
2-Butanone (Methyl Ethyl Ketone)	4.4		2.8		2.4		3.4	U
cis-1,2-Dichloroethene	0.13	U	0.12	U	0.56	U	0.18	U
Tetrahydrofuran	2.4	U	2.3	U	10	U	3.4	U
Chloroform	0.79	U	0.76	U	3.4	U	1.1	U
1,1,1-Trichloroethane	0.18	U	2.3		0.77	U	0.25	U
Cyclohexane	0.55	U	0.53	U	2.4	U	0.79	U
Carbon Tetrachloride	1	U	0.98	U	4.4	U	1.4	U
2,2,4-Trimethylpentane	3.8	U	3.6	U	16	U	5.4	U
Benzene	0.72		1.1		1.6		0.58	
1,2-Dichloroethane	0.13	U	4		0.57	U	0.19	U
Heptane	0.66	U	0.84		2.9	U	0.94	U
Trichloroethene	0.31		3		0.91		0.25	U
1,2-Dichloropropane	0.74	U	1.4		3.2	U	1.1	U
1,4-Dioxane	0.58	U	0.56	U	2.5	U	0.83	U
Bromodichloromethane	1.1	U	1	U	4.7	U	1.5	U
cis-1,3-Dichloropropene	0.73	U	0.7	U	3.2	U	1	U
4-Methyl-2-pentanone	0.66	U	0.63	U	2.9	U	0.94	U
Toluene	4.5		3.4		4.1		1.8	
trans-1,3-Dichloropropene	0.73	U	0.7	U	3.2	U	1	U
1,1,2-Trichloroethane	0.18	U	0.17	U	0.77	U	0.25	U
Tetrachloroethene	23		170		590		12	
2-Hexanone	3.3	U	3.2	U	14	U	4.7	U
Dibromochloromethane	1.4	U	1.3	U	6	U	2	U
1,2-Dibromoethane (EDB)	1.2	U	1.2	U	5.4	U	1.8	U
Chlorobenzene	0.74	U	0.71	U	3.2	U	1	U
Ethyl Benzene	2		8.8		30		0.66	
m,p-Xylene	7.7		32		120		1.9	
o-Xylene	2.3		7.9		30		0.38	
Styrene	0.68	U	0.66	U	3	U	0.98	U
Bromoform	1.7	U	1.6	U	7.3	U	2.4	U
Cumene	0.79	U	0.76	U	3.5	U	1.1	U
1,1,2,2-Tetrachloroethane	0.22	U	0.21	U	0.97	U	0.32	U
Propylbenzene	0.79	U	0.76	U	3.5	U	1.1	U
4-Ethyltoluene	0.79	U	0.8		3.5	U	1.1	U
1,3,5-Trimethylbenzene	0.79	U	0.76	U	3.5	U	1.1	U
1,2,4-Trimethylbenzene	1.1		0.97		3.5	U	1.1	U
1,3-Dichlorobenzene	0.97	U	0.93	U	4.2	U	1.4	U
1,4-Dichlorobenzene	0.97	U	0.93	U	4.2	U	1.4	U
alpha-Chlorotoluene	0.83	U	0.8	U	3.6	U	1.2	U
1,2-Dichlorobenzene	0.97	U	0.93	U	4.2	U	1.4	U
1,2,4-Trichlorobenzene	6	U	5.8	UJ	26	U	8.5	U
Hexachlorobutadiene	8.6	U	8.3	U	38	U	12	U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. $\mu g/m^3$ = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented.
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range.
'6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV).

Table 9
Outdoor Ambient Air Data: VOCs
Tarr, Inc.
Portland, Oregon

Location	North Borthwick Background			North Albina Background			North Page Background			2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2426 N. Borthwick Ave.	2427 N. Borthwick Ave.	2428 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.	2429 N. Borthwick Ave.
Sample ID	A-1	A-1	A-1	A-2	A-2	A-2	A-3	A-3	A-3	VP4-A	VP-4A	VP-4A	VP-4A	VP-4A	VP-5A	VP-5A	VP-5A	VP-5A	VP-5A	VP-6A	VP-6A
Lab Sample ID	0809503B-16	0903664C-21	1.008555E-37	0809503A-02	0903664C-22	1008553E-26	0809503A-04	0903664C-20	1008553E-45	0809503B-10	0903664B-08	0907457-05	1005544A-06	1008553D-40	0809503A-07	0903664B-09	0907457-06	1005544A-07	1008553E-41	1005544A-09	1008553E-42
Date Sampled	9/20/2008	3/20/2009	8/20/2010	9/20/2008	3/20/2009	8/20/2010	9/20/2008	3/20/2009	8/20/2010	9/20/2008	3/21/2009	7/18/2009	05/20/2010	8/20/2010	9/20/2008	3/21/2009	7/18/2009	05/20/2010	8/20/2010	05/20/2010	8/20/2010
Volatile Organic Compounds (µg/m3)																					
Freon 12	3	2.3	2.3	3	2.3	2.3	3.3	2.3	2.3	2.4	2.3	2.2	2.9 U	2.3	3.1	2.5	2.3	3.4	2.2	2.7	2.1
Freon 114	0.94 U	0.98 U	1.2 U	0.94 U	1 U	0.98 U	0.97 U	0.98 U	1.1 U	0.94 U	1.1 U	1 U	4.1 U	2.3 U	0.97 U	1.1 U	1.3 U	1.2 U	1.2 U	1.4 U	1.1 U
Chloromethane	1.5	1.4	0.86	0.86 J J	1.4	1.1	0.94 J J	1.5	0.97	1.3	1.1	0.89	1.2 U	1.1	0.8	0.89	0.84	2	0.97	1.6	1.1
Vinyl Chloride	0.034 U	0.036 U	0.045 U	0.034 U	0.037 U	0.036 U	0.036 U	0.036 U	0.042 U	0.034 U	0.04 U	0.037 U	0.15 U	0.31 U	0.036 U	0.04 U	0.047 U	0.045 U	0.043 U	0.05 U	0.042 U
1,3-Butadiene	0.3 U	0.31 U	0.39 U	0.3 U	0.35	0.31 U	0.31 U	0.31 U	0.36 U	0.3 U	0.34 U	0.32 U	1.3 U	0.72 U	0.31 U	0.34 U	0.4 U	0.39 U	0.37 U	0.43 U	0.36 U
Bromomethane	0.52 U	0.55 U	0.68 U	0.62 U	0.57 U	0.55 U	0.59 U	0.55 U	0.64 U	0.52 U	0.6 U	0.57 U	2.3 U	1.3 U	0.58 U	0.6 U	0.71 U	0.68 U	0.65 U	0.76 U	0.64 U
Chloroethane	0.35 U	0.37 U	0.46 U	0.35 U	0.38 U	0.37 U	0.37 U	0.37 U	0.43 U	0.35 U	0.41 U	0.38 U	1.5 U	0.86 U	0.37 U	0.41 U	0.48 U	0.46 U	0.44 U	0.52 U	0.43 U
Freon 11	2.5	1.3 U	1	1.8	1.4	1.1	1.5	1.3	1.1	2.7	1.4	1.5	3.3 U	1.8 U	1.4	1.5	1.4	1.8	0.98	1.5	1
Ethanol	8.6	6.3	3.1	59	64	4.4	14	4.7	16	130 E	35	6.4	17 J	9.1	9	15	7.7	3.7	26	3.3	18
Freon 113	1 U	1.1 U	1.3 U	1.2	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1 U	1.2 U	1.1 U	4.5 U	2.5 U	1.1 U	1.2 U	1.4 U	1.3 U	1.3 U	1.5 U	1.2 U
1,1-Dichloroethene	0.053 U	0.056 U	0.069 U	0.053 U	0.058 U	0.056 U	0.055 U	0.056 U	0.065 U	0.053 U	0.061 U	0.058 U	0.23 U	0.48 U	0.055 U	0.061 U	0.072 U	0.069 U	0.067 U	0.078 U	0.065 U
Acetone	15	23	12	28	6.2	8.6	28	6	22	230 E	17	360 E	1,800 E	24	13	3.8	39	5.9	52	7.3	35
2-Propanol	2.8	38	2.2 U	1.6 U	1.8 U	17	2	1.7 U	9.4	66	18	21	29 J	5.6	5.8	1.9 U	34	2.4	60	2.4 U	37
Carbon Disulfide	2.1 U	2.2 U	2.7 U	2.1 U	2.3 U	2.2 U	2.2 U	2.2 U	2.6 U	2.1 U	2.4 U	2.3 U	9.1 U	5.1 U	3.4	2.4 U	2.8 U	2.7 U	2.6 U	3 U	2.6 U
3-Chloropropene	--	2.2 U	2.7 U	--	2.3 U	2.2 U	--	2.2 U	2.6 U	--	2.4 U	2.3 U	9.2 U	5.1 U	--	2.4 U	2.9 U	2.7 U	2.6 U	3.1 U	2.6 U
Methylene Chloride	0.93 U	0.98 U	1.2 U	0.93 U	1 U	0.98 U	1	0.98 U	1.1 U	0.93 U	1.1 U	1 U	4.1 U	2.3 U	0.96 U	1.1 U	1.3 U	1.2 U	1.2 U	1.4 U	1.1 U
Methyl tert-butyl ether	0.48 U	0.51 U	0.63 U	0.48 U	0.53 U	0.51 U	0.5 U	0.51 U	0.59 U	0.48 U	0.56 U	0.53 U	2.1 U, J	4.4 U	0.5 U	0.56 U	0.66 U	0.63 U	0.6 U	0.71 U	0.59 U
trans-1,2-Dichloroethene	0.53 U	0.56 U	0.69 U	0.53 U	0.58 U	0.56 U	0.55 U	0.56 U	0.65 U	0.53 U	0.61 U	0.58 U	2.3 U	4.8 U	0.55 U	0.61 U	0.72 U	0.69 U	0.67 U	0.78 U	0.65 U
Hexane	0.47 U	0.5 U	0.62 U	0.47 U	0.98	0.5 U	0.51	0.7	0.58 U	1.2 J J	0.55 U	0.51 U	2.1 U	1.2 U	0.49 U	0.55 U	0.64 U	0.63	0.59 U	0.69 U	0.6
1,1-Dichloroethane	0.11 U	0.11 U	0.14 U	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.13 U	0.11 U	0.12 U	0.12 U	0.47 U	0.99 U	0.11 U	0.12 U	0.15 U	0.14 U	0.14 U	0.16 U	0.13 U
2-Butanone (Methyl Ethyl Ketone)	1.1	7.4	3.1	2.1	1.6	1.1	2.1	0.62	4.2	46	9	1.4	66	2.4	1.7	1.1	2.1	0.54	12	0.75	6.5
cis-1,2-Dichloroethene	0.11 U	0.11 U	0.14 U	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.13 U	0.11 U	0.12 U	0.12 U	0.46 U	0.97 U	0.11 U	0.12 U	0.14 U	0.14 U	0.13 U	0.16 U	0.13 U
Tetrahydrofuran	2 U	2.1 U	2.6 U	2 U	2.2 U	2.1 U	2 U	2.1 U	2.4 U	2 U	2.3 U	2.2 U	8.6 U	4.8 U	2 U	2.3 U	2.7 U	2.6 U	2.5 U	2.9 U	2.4 U
Chloroform	0.65 U	2	0.85 U	0.65 U	0.71 U	0.69 U	0.68 U	0.69 U	0.8 U	0.65 U	0.76 U	0.71 U	2.9 U	1.6 U	0.68 U	0.76 U	0.89 U	0.85 U	0.82 U	0.96 U	0.8 U
1,1,1-Trichloroethane	0.15 U	0.15 U	0.19 U	0.15 U	0.16 U	0.15 U	0.15 U	0.15 U	0.18 U	0.15 U	0.17 U	0.16 U	0.64 U	1.3 U	0.15 U	0.17 U	0.2 U	0.19 U	0.18 U	0.21 U	0.18 U
Cyclohexane	0.46 U	0.48 U	0.6 U	0.46 U	0.5 U	0.48 U	0.48 U	0.48 U	0.56 U	1.2	0.53 U	0.5 U	2 U	1.1 U	0.48 U	0.53 U	0.63 U	0.6 U	0.58 U	0.67 U	0.56 U
Carbon Tetrachloride	0.84 U	0.89 U	1.1 U	0.84 U	0.92 U	0.89 U	0.87 U	0.89 U	1 U	0.84 U	0.98 U	0.93	3.7 U	2 U	0.87 U	0.98 U	1.2 U	1.1 U	1 U	1.2 U	1 U
2,2,4-Trimethylpentane	--	3.3 U	4.1 U	--	3.4 U	3.3 U	--	3.3 U	3.8 U	--	3.6 U	3.4 U	14 U	7.6 U	--	3.6 U	4.3 U	4.1 U	3.9 U	4.6 U	3.8 U
Benzene	0.46	0.87	0.46	0.53	1.5	0.32	1.3	1	0.27	1.7	0.72	0.98	0.98	1.9 U	0.35	0.64	0.98	2	0.31	0.67	0.31
1,2-Dichloroethane	0.11 U	0.11 U	0.14 U	0.11 U	0.12 U	0.11 U	0.11 U	0.11 U	0.13 U	0.11 U	0.12 U	0.12 U	0.47 U	0.99 U	0.11 U	0.12 U	0.15 U	0.14 U	0.14 U	0.16 U	0.13 U
Heptane	0.55 U	0.64 U	0.72 U	0.55 U	0.98	0.58 U	0.57 U	0.58 U	0.67 U	11	5.6	1.3	4.4	1.3 U	0.57 U	1	0.75 U	0.72 U	1.7	0.8 U	1.5
Trichloroethene	0.14 U	0.023 U	0.19 U	0.14 U	0.024 U	0.15 U	0.15 U	0.023 U	0.18 U	0.14 U	0.28	0.16 U	0.63 U	1.3 U	0.15 U	0.28	0.2 U	0.19 U	0.18 U	0.21 U	0.18 U
1,2-Dichloropropane	0.62 U	0.65 U	0.81 U	0.62 U	0.67 U	0.65 U	0.64 U	0.65 U	0.76 U	0.62 U	0.72 U	0.67 U	2.7 U	1.5 U	0.64 U	0.72 U	0.84 U	0.81 U	0.78 U	0.9 U	0.76 U
1,4-Dioxane	0.48 U	0.51 U	0.63 U	0.48 U	0.53 U	0.51 U	0.5 U	0.51 U	0.59 U	0.48 U	0.56 U	0.53 U	2.1 U	3	0.5 U	0.56 U	0.66 U	0.63 U	0.6 U	0.71 U	0.59 U
Bromodichloromethane	0.9 U	0.94 U	1.2 U	0.9 U	0.98 U	0.94 U	0.93 U	0.94 U	1.1 U	0.9 U	1 U	0.98 U	3.9 U	2.2 U	0.93 U	1 U	1.2 U	1.2 U	1.1 U	1.3 U	1.1 U
cis-1,3-Dichloropropene	0.61 U	0.64 U	0.79 U	0.61 U	0.66 U	0.64 U	0.63 U	0.64 U	0.74 U	0.61 U	0.7 U	0.66 U	2.6 U	1.5 U	0.63 U	0.7 U	0.83 U	0.79 U	0.76 U	0.89 U	0.74 U
4-Methyl-2-pentanone	0.55 U	6.4	0.72 U	0.55 U	0.6 U	0.58 U	0.57 U	0.58 U	1.3	0.74	6.4	11	2.4 U	430	0.57 U	0.63 U	2.2	0.72 U	3.6	0.8 U	2.4
Toluene	2.1	6.9	1.4	2	3.2	0.57	2.9	2.1	3.2	14	19	9.2	40	650	1.8	8.3	6.9	1.8	7.2	1.2	6
trans-1,3-Dichloropropene	0.61 U	0.64 U	0.79 U	0.61 U	0.66 U	0.64 U	0.63 U	0.64 U	0.74 U	0.61 U	0.7 U	0.66 U	2.6 U	1.5 U	0.63 U	0.7 U	0.83 U	0.79 U	0.76 U	0.89 U	0.74 U
1,1,2-Trichloroethane	0.15 U	0.15 U	0.19 U	0.15 U	0.16 U	0.15 U	0.15 U	0.15 U	0.18 U	0.15 U	0.17 U	0.16 U	0.64 U	1.3 U	0.15 U	0.17 U	0.2 U	0.19 U	0.18 U	0.21 U	0.18 U
Tetrachloroethene	0.35 U	0.029 U	0.24 U	0.18 U	0.03 U	0.19 U	0.19 U	0.029 U	0.22 U	0.19	1.5	0.41	0.79 U	1.6 U	0.19 U	1.6	0.25 U	0.24 U	0.23 U	0.26 U	0.22 U
2-Hexanone	2.7 U	2.9 U	3.6 U	2.7 U	3 U	2.9 U	2.8 U	2.9 U	3.4 U	2.7 U	3.2 U	3 U	12 U	6.7 U	2.8 U	3.2 U	3.7 U	3.6 U	3.4 U	4 U	3.4 U
Dibromochloromethane	1.1 U	1.2 U	1.5 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	1.4 U	1.1 U	1.3 U	1.2 U	5 U	2.8 U	1.2 U	1.3 U	1.6 U	1.5 U	1.4 U	1.7 U	1.4 U
1,2-Dibromoethane (EDB)	1 U	1.1 U	1.3 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.3 U	1 U	1.2 U	1.1 U	4.5 U	2.5 U	1.1 U	1.2 U	1.4 U	1.3 U	1.3 U	1.5 U	1.3 U
Chlorobenzene	0.62 U	0.65 U	0.8 U	0.62 U	0.67 U	0.65 U	0.64 U	0.65 U	0.76 U	0.62 U	0.71 U	0.67 U	2.7 U	1.5 U	0.64 U	0.71 U	0.84 U	0.8 U	0.77 U	0.9 U	0.76 U
Ethyl Benzene	3.5	3	0.23	0.23	0.48	0.12 U	0.29	0.34	0.39	23	2	3.1	38	1.4	0.57	1.6	2.5	0.29	1.2	0.18	1
m,p-Xylene	17	8.6	0.65	0.72	1.5	0.24 U	0.83	0.88	1.1	110	9.2	14	170	5.1	2.3	6.7	9.5	0.67	4	0.55	3.1
o-Xylene	3.5	1.8	0.21	0.26	0.56	0.12 U	0.28	0.3	0.27	29	2.4	3.2	29	1.9	0.62	1.7	2.1	0.28	0.91	0.18	0.72
Styrene	0.57 U	0.6 U	0.74 U	0.57 U	0.62 U	0.6 U	0.59 U	0.6 U	0.7 U	0.57 U	0.66 U	0.62 U	2.5 U	1.4 U	0.59 U	0.66 U	0.78 U	0.74 U	0.72 U	0.83 U	0.7 U
Bromoform	1.4 U	1.4 U	1.8 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.7 U	1.4 U	1.6 U	1.5 U	6 U	3.4 U	1.4 U	1.6 U	1.9 U	1.8 U	1.7 U	2 U	1.7 U
Cumene	0.66 U	0.69 U	0.86 U	0.66 U	0.72 U	0.69 U	0.68 U	0.69 U	0.81 U	0.66 U	0.76 U	0.72 U	2.9 U	1.6 U	0.68 U	0.76 U	0.9 U	0.86 U	0.82 U	0.96 U	0.81 U
1,1,2,2-Tetrachloroethane	0.18 U	0.19 U	0.24 U	0.18 U	0.2 U	0.19 U	0.19 U	0.19 U	0.22 U	0.18 U	0.21 U	0.2 U	0.8 U	1.7 U	0.19 U	0.21 U	0.25 U	0.24 U	0.23 U	0.27 U	0.22 U
Propylbenzene	0.66 U	0.69 U	0.86 U	0.66 U	0.72 U	0.69 U	0.68 U	0.69 U	0.81 U	0.66 U	0.76 U	0.72 U	2.9 U	1.6 U	0.68 U	0.76 U	0.9 U	0.86 U	0.82 U	0.96 U	0.81 U
4-Ethyltoluene	0.66 U	0.69 U	0.86 U	0.66 U	0.72 U	1.6	0.68 U	0.69 U	0.81 U	1.1	2.6	0.72 U	2.9 U	1.6 U	0.68 U	1.8	0.9 U	0.86 U	0.82 U	0.96 U	0.81 U
1,3,5-Trimethylbenzene	0.66 U	0.69 U	0.86 U	0.66 U	0.72 U	0.69 U	0.68 U	0.69 U	0.81 U	0.66 U	0.92	0.72 U	2.9 U	1.6 U	0.68 U	0.76 U	0.9 U	0.86 U	0.82 U	0.96 U	0.81 U
1,2,4-Trimethylbenzene	0.66 U	0.69 U	0.86 U	0.66 U	0.72 U	1.7	0.68 U	0.69 U	0.81 U	1.2	3	0.72 U	2.9 U	1.6 U	0.68 U	2.1	0.9 U	0.86 U	0.82 U	0.96 U	0.81 U
1,3-Dichlorobenzene	0.8 U	0.85 U	1 U	0.8 U	0.88 U	0.85 U	0.84 U	0.85 U	0.99 U	0.8 U	0.93 U	0.88 U	3.5 U	2 U	0.84 U	0.93 U	1.1 U	1 U	1 U	1.2 U	0.99 U
1,4-Dichlorobenzene	0.8 U	0.85 U	1 U	0.8 U	0.88 U	0.85 U	0.84 U	0.85 U	0.99 U	0.8 U	0.93 U	0.88 U	3.5 U	2 U	0.84 U	0.93 U	1.1 U	1 U	1 U	1.2 U	0.99 U
alpha-Chlorotoluene	0.69 U	0.73 U	0.9 U	0.69 U	0.76 U	0.73 U	0.72 U	0.73 U	0.85 U	0.69 U	0.8 U	0.76 U	3 U	1.7 U	0.72 U	0.8 U	0.95 U	0.9 U	0.87 U	1 U	0.85 U
1,2-Dichlorobenzene	0.8 U	0.85 U	1 U	0.8 U	0.88 U	0.85 U	0.84 U	0.85 U	0.99 U	0.8 U	0.93 U	0.88 U	3.5 U	2 U	0.84 U	0.93 U	1.1 U	1 U	1 U	1.2 U	0.99 U
1,2,4-Trichlorobenzene	5 U	5.2 U	6.5 U	5 U	5.4 U	5.2 U	5.2 U	5.2 U	6.1 U	5 U	5.8 U	5.4 U	22 U	12 U	5.2 U	5.8 U	6.8 U	6.5 U	6.2 U	7.3 U	6.1 U
Hexachlorobutadiene	7.1 U	7.5 U	9.3 U	7.1 U	7.8 U	7.5 U	7.4 U	7.5 U	8.7 U	7.1 U	8.3 U	7.8 U	31 U	17 U	7.4 U	8.3 U	9.8 U	9.3 U	9 U	10 U	8.7 U

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15.
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presentec
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. E = Exceeds instrument calibration range
6. UJ = Non-detected compound associated with low bias in the continuing calibration verification (CCV

Table 10
Chemicals of Potential Concern
Tarr, Inc.
Portland, Oregon

COPCs	Soil	Groundwater	Soil Gas
1,1,1-trichloroethane			X
1,1,2,2-tetrachloroethane			X
1,1,2-trichloroethane			X
1,1-dichloroethane		X	X
1,1-dichloroethene			X
1,2,4-trimethylbenzene			X
1,2-dichlorobenzene			X
1,2-dichloroethane			X
1,2-dichloropropane			X
1,3,5-trimethylbenzene			X
1,3-budadiene			X
1,4-dichlorobenzene			X
1,4-dioxane			X
Benzene		X	X
Benzo(a)anthracene	X		
Benzo(a)pyrene	X		
Benzo(b)fluoranthene	X		
Bromodichloromethane			X
Bromoform			X
Bromomethane			X
Carbon tetrachloride			X
Chlorobenzene			X
Chloroform		X	X
Chloromethane			X
Cis-1,2-dichloroethene		X	
Dibenz(a,h)anthracene	X		
Dibromochloromethane			X
Ethylbenzene	X		
Freon 11			X
Freon 113			X
Hexachlorobutadiene			X
Indeno(1,2,3-cd)pyrene	X		
Methyl tert-butyl ether		X	X
Methylene chloride		X	X
Styrene			X
Tetrachloroethene	X	X	X
Toluene			X
TPHd	X		
TPHg	X	X	
TPHo	X		
Trans-1,2-dichloroethene		X	X
Trichloroethene	X	X	X
Vinyl chloride		X	X

Table 11
Soil Vapor - Vapor Intrusion Screening
Tarr, Inc.
Portland, Oregon

Location	Corner North Albina & North Page				Corner Interstate and Mississipi		2400 Block North Borthwick		2624 North Borthwick		2400 Block North Borthwick		2600 Block North Mississippi						2400 Block North Borthwick		2600 Block North Albina		DEQ RBC	DEQ RBC
Sample ID	VP-12	VP-12	VP-12	VP-12	VP-18	VP-18	VP-19	VP-19	VP-20	VP-20	VP-21	VP-21	VP-22	VP-22	VP-23	VP-23	VP-24	VP-24	VP-25	VP-25	VP-26	VP-26	Soil Gas Vapor	Soil Gas Vapor
Risk Controlling Land Use	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Urban Residential	Urban Residential	Urban Residential	Urban Residential	Occupational	Occupational	Occupational	Occupational	Urban Residential	Urban Residential	Intrusion into	Intrusion into
Depth Interval (feet)	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	3.8-5	Buildings |	Buildings |
Date Sampled	9/20/2008	3/20/2009	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	5/20/2010	8/20/2010	Urban	Occupational
Volatile Organic Compounds (µg/m3)																								
Chloromethane	0.6 U	0.3 U	0.34 U	6.4 U	0.47 U	0.31 U	0.45 U	0.59	1.6	1.4	11 U	16 U	0.35 U	1.1	0.32 U	1.6	10 U	15 U	0.34 U	0.3 U	0.29 U	0.35 U	19,000	390,000
Vinyl Chloride	0.075 U	0.037 U	0.042 U	2 U	0.058 U	0.13 U	0.056 U	0.2 U	0.041 U	0.04 U	3.3 U	5 U	0.11	0.04 U	0.04 U	0.037 U	3.1 U	4.8 U	0.042 U	0.12 U	0.036 U	0.048 U	41	2,800
1,3-Butadiene	0.64 U	0.32 U	0.36 U	1.7 U	0.51 U	0.34 U	0.48 U	0.35 U	0.36 U	0.34 U	2.9 U	4.4 U	0.74	0.35 U	0.34 U	0.32 U	2.7 U	4.1 U	0.36 U	0.32 U	0.31 U	0.38 U	8,800	--
Bromomethane	1.1 U	0.57 U	0.64 U	3 U	0.89 U	0.59 U	0.85 U	0.61 U	0.62 U	0.6 U	5.1 U	7.7 U	0.65 U	0.61 U	0.6 U	2.9	4.7 U	7.2 U	0.64 U	0.57 U	0.55 U	0.66 U	1,000	22,000
Chloroethane	0.77 U	0.38 U	0.43 U	2 U	0.6 U	0.4 U	0.58 U	0.42 U	0.42 U	0.41 U	3.4 U	5.2 U	0.44 U	0.42 U	0.41 U	0.38 U	3.2 U	4.9 U	0.43 U	0.38 U	0.37 U	0.45 U	2,100,000	43,800,000
Freon 11	2.9	1.8	1.8	4.4 U	2.4	3.4	2.2	2.2	2	2.1	7.4 U	11 U	1.8	1.2	2.5	1.8	6.8 U	10 U	1.4	2.1	1.2	1.6	150,000	3,100,000
Freon 113	2.2 U	1.1 U	1.2 U	5.9 U	1.8 U	1.2 U	1.7 U	1.2 U	1.2 U	1.2 U	10 U	15 U	1.3 U	1.2 U	1.2 U	1.1 U	9.4 U	14 U	1.2 U	1.1 U	1.1 U	1.6	6,300,000	131,400,000
1,1-Dichloroethene	0.12 U	0.058 U	0.065 U	3.1 U	0.091 U	0.2 U	0.087 U	0.31 U	0.064 U	0.061 U	5.2 U	7.8 U	1.1	0.063 U	0.061 U	0.058 U	4.8 U	7.4 U	0.065 U	0.19 U	0.056 U	0.075 U	42,000	880,000
Methylene Chloride	2 U	1 U	1.1 U	2.7 U	1.6 U	1 U	1.5 U	1.1 U	1.1 U	1.2	4.6 U	6.9 U	5.2	1.2	1.1 U	1.7	4.2 U	6.5 U	1.1 U	3.4	0.98 U	1.2 U	2,800	26,000
Methyl tert-butyl ether	1 U	0.53 U	0.59 U	2.8 U	0.82 U	1.8 U	0.79 U	2.8 U	0.58 U	0.56 U	4.7 U	7.1 U	0.6 U	0.57 U	0.56 U	0.53 U	4.4 U	6.7 U	0.59 U	1.8 U	0.51 U	0.68 U	5,100	47,000
trans-1,2-Dichloroethene	1.2 U	0.58 U	0.65 U	3.1 U	0.91 U	2 U	0.87 U	3.1 U	0.64 U	0.61 U	5.2 U	7.8 U	0.67 U	0.63 U	0.61 U	0.58 U	4.8 U	7.4 U	0.65 U	1.9 U	0.56 U	0.75 U	13,000	260,000
1,1-Dichloroethane	0.24 U	0.12 U	0.13 U	3.1 U	0.18 U	0.41 U	0.18 U	0.64 U	0.13 U	0.12 U	5.3 U	8 U	0.22	0.13 U	0.12 U	0.12 U	4.9 U	7.5 U	0.13 U	0.39 U	0.11 U	0.15 U	830	7,700
Chloroform	12 U	0.71 U	7.6	10	1.2	0.74 U	2.2	0.9	0.79 U	0.76 U	6.4 U	9.6 U	2.6	0.77 U	22	0.71 U	15	18	2.4	0.71 U	2.6	0.83 U	58	530
1,1,1-Trichloroethane	2.4 U	0.31	1.3	4.2 U	5.4	5.3	8.8	18	0.18 U	0.17 U	13	14	12	0.28	3.1	0.16 U	94	94	2.3	4.2	20	89	1,000,000	21,900,000
Carbon Tetrachloride	1.8 U	0.92 U	1 U	4.9 U	1.4 U	0.96 U	1.4 U	0.99 U	1 U	0.98 U	8.2 U	12 U	1 U	0.99 U	0.98 U	0.92 U	7.7 U	12 U	1 U	0.92 U	0.89 U	1.1 U	220	2,000
Benzene	0.47 U	0.23 U	0.26 U	2.5 U	0.36 U	0.81 U	0.35 U	1.3 U	0.62	0.35	4.2 U	6.3 U	1.2	0.53	0.25 U	0.48	3.9 U	5.9 U	0.26 U	0.78 U	0.22 U	0.3 U	170	1,600
1,2-Dichloroethane	0.24 U	0.12 U	0.13 U	3.1 U	0.18 U	0.41 U	0.18 U	0.64 U	0.13 U	0.12 U	5.3 U	8 U	0.14 U	0.13 U	0.12 U	0.12 U	4.9 U	7.5 U	0.13 U	0.39 U	0.11 U	0.15 U	51	470
Trichloroethene	0.31 U	0.16 U	0.18 U	4.2 U	0.82	0.77	8.2	17	0.17 U	0.17 U	16	14	81	0.95	0.17 U	0.16 U	*770*	*940*	0.42	0.52 U	2.2	4.0	320	3,000
1,2-Dichloropropane	1.3 U	0.67 U	0.76 U	3.6 U	1 U	0.7 U	1 U	0.73 U	0.74 U	0.72 U	6 U	9.1 U	0.78 U	0.73 U	0.72 U	0.67 U	5.6 U	8.6 U	0.76 U	0.67 U	0.65 U	0.79 U	830	18,000
1,4-Dioxane	1 U	0.53 U	0.59 U	11 U	0.82 U	0.55 U	0.79 U	0.57 U	0.58 U	0.58	19 U	28 U	0.6 U	0.57 U	0.56 U	0.53 U	18 U	27 U	0.59 U	0.53 U	0.51 U	0.74	36	--
Bromodichloromethane	2 U	0.98 U	1.1 U	5.2 U	1.5 U	1 U	1.5 U	1.0 U	1.1 U	1 U	8.8 U	13 U	1.1 U	1 U	1 U	0.98 U	8.2 U	12 U	1.1 U	0.98 U	0.94 U	1.1 U	--	330
Toluene	4.7	0.38 U	0.36	2.9 U	0.88	0.38 U	0.84	0.60	2.5	0.91	4.9 U	7.4 U	9.7	1.2	0.61	1.7	4.6 U	7 U	0.31	0.37 U	1.2	0.37	1,000,000	21,900,000
1,1,2-Trichloroethane	0.32 U	0.16 U	0.18 U	4.2 U	0.25 U	0.55 U	0.24 U	0.86 U	0.18 U	0.17 U	7.1 U	11 U	0.18 U	0.17 U	0.17 U	0.16 U	6.6 U	10 U	0.18 U	0.53 U	0.15 U	0.21 U	42	770
Tetrachloroethene	150	11 U	60	140	290	460	550	890	8.7	21	3,500	4,000	150	3.9	89	0.94	3,200	4,000	330	670	110	180	5,100	47,000
Dibromochloromethane	2.5 U	1.2 U	1.4 U	6.6 U	2 U	1.3 U	1.9 U	1.3 U	1.4 U	1.3 U	11 U	17 U	1.4 U	1.3 U	1.3 U	1.2 U	10 U	16 U	1.4 U	1.2 U	1.2 U	1.4 U	49	450
Chlorobenzene	1.3 U	0.67 U	0.76 U	3.6 U	1 U	0.7 U	1 U	0.73 U	0.74 U	0.71 U	6 U	9.1 U	0.77 U	0.73 U	0.71 U	0.67 U	5.6 U	8.6 U	0.76 U	0.67 U	0.65 U	0.79 U	10,000	220,000
Styrene	1.2 U	0.62 U	0.7 U	3.3 U	0.98 U	0.65 U	0.93 U	0.83	0.68 U	0.66 U	5.6 U	8.4 U	0.72 U	0.67 U	0.66 U	0.62 U	5.2 U	7.9 U	0.7 U	0.62 U	0.6 U	0.73 U	210,000	4,400,000
Bromoform	3 U	1.5 U	1.7 U	8 U	2.4 U	1.6 U	2.3 U	1.6 U	1.7 U	1.6 U	14 U	20 U	1.7 U	1.6 U	1.6 U	1.5 U	13 U	19 U	1.7 U	1.5 U	1.4 U	1.8 U	1,200	11,000
1,1,2,2-Tetrachloroethane	0.4 U	0.2 U	0.22 U	5.3 U	0.31 U	0.7 U	0.3 U	1.1 U	0.22 U	0.21 U	9 U	14 U	0.23 U	0.22 U	0.21 U	0.2 U	8.4 U	13 U	0.22 U	0.67 U	0.19 U	0.26 U	23	210
1,3,5-Trimethylbenzene	1.4 U	0.72 U	0.81 U	3.8 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	0.82 U	0.78 U	0.76 U	0.72 U	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U	1,300	26,000
1,2,4-Trimethylbenzene	1.4 U	0.72 U	0.81 U	3.8 U	1.1 U	0.75 U	1.1 U	0.78 U	0.79 U	0.76 U	6.4 U	9.7 U	1.1	0.78	0.76 U	0.74	6 U	9.1 U	0.81 U	0.72 U	0.69 U	0.84 U	1,500	31,000
1,4-Dichlorobenzene	1.8 U	0.88 U	0.99 U	4.6 U	1.4 U	0.91 U	1.3 U	0.95 U	0.97 U	0.93 U	7.9 U	12 U	1 U	0.95 U	0.93 U	0.88 U	7.3 U	11 U	0.99 U	0.88 U	0.85 U	1 U	120	1,100
1,2-Dichlorobenzene	1.8 U	0.88 U	0.99 U	4.6 U	1.4 U	0.91 U	1.3 U	0.95 U	0.97 U	0.93 U	7.9 U	12 U	1 U	0.95 U	0.93 U	0.88 U	7.3 U	11 U	0.99 U	0.88 U	0.85 U	1 U	42,000	880,000
Hexachlorobutadiene	16 U	7.8 U	8.7 U	33 U	12 U	8.1 U	12 U	8.4 U	8.6 U	8.3 U	56 U	84 U	9 U	8.4 U	8.3 U	7.8 U	52 U	79 U	8.7 U	7.8 U	7.5 U	9.1 U	--	--

Notes:
1. VOCs = Volatile organic compounds by EPA Method TO-15
2. µg/m^3 = Micrograms per meter cubed.
3. U = The compound was analyzed for but was not detected at or above the detection limit presented
4. J = The data is considered to be an estimated value based on the QA/QC review.
5. Shaded cells highlight detected concentrations of listed analyte
6. *Italics* indicate detected concentrations that exeed urban residential soil vapor-vapor intrusion RBC

Table 12
Groundwater Vapor Intrusion Screening
Tarr, Inc.
Portland, Oregon

Compound	Detection Frequency			%	MRL		Detected		Vapor Intrusion
					min	max	min	max	Urban Residential
VOCs in Groundwater (µg/L)									
Benzene	0	/	10	0%	1	1	--	--	510
Chloroform	2	/	10	20%	1	1	4.7	15	220
1,1-Dichloroethane (1,1-DCA)	0	/	10	0%	1	1	--	--	690
cis-1,2-Dichloroethene	4	/	13	31%	1	1	1.13	2.3	--
trans-1,2-Dichloroethene	0	/	13	0%	1	1	--	--	28,000
Methyl-t-butylether (MTBE)	0	/	10	0%	1	1	--	--	110,000
Methylene Chloride (Dichloromethane)	0	/	10	0%	5	5	--	--	18,000
Tetrachloroethene (PCE)	8	/	13	62%	1	1	1.28	34.2	5,900
Trichloroethene (TCE)	7	/	13	54%	1	1	1.06	8.8	380
Vinyl Chloride	3	/	13	23%	1	1	--	--	22

Notes:

1. VOCs = Volatile organic compounds by EPA Method 8260.
2. µg/L = Micrograms per liter.
3. MRL = Method Reporting Limit
4. J = Estimated Concentration
5. -- = Not Applicable or Not Detected.
6. RBDM Guidance (DEQ, 2003) unless noted otherwise. Default values from table updated March, 2012.

Table 13
Summary of EPC
Tarr, Inc.
Portland, Oregon

Medium	Location	Chemical	Detection Frequency				Detection Limit Range		Low Detection Frequency	Data Distribution 90% UCL Decision	Concentration				
											Mean of Detects	Maximum	90% UCL	EPC	
			Det.	/	Total	%	Min.	Max.						CTE	RME
Soil in mg/kg	0 to 3 Feet	Gasoline-Range Organics	4	/	9	44%	3.76	8.68	x	90% KM (Percentile Bootstrap) UCL	701	1,850	1,022	701	1022
		Diesel-Range Organics	4	/	16	25%	15.3	320	x	~~No distribution~~	2,309	8,720		2309	8720
		Oil-Range Organics	5	/	16	31%	30.7	32.6	x	90% KM (Percentile Bootstrap) UCL	2539	7,410	1,680	2539	1680
		Ethylbenzene	3	/	37	8%	0.00274	1.3	x	~~No distribution~~	7.2	17.3		7.2	17.3
		Tetrachloroethene	35	/	37	95%	0.201	5.7		90% KM Chebyshev	12.4	240	31	12.4	31.4
		Trichloroethene	18	/	37	49%	0.00235	5.7		90% KM Chebyshev	4.9	76.1	8.63	4.9	8.6
		Benzo(a)anthracene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.35	0.55		0.4	0.5
		Benzo(a)pyrene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.55	0.82		0.5	0.8
		Benzo(b)fluoranthene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.47	0.73		0.5	0.7
		Dibenz(a,h,)anthracene	1	/	8	13%	0.0165	0.431	x	~~No distribution~~	0.04	0.04		0.0	0.0
		Indeno(1,2,3-cd)pyrene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.39	0.56		0.4	0.6
Soil in mg/kg	0 to 15 Feet	Gasoline-Range Organics	5	/	13	38%	3.55	8.68	x	90% KM (Percentile Bootstrap) UCL	563	1,850	444	563	444
		Diesel-Range Organics	4	/	24	17%	1.66	320	x	~~No distribution~~	2,309	8,720		2309.0	8720
		Oil-Range Organics	5	/	24	21%	30.5	7410	x	90% KM (Percentile Bootstrap) UCL	717.7	7,410		718	7410
		Ethylbenzene	4	/	75	5%	0.00274	1.3	x	~~No distribution~~	5.6	17.3		5.6	17.3
		Tetrachloroethene	68	/	75	91%	0.0893	5.7		90% KM Chebyshev	8.5	240	18	8.5	18.0
		Trichloroethene	38	/	75	51%	0.00226	5.7		90% KM Chebyshev	2.55	76.1	4.4	2.6	4.4
		Benzo(a)anthracene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.35	0.55		0.4	0.5
		Benzo(a)pyrene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.55	0.82		0.5	0.8
		Benzo(b)fluoranthene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.47	0.73		0.5	0.7
		Dibenz(a,h,)anthracene	1	/	8	13%	0.0165	0.431	x	~~No distribution~~	0.04	0.04		0.0	0.0
		Indeno(1,2,3-cd)pyrene	2	/	8	25%	0.0165	0.321	x	~~No distribution~~	0.39	0.56		0.4	0.6
Groundwater in µg/L	MW-8	Benzene	1	/	19	5%	10	200	x	~~No distribution~~	4.3	4		4.3	4.3
		Chloroform	2	/	19	11%	10	200	x	~~No distribution~~	102.8	202		102.8	202.0
		1,1-Dichloroethane	2	/	19	11%	10	200	x	~~No distribution~~	21.7	26		21.7	26.0
		cis-1,2-Dichloroethene	19	/	19	100%	--	--		90% Students-t UCL	525	1,010	620	525	620
		trans-1,2-Dichloroethene	2	/	19	11%	10	200	x	~~No distribution~~	21.6	32		21.6	32.0
		Methyl-t-butylether	0	/	19	0%	10	200	x	~~No distribution~~	ND	ND		NC	NC
		Methylene Chloride	2	/	19	11%	50	1,000	x	~~No distribution~~	22.4	42		22.4	42
		Tetrachloroethene	19	/	19	100%	--	--		90% Students-t UCL	6,715	16,100	8,118	6,715	8,118
		Trichloroethene	19	/	19	100%	--	--		90% Students-t UCL	2,451	5,840	2,938	2,451	2,938
		Vinyl Chloride	0	/	19	0%	10	200	x	~~No distribution~~	ND	ND		NC	NC
Groundwater in µg/L	MW-10	Benzene	0	/	19	0%	2	20	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	2	/	19	11%	2	20	x	~~No distribution~~	10.1	19.5		10.1	19.5
		1,1-Dichloroethane	1	/	19	5%	1	20	x	~~No distribution~~	1	1		1.0	1.0
		cis-1,2-Dichloroethene	19	/	19	100%	--	--		90% Students-t UCL	22	36	24	22	24
		trans-1,2-Dichloroethene	0	/	19	0%	2	20	x	~~No distribution~~	ND	ND		NC	NC
		Methyl-t-butylether	0	/	19	0%	2	20	x	~~No distribution~~	ND	ND		NC	NC
		Methylene Chloride	2	/	19	11%	10	100	x	~~No distribution~~	3.7	6.4		3.7	6
		Tetrachloroethene	19	/	19	100%	--	--		90% Students-t UCL	316	595	356	316	356
		Trichloroethene	19	/	19	100%	--	--		90% Students-t UCL	110	185	122	110	122
		Vinyl Chloride	0	/	19	0%	2	20	x	~~No distribution~~	ND	ND		NC	NC
Groundwater in µg/L	MW-12	Benzene	0	/	8	0%	0.2	1	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	1	/	8	13%	1	1	x	~~No distribution~~	0.7	0.7		0.7	0.7
		1,1-Dichloroethane	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
		cis-1,2-Dichloroethene	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
		trans-1,2-Dichloroethene	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
		Methyl-t-butylether	0	/	8	0%	1	1	x	~~No distribution~~	ND	ND		NC	NC
		Methylene Chloride	0	/	8	0%	5	5	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% Approximate Gamma UCL	5	14	7	5	7
		Trichloroethene	8	/	8	100%	--	--		90% Students-t UCL	4	6	5	4	5
		Vinyl Chloride	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
Groundwater in µg/L	MW-13	Benzene	0	/	8	0%	1	10	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	8	0%	2	10		~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	8	0%	2	10	x	~~No distribution~~	ND	ND		NC	NC
		cis-1,2-Dichloroethene	8	/	8	100%	--	--		90% Approximate Gamma UCL	14.1	18	16.4	14	16
		trans-1,2-Dichloroethene	0	/	8	0%	2	10	x	~~No distribution~~	ND	ND		NC	NC
		Methyl-t-butyl ether	0	/	8	0%	2	10	x	~~No distribution~~	ND	ND		NC	NC
		Methylene Chloride	0	/	8	0%	10	25	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% Students-t UCL	195	270	221	195	221
		Trichloroethene	8	/	8	100%	--	--		90% Students-t UCL	58	76	64	57.6	64
		Vinyl Chloride	0	/	8	0%	2	10	x	~~No distribution~~	ND	ND		NC	NC
Groundwater in µg/L	MW-14	Benzene	0	/	8	0%	1	5	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	8	0%	1	5	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	8	0%	1	5	x	~~No distribution~~	ND	ND		NC	NC
		cis-1,2-Dichloroethene	8	/	8	100%	--	--		90% Students-t UCL	10.5	14	11.59	10	12
		trans-1,2-Dichloroethene	0	/	8	0%	1	5	x	~~No distribution~~	ND	ND		NC	NC
		Methyl-t-butyl ether	0	/	8	0%	1	5	x	~~No distribution~~	ND	ND		NC	NC
		Methylene Chloride	0	/	8	0%	5	25	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% Students-t UCL	147	220	167	147	167
		Trichloroethene	8	/	8	100%	--	--		90% Students-t UCL	47	62	52	46.9	52
		Vinyl Chloride	0	/	8	0%	1	5	x	~~No distribution~~	ND	ND		NC	NC
Groundwater in µg/L	MW-15	Benzene	0	/	8	0%	0.2	1	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
		cis-1,2-Dichloroethene	4	/	8	50%	1	1	x	90% KM (Percentile Bootstrap) UCL	1.9	3	2.2	2	2
		trans-1,2-Dichloroethene	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC
		Methyl-t-butyl ether	0	/	8	0%	1	1	x	~~No distribution~~	ND	ND		NC	NC
		Methylene Chloride	0	/	8	0%	5	5	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% Students-t UCL	12	28	17	12	17
		Trichloroethene	8	/	8	100%	--	--		90% Approximate Gamma UCL	3	7	5	3.4	5
		Vinyl Chloride	0	/	8	0%	0.5	1	x	~~No distribution~~	ND	ND		NC	NC

Please refer to notes at end of table.

Table 13
Summary of EPC
Tarr, Inc.
Portland, Oregon

Medium	Location	Chemical	Detection Frequency				Detection Limit Range		Low Detection Frequency	Data Distribution 90% UCL Decision	Concentration				
											Mean of Detects	Maximum	90% UCL	EPC	
			Det.	/	Total	%	Min.	Max.						CTE	RME
Outdoor Air in µg/m^3	Facility Areas	Chloromethane	6	/	6	100%	--	--	x	~~No distribution~~	0.97	1.3		1.0	1.3
		Vinyl chloride	0	/	6	0%	0.034	0.047	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	6	0%	0.3	0.4	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	0	/	6	0%	0.52	0.71	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	6	0%	0.35	0.48	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	6	/	6	100%	--	--	x	No distribution	1.7	2.7		1.7	2.7
		Freon 113	0	/	6	0%	1	1.4	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	0	/	6	0%	0.053	0.072	x	~~No distribution~~	ND	ND		NC	NC
		Methylene chloride	0	/	6	0%	0.93	1.3	x	~~No distribution~~	ND	ND		NC	NC
		Methyl tert-butyl ether	0	/	6	0%	0.48	0.66	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	6	0%	0.53	0.72	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	6	0%	0.11	0.15	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	6	0%	0.65	0.89	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	0	/	6	0%	0.15	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Carbon tetrachloride	1	/	6	17%	0.84	1.2	x	~~No distribution~~	0.93	0.93		0.9	0.9
		Benzene	6	/	6	100%	--	--	x	No distribution	0.90	1.7		0.9	1.7
		1,2-Dichloroethane	0	/	6	0%	0.11	0.15	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	1	/	6	17%	0.14	0.2	x	~~No distribution~~	0.26	0.26		0.3	0.3
		1,2-Dichloropropane	0	/	6	0%	0.62	0.84	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	6	0%	0.48	0.66	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	6	0%	0.9	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	6	/	6	100%	--	--	x	No distribution	9.9	19		9.9	19.0
		1,1,2-Trichloroethane	0	/	6	0%	0.15	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	4	/	6	67%	0.19	0.25	x	~~No distribution~~	0.93	1.6		0.9	1.6
		Dibromochloromethane	0	/	6	0%	1.1	1.6	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	6	0%	0.62	0.84	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	6	0%	0.57	0.78	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	6	0%	1.4	1.9	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	6	0%	0.18	0.25	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	6	0%	0.66	0.9	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	3	/	6	50%	0.68	0.9	x	No distribution	2.1	3		2.1	3.0
		1,4-Dichlorobenzene	0	/	6	0%	0.8	1.1	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	6	0%	0.8	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	6	0%	7.1	9.8	x	~~No distribution~~	ND	ND		NC	NC
Outdoor Air in µg/m3	Non-Facility Areas	Chloromethane	6	/	6	100%	--	--	x	No distribution	1.3	1.5		1.3	1.5
		Vinyl chloride	0	/	6	0%	0.034	0.037	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	1	/	6	17%	0.3	0.31	x	~~No distribution~~	0.35	0.35		0.4	0.4
		Bromomethane	0	/	6	0%	0.52	0.62	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	6	0%	0.35	0.38	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	5	/	6	83%	1.3	1.3	x	~~No distribution~~	1.7	2.5		1.7	2.5
		Freon 113	1	/	6	17%	1	1.1	x	~~No distribution~~	1.2	1.2		1.2	1.2
		1,1-Dichloroethene	0	/	6	0%	0.053	0.058	x	~~No distribution~~	ND	ND		NC	NC
		Methylene chloride	1	/	6	17%	0.93	1	x	~~No distribution~~	1	1		1.0	1.0
		Methyl tert-butyl ether	0	/	6	0%	0.48	0.53	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	6	0%	0.53	0.58	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	6	0%	0.11	0.12	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	1	/	6	17%	0.65	0.71	x	~~No distribution~~	2	2		2.0	2.0
		1,1,1-Trichloroethane	0	/	6	0%	0.15	0.16	x	~~No distribution~~	ND	ND		NC	NC
		Carbon tetrachloride	0	/	6	0%	0.84	0.92	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	6	/	6	100%	--	--	x	No distribution	0.94	1.5		0.9	1.5
		1,2-Dichloroethane	0	/	6	0%	0.11	0.12	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	0	/	6	0%	0.023	0.15	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichloropropane	0	/	6	0%	0.62	0.67	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	6	0%	0.48	0.53	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	6	0%	0.9	0.98	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	6	/	6	100%	--	--	x	~~No distribution~~	3.2	6.9		3.2	6.9
		1,1,2-Trichloroethane	0	/	6	0%	0.15	0.16	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	0	/	6	0%	0.029	0.35	x	~~No distribution~~	ND	ND		NC	NC
		Dibromochloromethane	0	/	6	0%	1.1	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	6	0%	0.62	0.67	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	6	0%	0.57	0.62	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	6	0%	1.4	1.5	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	6	0%	0.18	0.2	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	6	0%	0.66	0.72	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	0	/	6	0%	0.66	0.72	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dichlorobenzene	0	/	6	0%	0.8	0.88	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	6	0%	0.8	0.88	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene.	0	/	6	0%	7.1	7.8	x	~~No distribution~~	ND	ND		NC	NC
Indoor Air in µg/m3	2429 North Borthwick-Office	Chloromethane	6	/	6	100%	--	--	x	~~No distribution~~	1.2	1.6		1.2	1.6
		Vinyl chloride	0	/	6	0%	0.036	0.062	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	6	0%	0.31	0.54	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	1	/	6	17%	0.61	0.94	x	~~No distribution~~	1	1		1	1
		Chloroethane	0	/	6	0%	0.37	0.64	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	4	/	6	67%	1.4	1.4	x	~~No distribution~~	1.4	1.6		1.4	1.6
		Freon 113	2	/	6	33%	1.2	1.6	x	~~No distribution~~	1.5	1.9		1.5	1.9
		1,1-Dichloroethene	2	/	6	33%	0.063	0.085	x	~~No distribution~~	0.088	0.12		0.1	0.1
		Methylene chloride	2	/	6	33%	1.1	1.5	x	~~No distribution~~	5.5	8.6		5.5	8.6
		Methyl tert-butyl ether	0	/	6	0%	0.51	0.88	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	6	0%	0.56	0.96	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	6	0%	0.11	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	6	0%	0.69	1.2	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	3	/	6	50%	0.15	0.2	x	~~No distribution~~	0.37	0.51		0.4	0.5
		Carbon tetrachloride	0	/	6	0%	0.89	1.5	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	6	/	6	100%	--	--	x	~~No distribution~~	0.86	1.2		0.9	1.2
		1,2-Dichloroethane	0	/	6	0%	0.11	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	4	/	6	67%	0.17	0.19	x	~~No distribution~~	2.0	3.6		2.0	3.6
		1,2-Dichloropropane	0	/	6	0%	0.65	1.1	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	6	0%	0.51	0.88	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	6	0%	0.94	1.6	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	6	/	6	100%	--	--	x	~~No distribution~~	58.5	110		58.5	110.0
		1,1,2-Trichloroethane	0	/	6	0%	0.15	0.26	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	6	/	6	100%	--	--	x	~~No distribution~~	28.3	82		28.3	82.0
		Dibromochloromethane	0	/	6	0%	1.2	2.1	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	6	0%	0.65	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	6	0%	0.6	1	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	6	0%	1.4	2.5	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	6	0%	0.19	0.33	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	3	/	6	50%	0.78	0.88	x	~~No distribution~~	1.4	1.6		1.4	1.6
		1,2,4-Trimethylbenzene	3	/	6	50%	0.78	0.88	x	~~No distribution~~	3.9	5.0		3.9	5.0
		1,4-Dichlorobenzene	0	/	6	0%	0.85	1.5	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	6	0%	0.85	1.5	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	6	0%	7.5	13	x	~~No distribution~~	ND	ND		NC	NC

Please refer to notes at end of table.

Table 13
Summary of EPC
Tarr, Inc.
Portland, Oregon

Medium	Location	Chemical	Detection Frequency				Detection Limit Range		Low Detection Frequency	Data Distribution 90% UCL Decision	Concentration				
											Mean of Detects	Maximum	90% UCL	EPC	
			Det.	/	Total	%	Min.	Max.						CTE	RME
Indoor Air in µg/m3	2429 North Borthwick-Warehouse	Chloromethane	5	/	8	63%	0.87	3.5	x	90% KM (t) UCL	1.1	1.4	1.2	1.1	1.2
		Vinyl chloride	0	/	8	0%	0.034	0.24	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	8	0%	0.3	2.1	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	0	/	8	0%	0.52	3.7	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	8	0%	0.35	2.5	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	1	/	8	13%	1.6	5.4	x	~~No distribution~~	2.6	2.6		2.6	2.6
		Freon 113	0	/	8	0%	1	7.4	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	0	/	8	0%	0.053	0.38	x	~~No distribution~~	ND	ND		NC	NC
		Methylene chloride	4	/	8	50%	2.4	12	x	~~No distribution~~	8.3	19	10.2	8.3	10.2
		Methyl tert-butyl ether	0	/	8	0%	0.48	3.5	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	8	0%	0.53	3.8	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	8	0%	0.11	0.78	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	8	0%	0.65	4.7	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	1	/	8	13%	0.15	1	x	~~No distribution~~	0.47	0.47		0.5	0.5
		Carbon tetrachloride	0	/	8	0%	0.84	6	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	6	/	8	75%	1.5	2.7	x	90% KM (t) UCL	0.8	0.94	0.9	0.8	0.9
		1,2-Dichloroethane	0	/	8	0%	0.11	0.78	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	5	/	8	63%	0.38	1.8	x	90% KM (t) UCL	2.3	6.5	2.8	2.3	2.8
		1,2-Dichloropropane	0	/	8	0%	0.62	4.4	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	8	0%	0.48	3.4	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	8	0%	0.38	6.4	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	8	/	8	100%	--	--		90% Students-t UCL	230.1	520	305.6	230	306
		1,1,2-Trichloroethane	0	/	8	0%	0.15	1	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% KM Chebyshev	13.7	70	38.3	13.7	38.3
		Dibromochloromethane	0	/	8	0%	1.1	8.2	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	8	0%	0.62	4.4	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	8	0%	0.57	4.1	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	8	0%	1.4	9.9	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	8	0%	0.18	1.3	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	3	/	8	38%	1.4	8.4	x	90% KM Chebyshev	12.1	43	23.5	12.1	23.5
		1,2,4-Trimethylbenzene	6	/	8	75%	2.1	8.4	x	90% KM Chebyshev	26.0	130	68.6	26.0	68.6
		1,4-Dichlorobenzene	0	/	8	0%	0.8	5.8	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	8	0%	0.8	5.8	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	8	0%	7.1	51	x	~~No distribution~~	ND	ND		NC	NC
Indoor Air in µg/m3	2429 North Borthwick-Shop	Chloromethane	2	/	3	67%	--	--	x	~~No distribution~~	1.25	1.3		1.3	1.3
		Vinyl chloride	0	/	3	0%	0.04	0.068	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	1	/	3	33%	0.35	0.59	x	~~No distribution~~	0.62	0.62		0.6	0.6
		Bromomethane	1	/	3	33%	1	3.1	x	~~No distribution~~	1.6	1.6		1.6	1.6
		Chloroethane	0	/	3	0%	0.42	0.71	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	2	/	3	67%	1.5	1.5	x	~~No distribution~~	1.45	1.9		1.5	1.9
		Freon 113	0	/	3	0%	1.2	2	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	0	/	3	0%	0.063	0.11	x	~~No distribution~~	ND	ND		NC	NC
		Methylene chloride	1	/	3	33%	1.1	1.9	x	~~No distribution~~	0.63	0.63		0.6	0.6
		Methyl tert-butyl ether	0	/	3	0%	0.57	0.97	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	3	0%	0.63	1.1	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	3	0%	0.13	0.22	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	3	0%	0.77	1.3	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	0	/	3	0%	0.17	0.29	x	~~No distribution~~	ND	ND		NC	NC
		Carbon tetrachloride	0	/	3	0%	0.99	1.7	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	3	/	3	100%	--	--	x	~~No distribution~~	2.15	5.2		2.2	5.2
		1,2-Dichloroethane	0	/	3	0%	0.13	0.22	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	1	/	3	33%	0.17	0.29	x	~~No distribution~~	0.64	0.64		0.6	0.6
		1,2-Dichloropropane	0	/	3	0%	0.73	1.2	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	3	0%	0.57	0.96	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	3	0%	1	1.8	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	3	/	3	100%	--	--	x	~~No distribution~~	48	120		48.0	120.0
		1,1,2-Trichloroethane	0	/	3	0%	0.17	0.29	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	2	/	3	67%	--	--	x	~~No distribution~~	2.2	2.8		2.2	2.8
		Dibromochloromethane	0	/	3	0%	1.3	2.3	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	3	0%	0.73	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	3	0%	0.67	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	1	/	3	33%	1.6	2.8	x	~~No distribution~~	1.8	1.8		1.8	1.8
		1,1,2,2-Tetrachloroethane	0	/	3	0%	0.22	0.37	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	3	0%	0.78	1.3	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	1	/	3	33%	0.78	1.3	x	~~No distribution~~	2	2		2.0	2.0
		1,4-Dichlorobenzene	0	/	3	0%	0.95	1.6	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	3	0%	0.95	1.6	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	3	0%	8.4	14	x	~~No distribution~~	ND	ND		NC	NC
Indoor Air in µg/m3	2503 North Albina	Chloromethane	7	/	8	88%	1.3	1.3	x	90% KM (t) UCL	1.5	2.2	1.6	1.5	1.6
		Vinyl chloride	0	/	8	0%	0.04	0.05	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	8	0%	0.34	0.43	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	2	/	8	25%	0.6	3.3	x	~~No distribution~~	3.0	4.8		3.0	4.8
		Chloroethane	0	/	8	0%	0.41	0.52	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	8	/	8	100%	--	--		90% Students-t UCL	1.3	1.5	1.4	1.3	1.4
		Freon 113	0	/	8	0%	1.2	1.5	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	3	/	8	38%	0.064	0.067	x	90% KM (Percentile Bootstrap) UCL	0.35	0.53	0.39	0.4	0.4
		Methylene chloride	1	/	8	13%	1.1	1.4	x	~~No distribution~~	1.5	1.5		1.5	1.5
		Methyl tert-butyl ether	0	/	8	0%	0.56	0.71	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	8	0%	0.61	0.78	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	1	/	8	13%	0.12	0.16	x	~~No distribution~~	0.18	0.18		0.2	0.2
		Chloroform	0	/	8	0%	0.76	0.96	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	4	/	8	50%	0.18	0.21	x	90% KM (Percentile Bootstrap) UCL	0.57	0.99	0.67	0.6	0.7
		Carbon tetrachloride	0	/	8	0%	0.98	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	8	/	8	100%	--	--		90% Halls Bootstrap UCL	5.1	35	95.3	5.1	95.3
		1,2-Dichloroethane	6	/	8	75%	0.2	0.56	x	90% KM (t) UCL	0.51	1.1	0.61	0.5	0.6
		Trichloroethene	5	/	8	63%	0.17	0.21	x	90% KM (Percentile Bootstrap) UCL	1.3	3.4	1.5	1.3	1.5
		1,2-Dichloropropane	0	/	8	0%	0.72	0.9	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	8	0%	0.56	0.71	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	8	0%	1	1.3	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	8	/	8	100%	--	--		90% Approximate Gamma UCL	30.4	88	43.6	30.4	43.6
		1,1,2-Trichloroethane	0	/	8	0%	--	--	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% Approximate Gamma UCL	13.3	52	29.1	13.3	29.1
		Dibromochloromethane	0	/	8	0%	1.3	1.7	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	8	0%	0.71	0.9	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	6	/	8	75%	0.72	0.72	x	90% KM (t) UCL	1.0	1.4	1.1	1.0	1.1
		Bromoform	0	/	8	0%	1.6	2	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	8	0%	0.21	0.27	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	1	/	8	13%	0.79	0.96	x	~~No distribution~~	2	2		2.0	2.0
		1,2,4-Trimethylbenzene	5	/	8	63%	0.82	0.96	x	90% KM (Percentile Bootstrap) UCL	2.6	5.8	2.9	2.6	2.9
		1,4-Dichlorobenzene	0	/	8	0%	0.93	1.2	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	8	0%	0.93	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	8	0%	8.3	10	x	~~No distribution~~	ND	ND		NC	NC

Please refer to notes at end of table.

Table 13
Summary of EPC
Tarr, Inc.
Portland, Oregon

Medium	Location	Chemical	Detection Frequency				Detection Limit Range		Low Detection Frequency	Data Distribution 90% UCL Decision	Concentration				
											Mean of Detects	Maximum	90% UCL	EPC	
			Det.	/	Total	%	Min.	Max.						CTE	RME
Indoor Air in µg/m3	2405 North Albina	Chloromethane	5	/	8	63%	0.78	1	x	90% KM (Percentile Bootstrap) UCL	1.5	2.1	1.5	1.5	1.5
		Vinyl chloride	0	/	8	0%	0.04	0.045	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	8	0%	0.35	0.39	x	~~No distribution~~	ND	ND		ND	ND
		Bromomethane	0	/	8	0%	0.61	3.3	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	8	0%	0.42	0.46	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	8	/	8	100%	--	--		90% Students-t UCL	1.6	2.9	1.9	1.6	1.9
		Freon 113	0	/	8	0%	1.2	1.3	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	2	/	8	25%	0.063	0.069	x	~~No distribution~~	0.25	0.30		0.3	0.3
		Methylene chloride	8	/	8	100%	--	--		90% Approximate Gamma UCL	7.4	21	12.0	7.4	12.0
		Methyl tert-butyl ether	2	/	8	25%	0.57	0.63	x	~~No distribution~~	0.61	0.62		0.6	0.6
		Trans-1,2-dichloroethene	1	/	8	13%	0.63	0.69	x	~~No distribution~~	0.65	0.65		0.7	0.7
		1,1-Dichloroethane	0	/	8	0%	0.13	0.14	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	1	/	8	13%	0.77	0.85	x	~~No distribution~~	0.82	0.82		0.8	0.8
		1,1,1-Trichloroethane	7	/	8	88%	0.19	0.19		90% KM (t) UCL	0.384	0.72	0.46	0.4	0.5
		Carbon tetrachloride	0	/	8	0%	0.99	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	8	/	8	100%	--	--		90% Approximate Gamma UCL	0.91	2	1.3	0.9	1.3
		1,2-Dichloroethane	3	/	8	38%	0.13	0.36	x	90% KM (Percentile Bootstrap) UCL	0.27	0.28	0.27	0.3	0.3
		Trichloroethene	8	/	8	100%	--	--		90% Students-t UCL	2.8	4.7	3.4	2.8	3.4
		1,2-Dichloropropane	6	/	8	75%	0.76	0.76	x	90% KM (t) UCL	1.3	2.4	1.6	1.3	1.6
		1,4-Dioxane	1	/	8	13%	0.57	0.63	x	~~No distribution~~	4.1	4.1		4.1	4.1
		Bromodichloromethane	0	/	8	0%	1	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	8	/	8	100%	--	--		90% Students-t UCL	8.4	15	10.0	8.4	10.0
		1,1,2-Trichloroethane	0	/	8	0%	0.17	0.19	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	8	/	8	100%	--	--		90% Students-t UCL	24.1	42	29.5	24.1	29.5
		Dibromochloromethane	0	/	8	0%	1.3	1.5	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	8	0%	0.73	0.8	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	3	/	8	38%	0.7	0.74	x	90% KM (Percentile Bootstrap) UCL	0.93	1.3	1.1	0.9	1.1
		Bromoform	0	/	8	0%	1.6	1.8	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	8	0%	0.22	0.24	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	7	/	8	88%	0.86	0.86	x	90% KM (t) UCL	3.3	6.7	3.9	3.3	3.9
		1,2,4-Trimethylbenzene	6	/	8	75%	0.86	0.86	x	90% KM (t) UCL	11.2	23	13.6	11.2	13.6
		1,4-Dichlorobenzene	0	/	8	0%	0.95	1	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	8	0%	0.95	1	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	8	0%	8.4	9.3	x	~~No distribution~~	ND	ND		NC	NC
Indoor Air in µg/m3	651 North Russell	Chloromethane	2	/	3	67%	--	--	x	~~No distribution~~	1.3	1.4		1.3	1.4
		Vinyl chloride	0	/	3	0%	0.042	0.048	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	1	/	3	33%	0.36	0.39	x	~~No distribution~~	0.45	0.45		0.5	0.5
		Bromomethane	0	/	3	0%	0.64	0.68	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	3	0%	0.43	0.49	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	3	/	3	100%	--	--	x	~~No distribution~~	1.1	1.2		1.1	1.2
		Freon 113	0	/	3	0%	1.2	1.4	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	0	/	3	0%	0.065	0.074	x	~~No distribution~~	ND	ND		NC	NC
		Methylene chloride	0	/	3	0%	1.1	1.3	x	~~No distribution~~	ND	ND		NC	NC
		Methyl tert-butyl ether	0	/	3	0%	0.59	0.67	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	3	0%	0.65	0.74	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	3	0%	0.13	0.15	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	3	0%	0.8	0.91	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	0	/	3	0%	0.18	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Carbon tetrachloride	0	/	3	0%	1	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	3	/	3	100%	--	--	x	~~No distribution~~	1.2	1.9		1.2	1.9
		1,2-Dichloroethane	0	/	3	0%	0.13	0.15	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	1	/	3	33%	0.18	0.19	x	~~No distribution~~	0.76	0.76		0.8	0.8
		1,2-Dichloropropane	0	/	3	0%	0.76	0.86	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	3	0%	0.59	0.67	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	3	0%	1.1	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	3	/	3	100%	--	--	x	~~No distribution~~	5.6	9.2		5.6	9.2
		1,1,2-Trichloroethane	0	/	3	0%	0.18	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	3	/	3	100%	--	--	x	~~No distribution~~	0.8	1.2		0.8	1.2
		Dibromochloromethane	0	/	3	0%	1.4	1.6	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	3	0%	0.76	0.86	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	3	0%	0.7	0.8	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	3	0%	1.7	1.9	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	3	0%	0.22	0.26	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	3	0%	0.81	0.92	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	1	/	3	33%	0.86	0.92	x	~~No distribution~~	1	1		1.0	1.0
		1,4-Dichlorobenzene	0	/	3	0%	0.99	1.1	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	3	0%	0.99	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	3	0%	8.7	10	x	No distribution	ND	ND		NC	NC
Indoor Air in µg/m3	733 North Russell	Chloromethane	1	/	3	33%	--	--	x	No distribution	1.1	1.1		1.1	1.1
		Vinyl chloride	0	/	3	0%	0.04	0.041	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	3	0%	0.34	0.36	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	0	/	3	0%	0.6	3.1	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	3	0%	0.41	0.42	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	3	/	3	100%	--	--	x	~~No distribution~~	1.1	1.3		1.1	1.3
		Freon 113	0	/	3	0%	1.2	1.2	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	1	/	3	33%	0.064	0.064	x	~~No distribution~~	0.13	0.13		0.13	0.13
		Methylene chloride	2	/	3	67%	1.1	1.1	x	~~No distribution~~	4.15	5.6		4.2	5.6
		Methyl tert-butyl ether	0	/	3	0%	0.56	0.58	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	3	0%	0.61	0.64	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	3	0%	0.12	0.13	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	3	0%	0.76	0.79	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	2	/	3	67%	0.18	0.18	x	~~No distribution~~	0.42	0.44		0.4	0.4
		Carbon tetrachloride	0	/	3	0%	0.98	1	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	3	/	3	100%	--	--	x	~~No distribution~~	1	1.2		1.0	1.2
		1,2-Dichloroethane	0	/	3	0%	0.12	0.13	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	2	/	3	67%	0.17	0.17	x	~~No distribution~~	2.4	3.6		2.4	3.6
		1,2-Dichloropropane	0	/	3	0%	0.72	0.74	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	3	0%	0.56	0.58	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	3	0%	1	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	3	/	3	100%	--	--	x	~~No distribution~~	7.3	10		7.3	10.0
		1,1,2-Trichloroethane	0	/	3	0%	0.17	0.18	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	3	/	3	100%	--	--	x	~~No distribution~~	29.5	62		29.5	62.0
		Dibromochloromethane	0	/	3	0%	1.3	1.4	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	3	0%	0.71	0.74	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	3	0%	0.66	0.68	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	3	0%	1.6	1.7	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	3	0%	0.21	0.22	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	3	0%	0.76	0.79	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	2	/	3	67%	0.76	0.76	x	~~No distribution~~	1.18	1.4		1.2	1.4
		1,4-Dichlorobenzene	0	/	3	0%	0.93	0.97	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	3	0%	0.93	0.97	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	3	0%	8.3	8.6	x	~~No distribution~~	ND	ND		NC	NC

Please refer to notes at end of table.

Table 13
Summary of EPC
Tarr, Inc.
Portland, Oregon

Medium	Location	Chemical	Detection Frequency				Detection Limit Range		Low Detection Frequency	Data Distribution 90% UCL Decision	Concentration				
											Mean of Detects	Maximum	90% UCL	EPC	
			Det.	/	Total	%	Min.	Max.						CTE	RME
Indoor Air in µg/m3	807 North Russell	Chloromethane	1	/	3	33%	--	--	x	~~No distribution~~	0.83	0.83		0.8	0.8
		Vinyl chloride	0	/	3	0%	0.044	0.14	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	3	0%	0.38	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	0	/	3	0%	0.66	10	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	3	0%	0.45	1.4	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	1	/	3	33%	2.4	3	x	~~No distribution~~	2.1	2.4		2.1	2.4
		Freon 113	0	/	3	0%	1.3	4.1	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	1	/	3	33%	0.17	0.21	x	~~No distribution~~	0.46	0.46		0.5	0.5
		Methylene chloride	0	/	3	0%	1.2	3.7	x	~~No distribution~~	ND	ND		NC	NC
		Methyl tert-butyl ether	0	/	3	0%	0.62	1.9	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	3	0%	0.68	2.1	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	3	0%	0.14	0.43	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	0	/	3	0%	0.83	2.6	x	~~No distribution~~	ND	ND		NC	NC
		1,1,1-Trichloroethane	1	/	3	33%	0.47	0.58	x	~~No distribution~~	1.4	1.4		1.4	1.4
		Carbon tetrachloride	0	/	3	0%	1.1	3.4	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	2	/	3	67%	0.85	0.85	x	~~No distribution~~	0.78	0.84		0.8	0.8
		1,2-Dichloroethane	1	/	3	33%	0.14	0.43	x	~~No distribution~~	0.47	0.47		0.5	0.5
		Trichloroethene	2	/	3	67%	0.57	0.57	x	~~No distribution~~	3.9	7.7		3.9	7.7
		1,2-Dichloropropane	0	/	3	0%	0.79	2.5	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	3	0%	0.62	1.9	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	3	0%	1.1	3.6	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	3	/	3	100%	--	--	x	~~No distribution~~	14.9	26		14.9	26.0
		1,1,2-Trichloroethane	0	/	3	0%	0.19	0.58	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	3	/	3	100%	--	--	x	~~No distribution~~	73.1	200		73.1	200
		Dibromochloromethane	0	/	3	0%	1.4	4.5	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	3	0%	0.79	2.4	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	1	/	3	33%	0.73	2.3	x	~~No distribution~~	7.4	7.4		7.4	7.4
		Bromoform	0	/	3	0%	1.8	5.5	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	3	0%	0.23	0.73	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	3	0%	0.84	2.6	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	1	/	3	33%	2.1	2.6	x	~~No distribution~~	1.4	1.4		1.4	1.4
		1,4-Dichlorobenzene	0	/	3	0%	1	3.2	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	3	0%	1	3.2	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	3	0%	9.1	28	x	~~No distribution~~	ND	ND		NC	NC
Indoor Air in µg/m3	816 North Russell	Chloromethane	1	/	2	50%	--	--	x	~~No distribution~~	1	1		1.0	1.0
		Vinyl chloride	0	/	2	0%	0.044	0.047	x	~~No distribution~~	ND	ND		NC	NC
		1,3-Butadiene	0	/	2	0%	0.38	0.4	x	~~No distribution~~	ND	ND		NC	NC
		Bromomethane	0	/	2	0%	0.66	3.6	x	~~No distribution~~	ND	ND		NC	NC
		Chloroethane	0	/	2	0%	0.45	0.48	x	~~No distribution~~	ND	ND		NC	NC
		Freon 11	2	/	2	100%	--	--	x	~~No distribution~~	1.15	1.2		1.2	1.2
		Freon 113	0	/	2	0%	1.3	1.4	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethene	0	/	2	0%	0.068	0.072	x	~~No distribution~~	ND	ND		NC	NC
		Methylene chloride	0	/	2	0%	1.2	1.3	x	~~No distribution~~	ND	ND		NC	NC
		Methyl tert-butyl ether	0	/	2	0%	0.62	0.66	x	~~No distribution~~	ND	ND		NC	NC
		Trans-1,2-dichloroethene	0	/	2	0%	0.68	0.72	x	~~No distribution~~	ND	ND		NC	NC
		1,1-Dichloroethane	0	/	2	0%	0.14	0.15	x	~~No distribution~~	ND	ND		NC	NC
		Chloroform	1	/	2	50%	0.89	0.89	x	~~No distribution~~	0.99	0.99		1.0	1.0
		1,1,1-Trichloroethane	0	/	2	0%	0.19	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Carbon tetrachloride	0	/	2	0%	1.1	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Benzene	2	/	2	100%	--	--	x	~~No distribution~~	0.79	1		0.8	1.0
		1,2-Dichloroethane	0	/	2	0%	0.14	0.15	x	~~No distribution~~	ND	ND		NC	NC
		Trichloroethene	1	/	2	50%	0.24	1.1	x	~~No distribution~~	0.24	0.24		0.2	0.2
		1,2-Dichloropropane	0	/	2	0%	0.79	0.84	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dioxane	0	/	2	0%	0.62	0.66	x	~~No distribution~~	ND	ND		NC	NC
		Bromodichloromethane	0	/	2	0%	1.1	1.2	x	~~No distribution~~	ND	ND		NC	NC
		Toluene	2	/	2	100%	--	--	x	~~No distribution~~	2.8	3		2.8	3.0
		1,1,2-Trichloroethane	0	/	2	0%	0.19	0.2	x	~~No distribution~~	ND	ND		NC	NC
		Tetrachloroethene	2	/	2	100%	--	--	x	~~No distribution~~	4	4.6		4.0	4.6
		Dibromochloromethane	0	/	2	0%	1.4	1.6	x	~~No distribution~~	ND	ND		NC	NC
		Chlorobenzene	0	/	2	0%	0.79	0.84	x	~~No distribution~~	ND	ND		NC	NC
		Styrene	0	/	2	0%	0.73	0.78	x	~~No distribution~~	ND	ND		NC	NC
		Bromoform	0	/	2	0%	1.8	1.9	x	~~No distribution~~	ND	ND		NC	NC
		1,1,2,2-Tetrachloroethane	0	/	2	0%	0.23	0.25	x	~~No distribution~~	ND	ND		NC	NC
		1,3,5-Trimethylbenzene	0	/	2	0%	0.84	0.9	x	~~No distribution~~	ND	ND		NC	NC
		1,2,4-Trimethylbenzene	0	/	2	0%	0.84	0.9	x	~~No distribution~~	ND	ND		NC	NC
		1,4-Dichlorobenzene	0	/	2	0%	1	1.1	x	~~No distribution~~	ND	ND		NC	NC
		1,2-Dichlorobenzene	0	/	2	0%	1	1.1	x	~~No distribution~~	ND	ND		NC	NC
		Hexachlorobutadiene	0	/	2	0%	9.1	9.8	x	No distribution	ND	ND		NC	NC

Notes:
1. See Appendix A for list of data used.
2. See Appendix B for statistical calculations.
3. EPC = Exposure Point Concentration.
4. UCL = Upper Confidence Limit of the Mean.
5. CT = Central Tendency.
6. RME = Reasonable Maximum Exposure.
7. µg/kg = Micrograms per kilogram.
8. µg/L = Micrograms per liter.
9. $\mu g/m^3$ = Micrograms per cubic meter.
10. ND = Not detected.
11. NC = Not applicable.
12. ~~Strikethrough~~ = Low sampling frequency, Maximum concentration used for EPC

Table 14
Summary of Human Health RBC
Tarr, Inc.
Portland, Oregon

	General Endpoint Effects	Risk-Based Concentrations[1]										
		Occupational - Direct Contact	Excavation Worker	Construction Worker	Occupational - Groundwater Ingestion & Inhalation	Urban Residential - Groundwater Ingestion & Inhalation	Occupational - Vapor Intrusion from Groundwater	Urban Residential - Vapor Intrusion from Groundwater	Occupational - Soil Vapor	Urban Residential - Soil Vapor	Occupational - Air Inhalation	Urban Residential - Air Inhalation
Soil in mg/kg												
Gasoline-Range Organics	NC	20,000	--	9,700	--	--	--	--	--	--	--	--
Diesel-Range Organics	NC	14,000	--	4,600	--	--	--	--	--	--	--	--
Oil-Range Organics	NC	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	C	140	44,000	1,600	--	--	--	--	--	--	--	--
Tetrachloroethene	C	940	250,000	9,100	--	--	--	--	--	--	--	--
Tetrachloroethene	NC	4,000	44,000	1,600	--	--	--	--	--	--	--	--
Trichloroethene	C	46	12,000	420	--	--	--	--	--	--	--	--
Trichloroethene	NC	270	3,400	120	--	--	--	--	--	--	--	--
Benzo(a)anthracene	C	2.7	590	21	--	--	--	--	--	--	--	--
Benzo(a)pyrene	C	0.27	59	2.1	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	C	2.7	590	21	--	--	--	--	--	--	--	--
Dibenz(a,h,)anthracene	C	0.27	59	2.1	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	C	2.7	590	21	--	--	--	--	--	--	--	--
Groundwater in µg/L												
TPH-G	NC	--	--	--	450	110	270,000	22,000	--	--	--	--
Benzene	C	--	--	--	2.2	1.7	2,800	510	--	--	--	--
Chloroform	C	--	--	--	0.99	0.98	1200	220	--	--	--	--
1,1-Dichloroethane	C	--	--	--	13	11	16,000	2,900	--	--	--	--
cis-1,2-Dichloroethene	NC	--	--	--	290	150	1.2.E+19	4.9E+17	--	--	--	--
trans-1,2-Dichloroethene	NC	--	--	--	450	210	350,000	28,000	--	--	--	--
Methylene Chloride	C	--	--	--	27	18	99,000	18,000	--	--	--	--
Methyl-t-butyl ether	C	--	--	--	67	53	590,000	110,000	--	--	--	--
Tetrachloroethene	C	--	--	--	64	49	32,000	5,900	--	--	--	--
Tetrachloroethene	NC	--	--	--	250	120	120,000	9,600	--	--	--	--
Trichloroethene	C	--	--	--	3.6	2.6	3,300	590	--	--	--	--
Trichloroethene	NC	--	--	--	14	6.8	9,600	770	--	--	--	--
Vinyl Chloride	C	--	--	--	0.52	0.059	910	22	--	--	--	--
Vapor in µg/m^3												
Chloromethane	NC	--	--	--	--	--	--	--	390,000	19,000	390	94
Vinyl chloride	C	--	--	--	--	--	--	--	2,800	41	2.8	0.2
1,3-Butadiene	NC	--	--	--	--	--	--	--	8,800	420	8.8	2.1
Bromomethane	NC	--	--	--	--	--	--	--	22,000	1,000	22	5.2
Chloroethane	NC	--	--	--	--	--	--	--	44,000,000	2,100,000	44,000	10,000
Freon 11	NC	--	--	--	--	--	--	--	3,100,000	150,000	3,100	730
Freon 113	NC	--	--	--	--	--	--	--	130,000,000	6,300,000	130,000	31,000
1,1-Dichloroethene	NC	--	--	--	--	--	--	--	880,000	42,000	880	210
Methylene chloride	C	--	--	--	--	--	--	--	26,000	2,800	26	14
Methyl tert-butyl ether	C	--	--	--	--	--	--	--	47,000	5,100	47	26
Trans-1,2-dichloroethene	NC	--	--	--	--	--	--	--	260,000	13,000	260	63
1,1-Dichloroethane	C	--	--	--	--	--	--	--	7,700	830	7.7	4.1
Chloroform	C	--	--	--	--	--	--	--	530	58	0.53	0.29
1,1,1-Trichloroethane	NC	--	--	--	--	--	--	--	22,000,000	1,000,000	22,000	5,200
Carbon tetrachloride	C	--	--	--	--	--	--	--	2,000	220	2.0	1.10
Benzene	C	--	--	--	--	--	--	--	1,600	170	1.6	0.85
1,2-Dichloroethane	C	--	--	--	--	--	--	--	470	51	0.47	0.26
Trichloroethene	C	--	--	--	--	--	--	--	2,900	320	3	1.6
Trichloroethene	NC	--	--	--	--	--	--	--	8,800	420	8.8	2.1
1,2-Dichloropropane	NC	--	--	--	--	--	--	--	18,000	830	18	4.2
1,4-Dioxane	C	--	--	--	--	--	--	--	--	--	1.6	0.86
Bromodichloromethane	C	--	--	--	--	--	--	--	330	36	0.33	0.18
Toluene	NC	--	--	--	--	--	--	--	22,000,000	1,000,000	22,000	5,200
1,1,2-Trichloroethane	C	--	--	--	--	--	--	--	770	83	0.77	0.41
1,1,2-Trichloroethane	NC	--	--	--	--	--	--	--	880	42	0.88	0.21
Tetrachloroethene	C	--	--	--	--	--	--	--	47,000	5,100	47	26
Tetrachloroethene	NC	--	--	--	--	--	--	--	180,000	8,300	180	42
Dibromochloromethane	C	--	--	--	--	--	--	--	450	49	0.45	0.25
Chlorobenzene	NC	--	--	--	--	--	--	--	220,000	10,000	220	52
Styrene	NC	--	--	--	--	--	--	--	4,400,000	210,000	4,400	1,000
Bromoform	C	--	--	--	--	--	--	--	11,000	1,200	11	6.0
1,1,2,2-Tetrachloroethane	NC	--	--	--	--	--	--	--	210	23	0.21	0.11
1,3,5-Trimethylbenzene	NC	--	--	--	--	--	--	--	4.40E+18	2.10E+17	4.4E+15	1.0E+15
1,2,4-Trimethylbenzene	NC	--	--	--	--	--	--	--	31,000	1,500	31	7.3
1,4-Dichlorobenzene	C	--	--	--	--	--	--	--	1,100	120	1.1	0.6
1,2-Dichlorobenzene	NC	--	--	--	--	--	--	--	880,000	42,000	880	210
Hexachlorobutadiene	C	--	--	--	--	--	--	--	--	--	0.56	0.3

Notes:
1. RBDM Guidance (DEQ, 2003), default values from table updated June 2012. RBCs for 1,3-Butadiene, 1,2-Dichloropropane, Hexachlorobutadiene, and 1,1,2,2-Tetrachloroethane determined using DEQ RBDM Guidance spreadsheet
2. C = Carcinogen, NC = Non-Carcinogen.
3. -- = COPC in that medium not applicable to this pathway.
4. mg/kg = Milligrams per kilogram.
5. µg/L = Micrograms per liter.
6. µg/m^3 = Micrograms per cubic meter.

Table 15
Risk Characterization: Non-Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Hazard Quotient		Hazard Index	
				CTE	RME		CTE	RME	CTE	RME
Occupational Workers (Facility Areas)	Outdoor Air ($\mu g/m^3$)	Air Inhalation	Chloromethane	0.97	1.3	390	2.5E-03	3.3E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.7	2.7	3,100	5.3E-04	8.7E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	NC	NC	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	0.3	0.3	9	3.0E-02	3.0E-02		
			1,1,1-Trichloroethane	NC	NC	22,000	--	--		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	9.9	19.0	22,000	4.5E-04	8.6E-04		
			1,1,2-Trichloroethane	NC	NC	1	--	--		
			Tetrachloroethene	0.9	1.6	180	5.1E-03	8.9E-03		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	2.1	3	31	6.8E-02	9.7E-02		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									1.1E-01	1.4E-01
							Occupational Risk Total		*1.1E-01*	*1.4E-01*
Occupational Workers (Non-Facility Areas)	Outdoor Air ($\mu g/m^3$)	Air Inhalation	Chloromethane	1.3	1.5	390	3.2E-03	3.8E-03		
			1,3-Butadiene	0.4	0.4	8.8	4.0E-02	4.0E-02		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.7	2.5	3,100	5.5E-04	8.1E-04		
			Freon 113	1.2	1.2	130,000	9.2E-06	9.2E-06		
			1,1-Dichloroethene	NC	NC	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	NC	NC	9	--	--		
			1,1,1-Trichloroethane	NC	NC	22,000	--	--		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	3.2	6.9	22,000	1.5E-04	3.1E-04		
			1,1,2-Trichloroethane	NC	NC	1	--	--		
			Tetrachloroethene	NC	NC	180	--	--		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	NC	NC	31	--	--		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									4.4E-02	4.5E-02
							Occupational Risk Total		*4.4E-02*	*4.5E-02*
Urban Residents (Non-Facility Areas)	Outdoor Air ($\mu g/m^3$)	Air Inhalation	Chloromethane	1.3	1.5	94	1.3E-02	1.6E-02		
			1,3-Butadiene	0.4	0.4	2.1	1.7E-01	1.7E-01		
			Bromomethane	NC	NC	5	--	--		
			Chloroethane	NC	NC	10,000	--	--		
			Freon 11	1.7	2.5	730	2.3E-03	3.4E-03		
			Freon 113	1.2	1.2	31,000	3.9E-05	3.9E-05		
			1,1-Dichloroethene	NC	NC	210	--	--		
			Trans-1,2-dichloroethene	NC	NC	63	--	--		
			Trichloroethene	NC	NC	2	--	--		
			1,1,1-Trichloroethane	NC	NC	5,200	--	--		
			1,2-Dichloropropane	NC	NC	4.2	--	--		
			Toluene	3.2	6.9	5,200	6.2E-04	1.3E-03		
			1,1,2-Trichloroethane	NC	NC	0	--	--		
			Tetrachloroethene	NC	NC	42	--	--		
			Chlorobenzene	NC	NC	52	--	--		
			Styrene	NC	NC	1,000	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	1.E-01	--	--		
			1,3,5-Trimethylbenzene	NC	NC	1.E+15	--	--		
			1,2,4-Trimethylbenzene	NC	NC	7	--	--		
			1,2-Dichlorobenzene	NC	NC	210	--	--		
									1.8E-01	1.9E-01
							Urban Resident Risk Total		*1.8E-01*	*1.9E-01*
Excavation Worker	Soil, 0 to 15 feet ($\mu g/kg$)	Direct Contact	Gasoline-Range Organics	563	444	--	--	--		
			Diesel-Range Organics	2,309.0	8,720	--	--	--		
			Oil-Range Organics	718	7,410	--	--	--		
			Trichloroethene	2.6	4	3,400	7.5E-04	1.3E-03		
			Tetrachloroethene	8.5	18	44,000	1.9E-04	4.1E-04		
									9.4E-04	1.7E-03
							Excavation Worker Risk Total		*9.4E-04*	*1.7E-03*
Construction Worker	Soil, 0 to 15 feet ($\mu g/kg$)	Direct Contact	Gasoline-Range Organics	563	444	9,700	5.8E-02	4.6E-02		
			Diesel-Range Organics	2,309	8,720	4,600	5.0E-01	1.9E+00		
			Oil-Range Organics	718	7,410	--	--	--		
			Trichloroethene	2.6	4	120	2.1E-02	3.6E-02		
			Tetrachloroethene	8.5	18	1,600	5.3E-03	1.1E-02		
									5.9E-01	2.0E+00
							Construction Worker Risk Total		*5.9E-01*	*2.0E+00*

Please refer to notes at end of table.

Table 15
Risk Characterization: Non-Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Hazard Quotient		Hazard Index	
				CTE	RME		CTE	RME	CTE	RME
Occupational Workers	Soil, 0 to 3 feet (µg/kg)	Direct Contact	Gasoline-Range Organics	701	1,022	20,000	3.5E-02	5.1E-02		
			Diesel-Range Organics	2,309	8,720	14,000	1.6E-01	6.2E-01		
			Oil-Range Organics	2,539	1,680	--	--	--		
			Trichloroethene	4.9	9	270	1.8E-02	3.2E-02		
			Tetrachloroethene	12.4	31	4,000	3.1E-03	7.9E-03		
									2.2E-01	7.1E-01
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
	Indoor Air, Office ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	1.2	1.6	390	2.9E-03	4.1E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	1	1	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.4	1.6	3,100	4.4E-04	5.2E-04		
			Freon 113	1.5	1.9	130,000	1.2E-05	1.5E-05		
			1,1-Dichloroethene	0.088	0.12	880	1.0E-04	1.4E-04		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	2.0	3.6	9	2.3E-01	4.1E-01		
			1,1,1-Trichloroethane	0.37	0.51	22,000	1.7E-05	2.3E-05		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	58.5	110.0	22,000	2.7E-03	5.0E-03		
			1,1,2-Trichloroethane	NC	NC	1	--	--		
			Tetrachloroethene	28	82	180	1.6E-01	4.6E-01		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0	--	--		
			1,3,5-Trimethylbenzene	1.4	1.6	4.E+15	3.1E-16	3.6E-16		
			1,2,4-Trimethylbenzene	3.9	5.0	31	1.3E-01	1.6E-01		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									5.2E-01	1.0E+00
							Occupational Risk Total		*2.0E+02*	*2.5E+02*
Occupational Workers	Indoor Air, Warehouse ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	1.1	1.2	390	2.9E-03	3.2E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	2.6	2.6	3,100	8.4E-04	8.4E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	NC	NC	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	2.3	2.8	9	2.6E-01	3.2E-01		
			1,1,1-Trichloroethane	NC	NC	22,000	--	--		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	230.1	305.6	22,000	1.0E-02	1.4E-02		
			1,1,2-Trichloroethane	NC	NC	0.9	--	--		
			Tetrachloroethene	13.7	38.3	180	7.6E-02	2.1E-01		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	12.1	23.5	4.E+15	2.7E-15	5.3E-15		
			1,2,4-Trimethylbenzene	26.0	68.6	31	8.4E-01	2.2E+00		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									1.2E+00	2.8E+00
							Occupational Risk Total		*2.1E+02*	*2.5E+02*
Occupational Workers	Indoor Air, Shop ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	1.3	1.3	390	3.2E-03	3.3E-03		
			1,3-Butadiene	0.62	0.62	8.8	7.0E-02	7.0E-02		
			Bromomethane	1.6	1.6	22	7.3E-02	7.3E-02		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.45	1.9	3,100	4.7E-04	6.1E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	NC	NC	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	0.6	0.6	9	7.3E-02	7.3E-02		
			1,1,1-Trichloroethane	NC	NC	22,000	--	--		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	48	120	22,000	2.2E-03	5.5E-03		
			1,1,2-Trichloroethane	NC	NC	0.9	--	--		
			Tetrachloroethene	2.2	2.8	180	1.2E-02	1.6E-02		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	2	2	31	6.5E-02	6.5E-02		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									3.0E-01	3.1E-01
							Occupational Risk Total		*2.0E+02*	*2.5E+02*

Please refer to notes at end of table.

Table 15
Risk Characterization: Non-Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Hazard Quotient		Hazard Index	
				CTE	RME		CTE	RME	CTE	RME
Occupational Workers (2503 North Albina)	Indoor Air (µg/m^3)	Vapor Intrusion, air inhalation	Chloromethane	1.5	1.6	390	3.8E-03	4.2E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	3.0	4.8	22	1.3E-01	2.2E-01		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.3	1.4	3,100	4.3E-04	4.5E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	0.4	0.4	880	4.0E-04	4.4E-04		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	1.3	1.5	9	1.4E-01	1.7E-01		
			1,1,1-Trichloroethane	0.6	0.7	22,000	2.6E-05	3.1E-05		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	30	44	22,000	1.4E-03	2.0E-03		
			1,1,2-Trichloroethane	NC	NC	0.9	--	--		
			Tetrachloroethene	13	29	180	7.4E-02	1.6E-01		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	1.0	1.1	4,400	2.3E-04	2.5E-04		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	2	2	4.E+15	4.5E-16	4.5E-16		
			1,2,4-Trimethylbenzene	2.6	2.9	31	8.3E-02	9.4E-02		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									4.4E-01	6.5E-01
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.5E+02*
Occupational Workers (2405 North Albina)	Indoor Air (µg/m^3)	Vapor Intrusion, air inhalation	Chloromethane	1.5	1.5	390	3.7E-03	3.9E-03		
			1,3-Butadiene	ND	ND	8.8	--	--		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.6	1.9	3,100	5.3E-04	6.3E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	0.3	0.3	880	2.8E-04	3.4E-04		
			Trans-1,2-dichloroethene	0.7	0.7	260	2.5E-03	2.5E-03		
			Trichloroethene	2.8	3.4	9	3.2E-01	3.9E-01		
			1,1,1-Trichloroethane	0.4	0.5	22,000	1.7E-05	2.1E-05		
			1,2-Dichloropropane	1.3	1.6	18	7.4E-02	8.9E-02		
			Toluene	8	10	22,000	3.8E-04	4.5E-04		
			1,1,2-Trichloroethane	NC	NC	0.88	--	--		
			Tetrachloroethene	24	30	180	1.3E-01	1.6E-01		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	0.9	1.1	4,400	2.1E-04	2.5E-04		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	3.3	3.9	4.E+15	7.5E-16	8.9E-16		
			1,2,4-Trimethylbenzene	11	14	31	3.6E-01	4.4E-01		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									8.9E-01	1.1E+00
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.5E+02*
Occupational Workers (651 North Russell)	Indoor Air (µg/m^3)	Vapor Intrusion, air inhalation	Chloromethane	1.3	1.4	390	3.2E-03	3.6E-03		
			1,3-Butadiene	0.5	0.5	8.8	5.1E-02	5.1E-02		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.1	1.2	3,100	3.6E-04	3.9E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	NC	NC	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	0.8	0.8	9	8.6E-02	8.6E-02		
			1,1,1-Trichloroethane	NC	NC	22,000	--	--		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	5.6	9.2	22,000	2.5E-04	4.2E-04		
			1,1,2-Trichloroethane	NC	NC	0.88	--	--		
			Tetrachloroethene	0.8	1.2	180	4.4E-03	6.7E-03		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	1.0	1.0	31	3.2E-02	3.2E-02		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									1.8E-01	1.8E-01
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.4E+02*

Please refer to notes at end of table.

Table 15
Risk Characterization: Non-Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Hazard Quotient		Hazard Index	
				CTE	RME		CTE	RME	CTE	RME
Occupational Workers (733 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	1.1	1.1	390	2.8E-03	2.8E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.1	1.3	3,100	3.5E-04	4.2E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	0.1	0.1	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	2.4	3.6	8.8	2.7E-01	4.1E-01		
			1,1,1-Trichloroethane	0.4	0.4	22,000	1.9E-05	2.0E-05		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	7.3	10.0	22,000	3.3E-04	4.5E-04		
			1,1,2-Trichloroethane	NC	NC	0.88	--	--		
			Tetrachloroethene	29.5	62.0	180	1.6E-01	3.4E-01		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	1.2	1.4	31	3.8E-02	4.5E-02		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									4.8E-01	8.0E-01
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.5E+02*
Occupational Workers (807 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	0.8	0.8	390	2.1E-03	2.1E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	2.1	2.4	3,100	6.6E-04	7.7E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	0.5	0.5	880	5.2E-04	5.2E-04		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	3.9	7.7	8.8	4.5E-01	8.8E-01		
			1,1,1-Trichloroethane	1.4	1.4	22,000	6.4E-05	6.4E-05		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	14.9	26.0	22,000	6.8E-04	1.2E-03		
			1,1,2-Trichloroethane	NC	NC	0.88	--	--		
			Tetrachloroethene	73.1	200	180	4.1E-01	1.1E+00		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	7.4	7.4	4,400	1.7E-03	1.7E-03		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	1.4	1.4	31	4.5E-02	4.5E-02		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									9.0E-01	2.0E+00
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.5E+02*
Urban Residents (807 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	0.8	0.8	94	8.8E-03	8.8E-03		
			1,3-Butadiene	NC	NC	2.1	--	--		
			Bromomethane	NC	NC	5	--	--		
			Chloroethane	NC	NC	10,000	--	--		
			Freon 11	2.1	2.4	730	2.8E-03	3.3E-03		
			Freon 113	NC	NC	31,000	--	--		
			1,1-Dichloroethene	0.5	0.5	210	2.2E-03	2.2E-03		
			Trans-1,2-dichloroethene	NC	NC	63	--	--		
			Trichloroethene	3.9	7.7	2	1.9E+00	3.7E+00		
			1,1,1-Trichloroethane	1.4	1.4	5,200	2.7E-04	2.7E-04		
			1,2-Dichloropropane	NC	NC	4.2	--	--		
			Toluene	14.9	26.0	5,200	2.9E-03	5.0E-03		
			1,1,2-Trichloroethane	NC	NC	0.21	--	--		
			Tetrachloroethene	73.1	200	42	1.7E+00	4.8E+00		
			Chlorobenzene	NC	NC	52	--	--		
			Styrene	7.4	7.4	1,000	7.4E-03	7.4E-03		
			1,1,2,2-Tetrachloroethane	NC	NC	0.11	--	--		
			1,3,5-Trimethylbenzene	NC	NC	1.E+15	--	--		
			1,2,4-Trimethylbenzene	1.4	1.4	7	1.9E-01	1.9E-01		
			1,2-Dichlorobenzene	NC	NC	210	--	--		
									3.8E+00	8.6E+00
							Occupational Risk Total		*3.8E+00*	*8.6E+00*

Please refer to notes at end of table.

Table 15
Risk Characterization: Non-Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Hazard Quotient		Hazard Index	
				CTE	RME		CTE	RME	CTE	RME
Occupational Workers (816 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	1.0	1.0	390	2.6E-03	2.6E-03		
			1,3-Butadiene	NC	NC	8.8	--	--		
			Bromomethane	NC	NC	22	--	--		
			Chloroethane	NC	NC	44,000	--	--		
			Freon 11	1.2	1.2	3,100	3.7E-04	3.9E-04		
			Freon 113	NC	NC	130,000	--	--		
			1,1-Dichloroethene	NC	NC	880	--	--		
			Trans-1,2-dichloroethene	NC	NC	260	--	--		
			Trichloroethene	0.2	0.2	9	2.7E-02	2.7E-02		
			1,1,1-Trichloroethane	NC	NC	22,000	--	--		
			1,2-Dichloropropane	NC	NC	18	--	--		
			Toluene	2.8	3.0	22,000	1.3E-04	1.4E-04		
			1,1,2-Trichloroethane	NC	NC	0.88	--	--		
			Tetrachloroethene	4.0	4.6	180	2.2E-02	2.6E-02		
			Chlorobenzene	NC	NC	220	--	--		
			Styrene	NC	NC	4,400	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.21	--	--		
			1,3,5-Trimethylbenzene	NC	NC	4.E+15	--	--		
			1,2,4-Trimethylbenzene	NC	NC	31	--	--		
			1,2-Dichlorobenzene	NC	NC	880	--	--		
									5.3E-02	5.6E-02
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.4E+02*
Urban Residents (816 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloromethane	1.0	1.0	94	1.1E-02	1.1E-02		
			1,3-Butadiene	NC	NC	2.1	--	--		
			Bromomethane	NC	NC	5	--	--		
			Chloroethane	NC	NC	10,000	--	--		
			Freon 11	1.2	1.2	730	1.6E-03	1.6E-03		
			Freon 113	NC	NC	31,000	--	--		
			1,1-Dichloroethene	NC	NC	210	--	--		
			Trans-1,2-dichloroethene	NC	NC	63	--	--		
			Trichloroethene	0.2	0.2	2	1.1E-01	1.1E-01		
			1,1,1-Trichloroethane	NC	NC	5,200	--	--		
			1,2-Dichloropropane	NC	NC	4.2	--	--		
			Toluene	2.8	3.0	5,200	5.4E-04	5.8E-04		
			1,1,2-Trichloroethane	NC	NC	0.21	--	--		
			Tetrachloroethene	4.0	4.6	42	9.5E-02	1.1E-01		
			Chlorobenzene	NC	NC	52	--	--		
			Styrene	NC	NC	1,000	--	--		
			1,1,2,2-Tetrachloroethane	NC	NC	0.11	--	--		
			1,3,5-Trimethylbenzene	NC	NC	1.E+15	--	--		
			1,2,4-Trimethylbenzene	NC	NC	7	--	--		
			1,2-Dichlorobenzene	NC	NC	210	--	--		
									2.2E-01	2.4E-01
							Occupational Risk Total		*2.2E-01*	*2.4E-01*
Occupational (North Mississippi Block)	B-41-1 Groundwater ($\mu g/L$)	Vapor Intrusion into buildings	cis-1,2-Dichloroethene	NC	NC	1.2E+19	--	--		
			trans-1,2-Dichloroethene	NC	NC	350,000	--	--		
			Trichloroethene	5	5.3	9,600	--	--		
			Tetrachloroethene	1.5	1.5	120,000	1.3E-05	1.3E-05		
									1.3E-05	1.3E-05
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene	525	620	290	1.8E+00	2.1E+00		
			trans-1,2-Dichloroethene	21.6	32	450	4.8E-02	7.1E-02		
			Trichloroethene	2,451	2,938	14	1.8E+02	2.1E+02		
			Tetrachloroethene	6,715	8,118	250	2.7E+01	3.2E+01		
									2.0E+02	2.4E+02
							Occupational Risk Total		*2.0E+02*	*2.4E+02*
Occupational (North Larrabee Avenue)	B-51-34 Groundwater ($\mu g/L$)	Vapor Intrusion into buildings	cis-1,2-Dichloroethene	NC	NC	1.2E+19	--	--		
			trans-1,2-Dichloroethene	NC	NC	350,000	--	--		
			Trichloroethene	NC	NC	9,600	--	--		
			Tetrachloroethene	NC	NC	120,000	--	--		
									0.0E+00	0.0E+00
	MW-12 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene	NC	NC	290	--	--		
			trans-1,2-Dichloroethene	NC	NC	450	--	--		
			Trichloroethene	4	5	14	2.9E-01	3.3E-01		
			Tetrachloroethene	5	7	250	2.2E-02	3.0E-02		
									3.1E-01	3.6E-01
							Occupational Risk Total		*3.1E-01*	*3.6E-01*

Table 15
Risk Characterization: Non-Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Hazard Quotient		Hazard Index	
				CTE	RME		CTE	RME	CTE	RME
Please refer to notes at end of table.										
Occupational (North Railroad Street)	B-50-30 Groundwater (µg/L)	Vapor Intrusion into buildings	cis-1,2-Dichloroethene	1.9	1.9	1.2E+19	1.6E-19	1.6E-19		
			trans-1,2-Dichloroethene	NC	NC	350,000	--	--		
			Trichloroethene	6.4	6.4	9,600	6.6E-04	6.6E-04		
			Tetrachloroethene	7.6	7.6	120,000	6.3E-05	6.3E-05		
									7.3E-04	7.3E-04
	MW-10 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	22	24	290	7.4E-02	8.2E-02		
			trans-1,2-Dichloroethene	NC	NC	450	--	--		
			Trichloroethene	110	122	14	7.8E+00	8.7E+00		
			Tetrachloroethene	316	356	250	1.3E+00	1.4E+00		
									9.2E+00	1.0E+01
							Occupational Risk Total		*9.2E+00*	*1.0E+01*
Occupational (North Railroad Street)	B-63- 1 Groundwater (µg/L)	Vapor Intrusion into buildings	cis-1,2-Dichloroethene	NC	NC	1.2E+19	--	--		
			trans-1,2-Dichloroethene	NC	NC	350,000	--	--		
			Trichloroethene	NC	NC	9,600	--	--		
			Tetrachloroethene	NC	NC	120,000	--	--		
									0.0E+00	0.0E+00
	MW-15 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	2	2	290	6.6E-03	7.6E-03		
			trans-1,2-Dichloroethene	NC	NC	450	--	--		
			Trichloroethene	3	5	14	2.4E-01	3.6E-01		
			Tetrachloroethene	12	17	250	4.9E-02	6.6E-02		
									3.0E-01	4.3E-01
							Occupational Risk Total		*3.0E-01*	*4.3E-01*
Occupational (North Loring Street)	B-49-30 Groundwater (µg/L)	Vapor Intrusion into buildings	cis-1,2-Dichloroethene	2.3	2.3	1.2E+19	1.9E-19	1.9E-19		
			trans-1,2-Dichloroethene	NC	NC	350,000	--	--		
			Trichloroethene	5.6	5.6	9,600	5.8E-04	5.8E-04		
			Tetrachloroethene	12	12	120,000	1.0E-04	1.0E-04		
									6.8E-04	6.8E-04
	MW-13 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	14	16	290	4.9E-02	5.7E-02		
			trans-1,2-Dichloroethene	NC	NC	450	--	--		
			Trichloroethene	58	64	14	4.1E+00	4.6E+00		
			Tetrachloroethene	195	221	250	7.8E-01	8.8E-01		
									4.9E+00	5.5E+00
							Occupational Risk Total		*4.9E+00*	*5.5E+00*
Occupational (North River Street)	B-66 (31-35) Groundwater (µg/L)	Vapor Intrusion into buildings	cis-1,2-Dichloroethene	NC	NC	1.2E+19	--	--		
			trans-1,2-Dichloroethene	NC	NC	350,000	--	--		
			Trichloroethene	NC	NC	9,600	--	--		
			Tetrachloroethene	NC	NC	120,000	--	--		
									0.0E+00	0.0E+00
	MW-14 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene	10	14	290	3.6E-02	4.8E-02		
			trans-1,2-Dichloroethene	NC	NC	450	--	--		
			Trichloroethene	47	62	14	3.3E+00	4.4E+00		
			Tetrachloroethene	147	220	250	5.9E-01	8.8E-01		
									4.0E+00	5.4E+00
							Occupational Risk Total		*4.0E+00*	*5.4E+00*

Notes:
1. EPC = Exposure Point Concentration; from Table 11.
2. CT = Central Tendency.
3. RME = Reasonable Maximum Exposure.
4. RBC = Risk-Based Concentration; from Table 12.
5. µg/kg = Micrograms per kilogram.
6. µg/L = Micrograms per liter.
7. µg/m^3 = Micrograms per cubic meter.
8. **Bold** = Hazard Quotient or Hazard Index exceeds acceptable level of 1.0.
9. NC = Not Calculated.

Table 16
Risk Characterization: Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Individual Chemical Excess Risk		Cumulative Excess Risk	
				CTE	RME		CTE	RME	CTE	RME
Occupational (Facility)	Outdoor Air (µg/m$^{3)}$	Air Inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	NC	NC	26	--	--		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	0.93	0.93	2.0	5.E-07	5.E-07		
			Benzene	0.895	1.7	1.6	6.E-07	1.E-06		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	0.26	0.26	3.0	9.E-08	9.E-08		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.8	--	--		
			Tetrachloroethene	0.925	1.6	47.0	2.E-08	3.E-08		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									1.E-06	2.E-06
							Occupational Worker Risk Total		*1.E-06*	*2.E-06*
Occupational (Non-Facility Areas)	Outdoor Air (µg/m3)	Air Inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	1.0	1.0	26	4.E-08	4.E-08		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	2.0	2.0	0.5	4.E-06	4.E-06		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	0.9	1.5	1.6	6.E-07	9.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	NC	NC	3.0	--	--		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.8	--	--		
			Tetrachloroethene	NC	NC	47.0	--	--		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									4.E-06	5.E-06
							Occupational Worker Risk Total		*4.E-06*	*5.E-06*
Urban Residential (Non-Facility Areas)	Outdoor Air (µg/m3)	Air Inhalation	Vinyl chloride	NC	NC	0.2	--	--		
			Methylene chloride	1.0	1.0	14	7.E-08	7.E-08		
			Methyl tert-butyl ether	NC	NC	26	--	--		
			Chloroform	2.0	2.0	0.3	7.E-06	7.E-06		
			Carbon tetrachloride	NC	NC	1.1	--	--		
			Benzene	0.9	1.5	0.9	1.E-06	2.E-06		
			1,1-Dichloroethane	NC	NC	4.1	--	--		
			1,2-Dichloroethane	NC	NC	0.3	--	--		
			Trichloroethene	NC	NC	1.6	--	--		
			1,4-Dioxane	NC	NC	0.9	--	--		
			Bromodichloromethane	NC	NC	0.2	--	--		
			1,1,2-Trichloroethane	NC	NC	0.4	--	--		
			Tetrachloroethene	NC	NC	26.0	--	--		
			Dibromochloromethane	NC	NC	0.3	--	--		
			Bromoform	NC	NC	6.0	--	--		
			1,4-Dichlorobenzene	NC	NC	0.6	--	--		
									8.E-06	9.E-06
							Urban Resident Risk Total		*8.E-06*	*9.E-06*
Excavation Worker	Soil, 0 to 15 feet (µg/kg)	Direct Contact	Tetrachloroethene	8.5	18	250,000	3.E-11	7.E-11		
			Trichloroethene	2.6	4.4	12,000	2.E-10	4.E-10		
			Ethylbenzene	5.6	17.3	44,000	1.E-10	4.E-10		
			Benzo(a)anthracene	0.4	0.5	590	6.E-10	9.E-10		
			Benzo(a)pyrene	0.5	0.8	59	9.E-09	1.E-08		
			Benzo(b)fluoranthene	0.5	0.7	590	8.E-10	1.E-09		
			Dibenz(a,h,)anthracene	0.0	0.04	59	7.E-10	7.E-10		
			Indeno(1,2,3-cd)pyrene	0.4	0.6	590	7.E-10	9.E-10		
									1.E-08	2.E-08
							Excavation Worker Risk Total		*1.E-08*	*2.E-08*
Construction Worker	Soil, 0 to 15 feet (µg/kg)	Direct Contact	Tetrachloroethene	8.5	18	9,100	9.E-10	2.E-09		
			Trichloroethene	2.6	4.4	420	6.E-09	1.E-08		
			Ethylbenzene	5.6	17	1,600	3.E-09	1.E-08		
			Benzo(a)anthracene	0.4	0.5	21	2.E-08	3.E-08		
			Benzo(a)pyrene	0.5	0.8	2.1	3.E-07	4.E-07		
			Benzo(b)fluoranthene	0.5	0.7	21	2.E-08	3.E-08		
			Dibenz(a,h,)anthracene	0.04	0.04	2.1	2.E-08	2.E-08		
			Indeno(1,2,3-cd)pyrene	0.4	0.6	21	2.E-08	3.E-08		
									3.E-07	5.E-07
							Construction Worker Risk Total		*3.E-07*	*5.E-07*

Please refer to notes at end of table.

Table 16
Risk Characterization: Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Individual Chemical Excess Risk		Cumulative Excess Risk	
				CTE	RME		CTE	RME	CTE	RME
Occupational (Facility)	Soil, 0 to 3 feet (µg/kg)	Direct Contact	Tetrachloroethene	12.4	31.4	940.0	1.E-08	3.E-08		
			Trichloroethene	4.9	8.6	46.0	1.E-07	2.E-07		
			Ethylbenzene	7.2	17	140	5.E-08	1.E-07		
			Benzo(a)anthracene	0.4	0.5	2.7	1.E-07	2.E-07		
			Benzo(a)pyrene	0.5	0.8	0.3	2.E-06	3.E-06		
			Benzo(b)fluoranthene	0.5	0.7	2.7	2.E-07	3.E-07		
			Dibenz(a,h,)anthracene	0.04	0.04	0.3	2.E-07	2.E-07		
			Indeno(1,2,3-cd)pyrene	0.4	0.6	2.7	1.E-07	2.E-07		
									3.E-06	4.E-06
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
	Indoor Air, Office ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	5.5	8.6	26	2.E-07	3.E-07		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	0.86	1.2	1.6	5.E-07	8.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	2.048	3.6	3.0	7.E-07	1.E-06		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.8	--	--		
			Tetrachloroethene	28.25	82	47.0	6.E-07	2.E-06		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									2.E-06	4.E-06
							Occupational Risk Total		*9.E-04*	*1.E-03*
	Indoor Air, Warehouse ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	8.25	10.16	26	3.E-07	4.E-07		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	0.8	0.9	1.6	5.E-07	6.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	2.324	2.8	3.0	8.E-07	9.E-07		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.8	--	--		
			Tetrachloroethene	13.65	38.3	47.0	3.E-07	8.E-07		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									2.E-06	3.E-06
							Occupational Risk Total		*9.E-04*	*1.E-03*
	Indoor Air, Shop ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	0.63	0.63	26	2.E-08	2.E-08		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	2.15	5.2	1.6	1.E-06	3.E-06		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	0.64	0.64	3.0	2.E-07	2.E-07		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.8	--	--		
			Tetrachloroethene	2.2	2.8	47.0	5.E-08	6.E-08		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	1.8	1.8	11	2.E-07	2.E-07		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
			Hexachlorobutadiene	NC	NC	0.56	--	--		
									2.E-06	4.E-06
							Occupational Risk Total		*9.E-04*	*1.E-03*

Please refer to notes at end of table.

Table 16
Risk Characterization: Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Individual Chemical Excess Risk		Cumulative Excess Risk	
				CTE	RME		CTE	RME	CTE	RME
Occupational (2503 North Albina)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	1.5	1.5	26	6.E-08	6.E-08		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	5.1	95.3	1.6	3.E-06	6.E-05		
			1,1-Dichloroethane	0.18	0.18	7.7	2.E-08	2.E-08		
			1,2-Dichloroethane	0.5	0.6	0.5	1.E-06	1.E-06		
			Trichloroethene	1.3	1.5	3.0	4.E-07	5.E-07		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.0	--	--		
			Tetrachloroethene	13	29	47.0	3.E-07	6.E-07		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									5.E-06	6.E-05
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*
Occupational (2405 North Albina)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	7.4	12.0	26	3.E-07	5.E-07		
			Methyl tert-butyl ether	0.6	0.6	47	1.E-08	1.E-08		
			Chloroform	0.8	0.8	0.5	2.E-06	2.E-06		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	0.9	1.3	1.6	6.E-07	8.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	0.3	0.3	0.5	6.E-07	6.E-07		
			Trichloroethene	2.8	3.4	3.0	9.E-07	1.E-06		
			1,4-Dioxane	4.1	4.1	1.6	3.E-06	3.E-06		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.0	--	--		
			Tetrachloroethene	24	30	47.0	5.E-07	6.E-07		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									7.E-06	8.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*
Occupational (651 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	NC	NC	26	--	--		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	1.2	1.9	1.6	7.E-07	1.E-06		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	0.8	0.8	3.0	3.E-07	3.E-07		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.0	--	--		
			Tetrachloroethene	0.8	1.2	47.0	2.E-08	3.E-08		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									1.E-06	1.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*

Please refer to notes at end of table.

Table 16
Risk Characterization: Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Individual Chemical Excess Risk		Cumulative Excess Risk	
				CTE	RME		CTE	RME	CTE	RME
Occupational (733 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	4.2	5.6	26	2.E-07	2.E-07		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	1.0	1.2	1.6	6.E-07	8.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	2.4	3.6	3.0	8.E-07	1.E-06		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.0	--	--		
			Tetrachloroethene	30	62	47.0	6.E-07	1.E-06		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									2.E-06	3.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*
Occupational (807 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	NC	NC	26	--	--		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	NC	NC	0.5	--	--		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	0.8	0.8	1.6	5.E-07	5.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	0.5	0.5	0.5	1.E-06	1.E-06		
			Trichloroethene	3.9	7.7	3.0	1.E-06	3.E-06		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.0	--	--		
			Tetrachloroethene	73	200	47.0	2.E-06	4.E-06		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									4.E-06	8.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*
Urban Residential (807 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	0.2	--	--		
			Methylene chloride	NC	NC	14	--	--		
			Methyl tert-butyl ether	NC	NC	26	--	--		
			Chloroform	NC	NC	0.3	--	--		
			Carbon tetrachloride	NC	NC	1.1	--	--		
			Benzene	0.8	0.8	0.9	9.E-07	1.E-06		
			1,1-Dichloroethane	NC	NC	4.1E+00	--	--		
			1,2-Dichloroethane	0.5	0.5	0.3	2.E-06	2.E-06		
			Trichloroethene	3.9	7.7	1.6	2.E-06	5.E-06		
			1,4-Dioxane	NC	NC	0.9	--	--		
			Bromodichloromethane	NC	NC	0.2	--	--		
			1,1,2-Trichloroethane	NC	NC	0.4	--	--		
			Tetrachloroethene	73	200	26.0	3.E-06	8.E-06		
			Dibromochloromethane	NC	NC	0.3	--	--		
			Bromoform	NC	NC	6.0	--	--		
			1,4-Dichlorobenzene	NC	NC	0.6	--	--		
									8.E-06	2.E-05
							Urban Residential Risk Total		*8.E-06*	*2.E-05*

Please refer to notes at end of table.

Table 16
Risk Characterization: Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Individual Chemical Excess Risk		Cumulative Excess Risk	
				CTE	RME		CTE	RME	CTE	RME
Occupational (816 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	2.8	--	--		
			Methylene chloride	NC	NC	26	--	--		
			Methyl tert-butyl ether	NC	NC	47	--	--		
			Chloroform	1.0	1.0	0.5	2.E-06	2.E-06		
			Carbon tetrachloride	NC	NC	2.0	--	--		
			Benzene	0.8	1.0	1.6	5.E-07	6.E-07		
			1,1-Dichloroethane	NC	NC	7.7	--	--		
			1,2-Dichloroethane	NC	NC	0.5	--	--		
			Trichloroethene	0.2	0.2	3.0	8.E-08	8.E-08		
			1,4-Dioxane	NC	NC	1.6	--	--		
			Bromodichloromethane	NC	NC	0.3	--	--		
			1,1,2-Trichloroethane	NC	NC	0.0	--	--		
			Tetrachloroethene	4	5	47.0	9.E-08	1.E-07		
			Dibromochloromethane	NC	NC	0.5	--	--		
			Bromoform	NC	NC	11	--	--		
			1,4-Dichlorobenzene	NC	NC	1.1	--	--		
									3.E-06	3.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	3.6	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	0.5	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*
Urban Residential (816 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Vinyl chloride	NC	NC	0.2	--	--		
			Methylene chloride	NC	NC	14	--	--		
			Methyl tert-butyl ether	NC	NC	26	--	--		
			Chloroform	1.0	1.0	0.3	3.E-06	3.E-06		
			Carbon tetrachloride	NC	NC	1.1	--	--		
			Benzene	0.8	1.0	0.9	9.E-07	1.E-06		
			1,1-Dichloroethane	NC	NC	4.1	--	--		
			1,2-Dichloroethane	NC	NC	0.3	--	--		
			Trichloroethene	0.2	0.2	1.6	2.E-07	2.E-07		
			1,4-Dioxane	NC	NC	0.9	--	--		
			Bromodichloromethane	NC	NC	0.2	--	--		
			1,1,2-Trichloroethane	NC	NC	0.4	--	--		
			Tetrachloroethene	4	5	26.0	2.E-07	2.E-07		
			Dibromochloromethane	NC	NC	0.3	--	--		
			Bromoform	NC	NC	6.0	--	--		
			1,4-Dichlorobenzene	NC	NC	0.6	--	--		
									5.E-06	5.E-06
							Urban Residential Risk Total		*5.E-06*	*5.E-06*
Occupational (North Mississippi Block)	B-41-1 Groundwater ($\mu g/L$)	Vapor Intrusion into buildings	Chloroform	NC	NC	1200	--	--		
			Benzene	NC	NC	2,800	--	--		
			1,1-Dichloroethane	NC	NC	16,000	--	--		
			Methylene Chloride	NC	NC	99,000	--	--		
			Methyl-t-butyl ether	NC	NC	590,000	--	--		
			Tetrachloroethene	1.5	1.5	32,000	5.E-11	5.E-11		
			Trichloroethene	5.3	5.3	3,300	2.E-09	2.E-09		
			Vinyl Chloride	NC	NC	910	--	--		
									2.E-09	2.E-09
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	102.8	202	0.99	1.E-04	2.E-04		
			Benzene	4.3	4.3	2	2.E-06	2.E-06		
			1,1-Dichloroethane	21.65	26	13	2.E-06	2.E-06		
			Methylene Chloride	22	42	27	8.E-07	2.E-06		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	6,715	8,118	64	1.E-04	1.E-04		
			Trichloroethene	2,451	2,938	4	7.E-04	8.E-04		
			Vinyl Chloride	NC	NC	1	--	--		
									9.E-04	1.E-03
							Occupational Risk Total		*9.E-04*	*1.E-03*
Occupational (North Larrabee Avenue)	B-51-34 Groundwater ($\mu g/L$)	Vapor Intrusion into buildings	Chloroform	NC	NC	1200	--	--		
			Benzene	NC	NC	2,800	--	--		
			1,1-Dichloroethane	NC	NC	16,000	--	--		
			Methylene Chloride	NC	NC	99,000	--	--		
			Methyl-t-butyl ether	NC	NC	590,000	--	--		
			Tetrachloroethene	NC	NC	32,000	--	--		
			Trichloroethene	NC	NC	3,300	--	--		
			Vinyl Chloride	NC	NC	910	--	--		
									0.E+00	0.E+00
	MW-12 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	0.7	0.7	0.99	7.E-07	7.E-07		
			Benzene	NC	NC	2	--	--		
			1,1-Dichloroethane	NC	NC	13	--	--		
			Methylene Chloride	NC	NC	27	--	--		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	5	7.472	64	8.E-08	1.E-07		
			Trichloroethene	4	5	4	1.E-06	1.E-06		
			Vinyl Chloride	NC	NC	1	--	--		
									2.E-06	2.E-06
							Occupational Risk Total		*2.E-06*	*2.E-06*

Please refer to notes at end of table.

Table 16
Risk Characterization: Carcinogen
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	EPC		RBC	Individual Chemical Excess Risk		Cumulative Excess Risk	
				CTE	RME		CTE	RME	CTE	RME
Occupational (North Railroad Street)	B-50-30 Groundwater (µg/L)	Vapor Intrusion into buildings	Chloroform	NC	NC	1200	--	--		
			Benzene	NC	NC	2,800	--	--		
			1,1-Dichloroethane	NC	NC	16,000	--	--		
			Methylene Chloride	NC	NC	99,000	--	--		
			Methyl-t-butyl ether	NC	NC	590,000	--	--		
			Tetrachloroethene	7.56	7.56	32,000	2.E-10	2.E-10		
			Trichloroethene	6	6	3,300	2.E-09	2.E-09		
			Vinyl Chloride	0.5	0.5	910	5.E-10	5.E-10		
									3.E-09	3.E-09
	MW-10 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	10	20	0.99	1.E-05	2.E-05		
			Benzene	NC	NC	2	--	--		
			1,1-Dichloroethane	1.0	1.0	13	8.E-08	8.E-08		
			Methylene Chloride	4	6	27	1.E-07	2.E-07		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	316	356.4	64	5.E-06	6.E-06		
			Trichloroethene	110	122	4	3.E-05	3.E-05		
			Vinyl Chloride	NC	NC	1	--	--		
									5.E-05	6.E-05
							Occupational Risk Total		*5.E-05*	*6.E-05*
Occupational (North Railroad Street)	B-63- 1 Groundwater (µg/L)	Vapor Intrusion into buildings	Chloroform	NC	NC	1200	--	--		
			Benzene	NC	NC	2,800	--	--		
			1,1-Dichloroethane	NC	NC	16,000	--	--		
			Methylene Chloride	NC	NC	99,000	--	--		
			Methyl-t-butyl ether	NC	NC	590,000	--	--		
			Tetrachloroethene	NC	NC	32,000	--	--		
			Trichloroethene	NC	NC	3,300	--	--		
			Vinyl Chloride	NC	NC	910	--	--		
									0.E+00	0.E+00
	MW-15 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	NC	NC	0.99	--	--		
			Benzene	NC	NC	2	--	--		
			1,1-Dichloroethane	NC	NC	13	--	--		
			Methylene Chloride	NC	NC	27	--	--		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	12	16.59	64	2.E-07	3.E-07		
			Trichloroethene	3	5	4	9.E-07	1.E-06		
			Vinyl Chloride	NC	NC	1	--	--		
									1.E-06	2.E-06
							Occupational Risk Total		*1.E-06*	*2.E-06*
Occupational (North Loring Street)	B-49-30 Groundwater (µg/L)	Vapor Intrusion into buildings	Chloroform	NC	NC	1200	--	--		
			Benzene	NC	NC	2,800	--	--		
			1,1-Dichloroethane	NC	NC	16,000	--	--		
			Methylene Chloride	NC	NC	99,000	--	--		
			Methyl-t-butyl ether	NC	NC	590,000	--	--		
			Tetrachloroethene	12	12	32,000	4.E-10	4.E-10		
			Trichloroethene	6	6	3,300	2.E-09	2.E-09		
			Vinyl Chloride	NC	NC	910	--	--		
									2.E-09	2.E-09
	MW-13 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	NC	NC	0.99	--	--		
			Benzene	NC	NC	2	--	--		
			1,1-Dichloroethane	NC	NC	13	--	--		
			Methylene Chloride	NC	NC	27	--	--		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	195	220.7	64	3.E-06	3.E-06		
			Trichloroethene	58	64	4	2.E-05	2.E-05		
			Vinyl Chloride	NC	NC	1	--	--		
									2.E-05	2.E-05
							Occupational Risk Total		*2.E-05*	*2.E-05*
Occupational (North River Street)	B-66 (31-35) Groundwater (µg/L)	Vapor Intrusion into buildings	Chloroform	NC	NC	1200	--	--		
			Benzene	NC	NC	2,800	--	--		
			1,1-Dichloroethane	NC	NC	16,000	--	--		
			Methylene Chloride	NC	NC	99,000	--	--		
			Methyl-t-butyl ether	NC	NC	590,000	--	--		
			Tetrachloroethene	NC	NC	32,000	--	--		
			Trichloroethene	NC	NC	3,300	--	--		
			Vinyl Chloride	NC	NC	910	--	--		
									0.E+00	0.E+00
	MW-14 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	NC	NC	0.99	--	--		
			Benzene	NC	NC	2	--	--		
			1,1-Dichloroethane	NC	NC	13	--	--		
			Methylene Chloride	NC	NC	27	--	--		
			Methyl-t-butyl ether	NC	NC	67	--	--		
			Tetrachloroethene	147	220	64	2.E-06	3.E-06		
			Trichloroethene	47	62	4	1.E-05	2.E-05		
			Vinyl Chloride	NC	NC	1	--	--		
									2.E-05	2.E-05
							Occupational Risk Total		*2.E-05*	*2.E-05*

Notes:
1. EPC = Exposure Point Concentration; from Table 2.
2. CT = Central Tendency.
3. RME = Reasonable Maximum Exposure.
4. RBC = Risk-Based Concentration; from Table 3.
5. µg/kg = Micrograms per kilogram.
6. µg/L = Micrograms per liter.
7. µg/m^3 = Micrograms per cubic meter.
8. **Bold** = Risk level exceeds acceptable level of 1 x 10-6 for individual compounds of 1 x 10-5 for cumulative exposur
9. NC = Not calculated.

Table 17
Groundwater-Surface Water Screening
Tarr, Inc.
Portland, Oregon

Sample ID:	MW-14				DEQ Aquatic SLV	ORNL Tier II SCV
Lab ID:	PTL0402-15		PUC0773-08			
Date Sampled:	12/9/2010		3/22/2011			
VOCs (µg/L)					µg/L	
cis-1,2-Dichloroethene	9.37		12.0		590	590
Tetrachloroethene (PCE)	117		148		240	98
1,1,1-Trichloroethane (TCA)	1.02		2	U	11	11
Trichloroethene (TCE)	41.0		53.2		21,000	47

Notes:

1. VOCs = Volatile organic compounds by EPA Method 8260.
2. µg/L = Micrograms per liter.
3. U = The compound was analyzed for, but was not detected at or above the quantitation limit presented.
4. DEQ Aquatic SLVs from DEQ, 1998.
5. ORNL Tier II SCVs from Suter II, G.W. and Tsao, C.L., 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ORNL publication ES/ER/TM-96/R2.

Table 18
Initial Screening: COI Screening with Downgradient Data
Tarr, Inc.
Portland, Oregon

SCE COPC	Groundwater (µg/L) Detection Frequency				Retained for SCE Screening?
	Det.	/	Total	%	
Benzene	1	/	50	2%	Yes
Chloroform	15	/	50	30%	Yes
1,1-Dichloroethane (1,1-DCA)	9	/	50	18%	Yes
cis-1,2-Dichloroethene	42	/	50	84%	Yes
trans-1,2-Dichloroethene	2	/	50	4%	Yes
Methyl-t-butylether (MTBE)	0	/	50	0%	No
Methylene Chloride (Dichloromethane)	6	/	50	12%	Yes
Tetrachloroethene (PCE)	50	/	50	100%	Yes
Trichloroethene (TCE)	50	/	50	100%	Yes
Vinyl Chloride	0	/	50	0%	No
Ethylbenzene	0	/	50	0%	No

Notes:
SCE = Source Control Evaluation
COPC = Chemical of Potential Concern
µg/L = micrograms per liter (ppb)

Table 19
SCE COPC Identification
Tarr, Inc.
Portland, Oregon

SCE COPC	MW-14 Groundwater (µg/L) SCE Screening									
	MW-14 Detection Frequency				Detection Limit Range					
	Det.	/	Total	%	Min.	Max.	SL	Cij	Rij	Comments
Benzene	0	/	8	0%	1	5	1.2	--	--	Not detected in MW-14. Detection limits approximately equal to or less than JSCS SL
Chloroform	0	/	8	0%	1	5	0.17	--	--	Not Detected in MW-14, likely not Facility derived
1,1-Dichloroethane	0	/	8	0%	1	5	47	--	--	Not Detected in MW-14, Detection limits less than JSCS SL
cis-1,2-Dichloroethene	8	/	8	100%	--	--	590	11.6	0.02	Detected concentration less than SL
trans-1,2-Dichloroethene	0	/	8	0%	1	5	110	--	--	Not Detected in MW-14, Detection limits less than JSCS SL
Methylene Chloride	0	/	8	0%	5	25	8.9	--	--	Not detected in MW-14. Detection limits approximately equal to or less than JSCS SL
Tetrachloroethene (PCE)	8	/	8	100%	--	--	0.12	167	1,391	Detected in MW-14 GW greater than JSCS SL
Trichloroethene (TCE)	8	/	8	100%	--	--	0.17	51.5	303	Detected in MW-14 GW greater than JSCS SL

Notes:
SL = Screening level (lowest JSCS human health or ecological SLV from DEQ, 2005)
-- = Not applicable.
SCE COPC = Chemicals of Potential Concern for Source Control Evaluatior
Cij = EPC from HHRA
Rij = Risk ratio for compound i in medium j (Cij/SL); compound is a SCE COPC if Rij is greater than 1

Table 20
Risk Summary: Non-Carcinogens
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemicals with HQ >1	Hazard Quotient		Hazard Index		Adjusted Hazard Index (Non-Priestley/Tarr Sources Removed)		Current Risk Scenario (Non-Priestley/Tarr Sources Removed)	
				CTE	RME	CTE	RME	CTE	RME	CTE	RME
Occupational Workers (Facility Areas)	Outdoor Air ($\mu g/m^3$)	Air Inhalation		Occupational Risk Total		*0.11*	*0.14*	*0.11*	*0.14*	*0.11*	*0.14*
Occupational Workers (Non-Facility Areas)	Outdoor Air ($\mu g/m^3$)	Air Inhalation		Occupational Risk Total		*0.044*	*0.045*	*0.044*	*0.045*	*0.044*	*0.045*
Urban Residents (Non-Facility Areas)	Outdoor Air ($\mu g/m^3$)	Air Inhalation		Urban Resident Risk Total		*0.18*	*0.19*	*0.18*	*0.19*	*0.18*	*0.19*
Excavation Worker	Soil, 0 to 15 feet ($\mu g/kg$)	Direct Contact		Excavation Worker Risk Total		*0.001*	*0.002*	*0.001*	*0.002*	*0.001*	*0.002*
Construction Worker	Soil, 0 to 15 feet ($\mu g/kg$)	Direct Contact	Diesel-Range Organics	5.0E-01	1.9E+00	0.59	2.0	0.59	2.0	0.59	2.0
				Construction Worker Risk Total		*0.59*	*2.0*	*0.59*	*2.0*	*0.59*	*2.0*
Occupational Workers	Soil, 0 to 3 feet ($\mu g/kg$)	Direct Contact				0.22	0.71	0.22	0.71	0.22	0.71
				Occupatinal Worker Risk Total		*0.22*	*0.7*	*0.22*	*0.7*	*0.22*	*0.7*
Occupational Workers	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air, Office ($\mu g/m^3$)	Vapor Intrusion, air inhalation				0.52	1.0	0.52	1.0	0.52	1.0
				Occupational Risk Total		*204.5*	*246.3*	*204.5*	*246.3*	*0.7*	*1.7*
Occupational Workers	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air, Warehouse ($\mu g/m3$)	Vapor Intrusion, Air Inhalation	~~1,2,4-Trimethylbenzene~~	~~8.4E-01~~	~~2.2E+00~~	1.2	2.8	0.4	0.6	0.36	0.6
				Occupational Risk Total		*205*	*248*	*209*	*248*	*0.58*	*1.3*
Occupational Workers	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air, Shop ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation				0.30	0.31	0.30	0.31	0.30	0.31
				Occupational Risk Total		*204*	*246*	*204*	*246*	*0.52*	*1.0*

Please refer to notes at end of table.

Table 20
Risk Summary: Non-Carcinogens
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemicals with HQ >1	Hazard Quotient		Hazard Index		Adjusted Hazard Index (Non-Priestley/Tarr Sources Removed)		Current Risk Scenario (Non-Priestley/Tarr Sources Removed)	
				CTE	RME	CTE	RME	CTE	RME	CTE	RME
Occupational Workers (2503 North Albina)	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation				0.44	0.65	0.44	0.65	0.44	0.65
				Occupational Risk Total		*204*	*245*	*204*	*245*	*0.44*	*0.65*
Occupational Workers (2405 North Albina)	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation				0.89	1.1	0.89	1.1	0.89	1.1
				Occupational Risk Total		*205*	*246*	*205*	*246*	*0.89*	*1.1*
Occupational Workers (651 North Russell)	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation				0.18	0.18	0.18	0.18	0.18	0.18
				Occupational Risk Total		*204*	*245*	*204*	*245*	*0.18*	*0.18*
Occupational Workers (733 North Russell)	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air (µg/m3)	Vapor Intrusion, Air Inhalation				0.48	0.80	0.48	0.80	0.48	0.80
				Occupational Risk Total		*204*	245	*204*	245	*0.48*	*0.80*
Occupational Workers (807 North Russell)	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation	~~Tetrachloroethene~~	~~4.1E-01~~	~~1.1E+00~~	0.90	2.0	0.50	0.90	0.50	0.90
				Occupational Risk Total		204.7	246.6	*204.8*	*245.9*	*0.5*	*0.9*
Occupational Workers (816 North Russell)	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	245	204	245		
	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation				0.05	0.06	0.05	0.06	0.05	0.06
				Occupational Risk Total		*204*	*245*	*204*	*245*	*204*	*245*

Please refer to notes at end of table.

Table 20
Risk Summary: Non-Carcinogens
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemicals with HQ >1	Hazard Quotient		Hazard Index		Adjusted Hazard Index (Non-Priestley/Tarr Sources Removed)		Current Risk Scenario (Non-Priestley/Tarr Sources Removed)	
				CTE	RME	CTE	RME	CTE	RME	CTE	RME
Occupational (North Mississippi Avenue)	B-41-1 Groundwater (µg/L)	Vapor Intrusion Into Buildings				0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	1.8E+00 1.8E+02 2.7E+01	2.1E+00 2.1E+02 3.2E+01	204	244.5	204	244.5		
				Occupational Risk Total		*204*	*245*	*204*	*245*	*0.00001*	*0.00001*
Occupational (North Larrabee Avenue)	B-51-34 Groundwater (µg/L)	Vapor Intrusion Into Buildings				0.000	0.00	0.000	0.00	0.00	0.00
	MW-12 Groundwater	Industrial Groundwater Use				0.31	0.36	0.31	0.36		
				Occupational Risk Total		*0.31*	*0.36*	*0.31*	*0.36*	*0.00*	*0.00*
Occupational (North Railroad Street)	B-50-30 Groundwater (µg/L)	Vapor Intrusion Into Buildings				0.001	0.001	0.001	0.001	0.001	0.001
	MW-10 Groundwater	Industrial Groundwater Use	Trichloroethene Tetrachloroethene	7.8E+00 1.3E+00	8.7E+00 1.4E+00	9.2	10.2	9.2	10.2		
				Occupational Risk Total		*9.2*	*10.2*	*9.2*	*10.2*	*0.001*	*0.001*
Occupational (North Railroad Street)	B-63- 1 Groundwater (µg/L)	Vapor Intrusion Into Buildings				0.000	0.000	0.000	0.000	0.000	0.000
	MW-15 Groundwater (µg/L)	Industrial Groundwater Use				0.30	0.43	0.30	0.43		
				Occupational Risk Total		*0.30*	*0.43*	*0.30*	*0.43*	*0.00*	*0.00*
Occupational (North Loring Street)	B-49-30 Groundwater (µg/L)	Vapor Intrusion Into Buildings	Trichloroethene	4.1E+00	4.6E+00	0.001	0.001	0.001	0.001	0.001	0.001
	MW-13 Groundwater (µg/L)	Industrial Groundwater Use				4.9	5.5	4.9	5.5		
				Occupational Risk Total		*4.9*	*5.5*	*4.9*	*5.5*	*0.001*	*0.001*
Occupational (North River Street)	B-66 (31-35) Groundwater (µg/L)	Vapor Intrusion Into Buildings				0.000	0.000	0.000	0.000	0.000	0.000
	MW-14 Groundwater (µg/L)	Industrial Groundwater Use	Trichloroethene	3.3E+00	4.4E+00	4.0	5.4	4.0	5.4		
				Occupational Risk Total		*4.0*	*5.4*	*4.0*	*5.4*	*0.0*	*0.0*
Urban Residents (807 North Russell)	Indoor Air (µg/m3)	Vapor Intrusion, Air Inhalation	~~Trichloroethene~~ ~~Tetrachloroethene~~	~~1.9E+00~~ ~~1.7E+00~~	~~3.7E+00~~ ~~4.8E+00~~	3.8	8.6				
				Urban Residential Risk Total		*3.8*	*8.6*	0.22	0.22	0.22	0.22
Urban Residents (816 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, Air Inhalation				0.22	0.24	0.22	0.24	0.22	0.24
				Urban Residential Risk Total		*0.22*	*0.24*	*0.22*	*0.24*	*0.22*	*0.24*

Notes:
1. 1,2,4-Trimethylbenzene Strikethrough indicates chemical not originating from Priestley/Tarr and removed from risk estimate.
2. CT = Central Tendency.
3. RME = Reasonable Maximum Exposure.
4. µg/kg = Micrograms per kilogram.
5. µg/L = Micrograms per liter.
6. $\mu g/m^3$ = Micrograms per cubic meter.
7. **Bold** = Hazard Quotient or Hazard Index exceeds acceptable level of 1.0.

Table 21
Risk Summary: Carcinogens
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	Individual Chemical ELCR		Cumulative ELCR		Adjusted ELCR (Non-Priestley/Tarr Sources Removed)		Current Risk Scenario (Non-Priestley/Tarr Sources Removed)	
				CTE	RME	CTE	RME	CTE	RME	CTE	RME
Occupational (Facility)	Outdoor Air (µg/m3)	Air Inhalation				1.E-06	2.E-06	1.E-06	2.E-06	1.E-06	2.E-06
				Occupational Worker Risk Total		*1.E-06*	*2.E-06*	*1.E-06*	*2.E-06*	*1.E-06*	*2.E-06*
Occupational (Non-Facility Areas)	Outdoor Air (µg/m3)	Air Inhalation	Chloroform	4.E-06	4.E-06	4.E-06	5.E-06	4.E-06	5.E-06	4.E-06	5.E-06
				Occupational Worker Risk Total		*4.E-06*	*5.E-06*	*4.E-06*	*5.E-06*	*4.E-06*	*5.E-06*
Urban Residential (Non-Facility Areas)	Outdoor Air (µg/m3)	Air Inhalation	Chloroform Benzene	7.E-06 1.E-06	7.E-06 2.E-06	8.E-06	9.E-06	8.E-06	9.E-06	8.E-06	9.E-06
				Urban Resident Risk Total		*8.E-06*	*9.E-06*	*8.E-06*	*9.E-06*	*8.E-06*	*9.E-06*
Excavation Worker	Soil, 0 to 15 feet (µg/kg)	Direct Contact				1.E-08	2.E-08	1.E-08	2.E-08	1.E-08	2.E-08
				Excavation Worker Risk Total		*1.E-08*	*2.E-08*	*1.E-08*	*2.E-08*	*1.E-08*	*2.E-08*
Construction Worker	Soil, 0 to 15 feet (µg/kg)	Direct Contact				3.E-07	5.E-07	3.E-07	5.E-07	3.E-07	5.E-07
				Construction Worker Risk Total		*3.E-07*	*5.E-07*	*3.E-07*	*5.E-07*	*3.E-07*	*5.E-07*
Occupational Worker	Soil, 0 to 3 feet (µg/kg)	Direct Contact	Benzo(a)pyrene	2.E-06	3.E-06	3.E-06	4.E-06	3.E-06	4.E-06	3.E-06	4.E-06
Occupational Worker	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform Benzene 1,1-Dichloroethane ~~Methylene Chloride~~ Tetrachloroethene Trichloroethene	1.E-04 2.E-06 2.E-06 ~~8.E-07~~ 1.E-04 7.E-04	2.E-04 2.E-06 2.E-06 ~~2.E-06~~ 1.E-04 8.E-04	9.E-04	1.E-03	9.E-04	1.E-03		
	Indoor Air, Office (µg/m^3)	Vapor Intrusion, air inhalation	Tetrachloroethene	6.E-07	2.E-06	2.E-06	4.E-06	2.E-06	4.E-06	2.E-06	4.E-06
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*5.E-06*	*8.E-06*
Occupational Worker	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform Benzene 1,1-Dichloroethane ~~Methylene Chloride~~ Tetrachloroethene Trichloroethene	1.E-04 2.E-06 2.E-06 ~~8.E-07~~ 1.E-04 7.E-04	2.E-04 2.E-06 2.E-06 ~~2.E-06~~ 1.E-04 8.E-04	9.E-04	1.E-03	9.E-04	1.E-03		
	Indoor Air, Warehouse (µg/m3)	Vapor Intrusion, air inhalation				2.E-06	3.E-06	2.E-06	3.E-06	2.E-06	3.E-06
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*5.E-06*	*7.E-06*
Occupational Worker	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform Benzene 1,1-Dichloroethane ~~Methylene Chloride~~ Tetrachloroethene Trichloroethene	1.E-04 2.E-06 2.E-06 ~~8.E-07~~ 1.E-04 7.E-04	2.E-04 2.E-06 2.E-06 ~~2.E-06~~ 1.E-04 8.E-04	9.E-04	1.E-03	9.E-04	1.E-03		
	Indoor Air, Shop (µg/m^3)	Vapor Intrusion, air inhalation	~~Benzene~~	~~1.E-06~~	~~3.E-06~~	2.E-06	4.E-06	2.E-06	4.E-06	2.E-06	4.E-06
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*5.E-06*	*8.E-06*

Please refer to notes at end of table.

Table 21
Risk Summary: Carcinogens
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	Individual Chemical ELCR		Cumulative ELCR		Adjusted ELCR (Non-Priestley/Tarr Sources Removed)		Current Risk Scenario (Non-Priestley/Tarr Sources Removed)	
				CTE	RME	CTE	RME	CTE	RME	CTE	RME
Occupational (2503 North Albina)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	~~Benzene~~	~~3.E-06~~	~~6.E-05~~	5.E-06	6.E-05	2.E-06	2.E-06	2.E-06	2.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--	9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*2.E-06*	*2.E-06*
Occupational (2405 North Albina)	Indoor Air ($\mu g/m3$)	Vapor Intrusion, air inhalation	Chloroform	2.E-06	2.E-06						
			~~1,4-Dioxane~~	~~3.E-06~~	~~3.E-06~~	7.E-06	8.E-06	4.E-06	5.E-06	4.E-06	5.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--	9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*4.E-06*	*5.E-06*
Occupational (651 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation				1.E-06	1.E-06	1.E-06	1.E-06	1.E-06	1.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--	9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*1.E-06*	*1.E-06*
Occupational (733 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation				2.E-06	3.E-06	2.E-06	3.E-06	2.E-06	3.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--	9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*2.E-06*	*3.E-06*
Occupational (807 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	~~Trichloroethene~~	~~1.E-06~~	~~3.E-06~~						
			~~Tetrachloroethene~~	~~2.E-06~~	~~4.E-06~~	4.E-06	8.E-06	1.E-06	2.E-06	1.E-06	2.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--	9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*1.E-06*	*2.E-06*
Occupational (816 North Russell)	Indoor Air ($\mu g/m^3$)	Vapor Intrusion, air inhalation	Chloroform	2.E-06	2.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06	3.E-06
	MW-8 Groundwater ($\mu g/L$)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--	9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*3.E-06*	*3.E-06*

Please refer to notes at end of table.

Table 21
Risk Summary: Carcinogens
Tarr, Inc.
Portland, Oregon

Receptor	Medium and Location	Pathway	Chemical	Individual Chemical ELCR		Cumulative ELCR		Adjusted ELCR (Non-Priestley/Tarr Sources Removed)		Current Risk Scenario (Non-Priestley/Tarr Sources Removed)	
				CTE	RME	CTE	RME	CTE	RME	CTE	RME
Occupational (North Mississippi Block)	B-41-1 Groundwater (µg/L)	Vapor Intrusion into buildings				2.E-09	2.E-09	2.E-09	2.E-09	2.E-09	2.E-09
	MW-8 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	1.E-04	2.E-04						
			Benzene	2.E-06	2.E-06						
			1,1-Dichloroethane	2.E-06	2.E-06						
			~~Methylene Chloride~~	~~8.E-07~~	~~2.E-06~~						
			Tetrachloroethene	1.E-04	1.E-04						
			Trichloroethene	7.E-04	8.E-04						
			Vinyl Chloride	--	--						
						9.E-04	1.E-03	9.E-04	1.E-03		
				Occupational Risk Total		*9.E-04*	*1.E-03*	*9.E-04*	*1.E-03*	*2.E-09*	*2.E-09*
Occupational (North Larrabee Avenue)	B-51-34 Groundwater (µg/L)	Vapor Intrusion into buildings				0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00
	MW-12 Groundwater	Industrial Groundwater Use	From cumulative exposures			2.E-06	2.E-06	2.E-06	2.E-06		
				Occupational Risk Total		*2.E-06*	*2.E-06*	*2.E-06*	*2.E-06*	*0.E+00*	*0.E+00*
Occupational (North Railroad Street)	B-50-30 Groundwater (µg/L)	Vapor Intrusion into buildings				3.E-09	3.E-09	3.E-09	3.E-09	3.E-09	3.E-09
	MW-10 Groundwater (µg/L)	Industrial Groundwater Use	Chloroform	1.E-05	2.E-05						
			Tetrachloroethene	5.E-06	6.E-06						
			Trichloroethene	3.E-05	3.E-05						
						5.E-05	6.E-05	5.E-05	6.E-05		
				Occupational Risk Total		*5.E-05*	*6.E-05*	*5.E-05*	*6.E-05*	3.E-09	3.E-09
Occupational (North Railroad Street)	B-63- 1 Groundwater (µg/L)	Vapor Intrusion into buildings				0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00
	MW-15 Groundwater (µg/L)	Industrial Groundwater Use				1.E-06	2.E-06	1.E-06	2.E-06		
				Occupational Risk Total		*1.E-06*	*2.E-06*	*1.E-06*	*2.E-06*	0.E+00	0.E+00
Occupational (North Loring Street)	B-49-30 Groundwater (µg/L)	Vapor Intrusion into buildings				2.E-09	2.E-09	2.E-09	2.E-09	2.E-09	2.E-09
	MW-13 Groundwater (µg/L)	Industrial Groundwater Use	Tetrachloroethene	3.E-06	3.E-06						
			Trichloroethene	2.E-05	2.E-05						
						2.E-05	2.E-05	2.E-05	2.E-05		
				Occupational Risk Total		*2.E-05*	*2.E-05*	*2.E-05*	*2.E-05*	2.E-09	2.E-09
Occupational (North River Street)	B-66 (31-35) Groundwater (µg/L)	Vapor Intrusion into buildings				0.E+00	0.E+00	0.E+00	0.E+00	0.E+00	0.E+00
	MW-14 Groundwater (µg/L)	Industrial Groundwater Use	Tetrachloroethene	2.E-06	3.E-06						
			Trichloroethene	1.E-05	2.E-05						
						2.E-05	2.E-05	2.E-05	2.E-05		
		Industrial Groundwater Use									
				Occupational Risk Total		*2.E-05*	*2.E-05*	2.E-05	2.E-05	0.E+00	0.E+00
Urban Residential (807 North Russell)	Indoor Air (µg/m^3)	Vapor Intrusion, air inhalation	~~1,2 Dichloroethane~~	~~2.E-06~~	~~2.E-06~~						
			~~Trichloroethene~~	~~2.E-06~~	~~5.E-06~~						
			~~Tetrachloroethene~~	~~3.E-06~~	~~8.E-06~~						
						8.E-06	2.E-05	9.E-07	1.E-06		
				Urban Residential Risk Total		*8.E-06*	*2.E-05*	*9.E-07*	*1.E-06*	*9.E-07*	*1.E-06*
Urban Residential (816 North Russell)	Indoor Air (µg/m^3)	Vapor Intrusion, air inhalation	Chloroform	3.E-06	3.E-06						
						5.E-06	5.E-06	5.E-06	5.E-06	5.E-06	5.E-06
				Urban Residential Risk Total		*5.E-06*	*5.E-06*	*5.E-06*	*5.E-06*	*5.E-06*	*5.E-06*

Notes:
1. 1,2,4-Trimethylbenzene Strikethrough indicates chemical not originating from Priestley/Tarr and removed from risk estimate.
2. CT = Central Tendency.
3. RME = Reasonable Maximum Exposure.
4. µg/kg = Micrograms per kilogram.
5. µg/L = Micrograms per liter.
6. µg/m^3 = Micrograms per cubic meter.
7. **Bold** = Risk level exceeds acceptable level of 1 x 10-6 for individual compounds of 1 x 10-5 for cumulative exposure.

Note: Base map prepared from USGS 7.5-minute quadrangle of Portland, OR, dated 2011 as provided by USGS.gov.

0 2,000 4,000

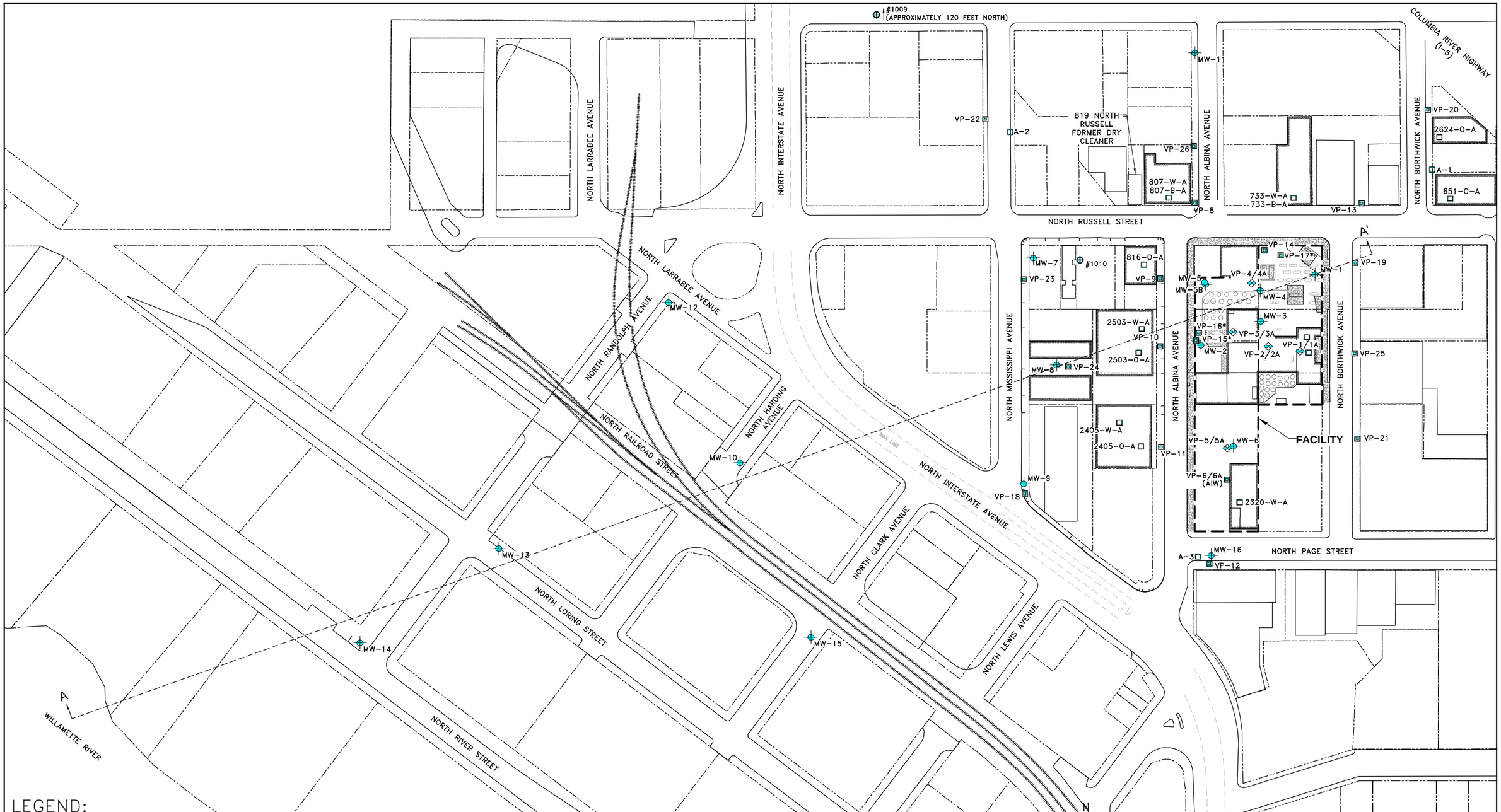
Approximate Scale in Feet

N

Site Location Map

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1073-12	Figure
	December 2013		1



LEGEND:

- MW-2 — GROUNDWATER MONITORING WELL
- #1010 — IDENTIFIED WATER WELL LOCATION AND DESIGNATION (APPROXIMATE)
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE
- VP-1/1A — CO-LOCATED (SOIL VAPOR/ AMBIENT AIR) SAMPLE LOCATION
- CONCRETE
- PARCEL/TAX LOT LINE
- CURBLINE
- FENCELINE
- BUILDING
- A — A' CROSS SECTION LOCATION (SEE FIGURES 5abc)

0 150 300
SCALE IN FEET

SOURCES: 1) BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006) AND A TAX LOT FILE FROM THE CITY OF PORTLAND (2010).

Site Vicinity Plan

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		2

Legend:

- MW-1 — Groundwater Monitoring Well
- OWS — Oil/Water Separator
- Stormwater Catch Basin
- Fence
- Former UST
- ST — ST — Stormwater Line

N

0 30 60

Approximate Scale in Feet

NOTE: Photograph from 2011 - Google Imagery. Aerial dated August 15, 2010.

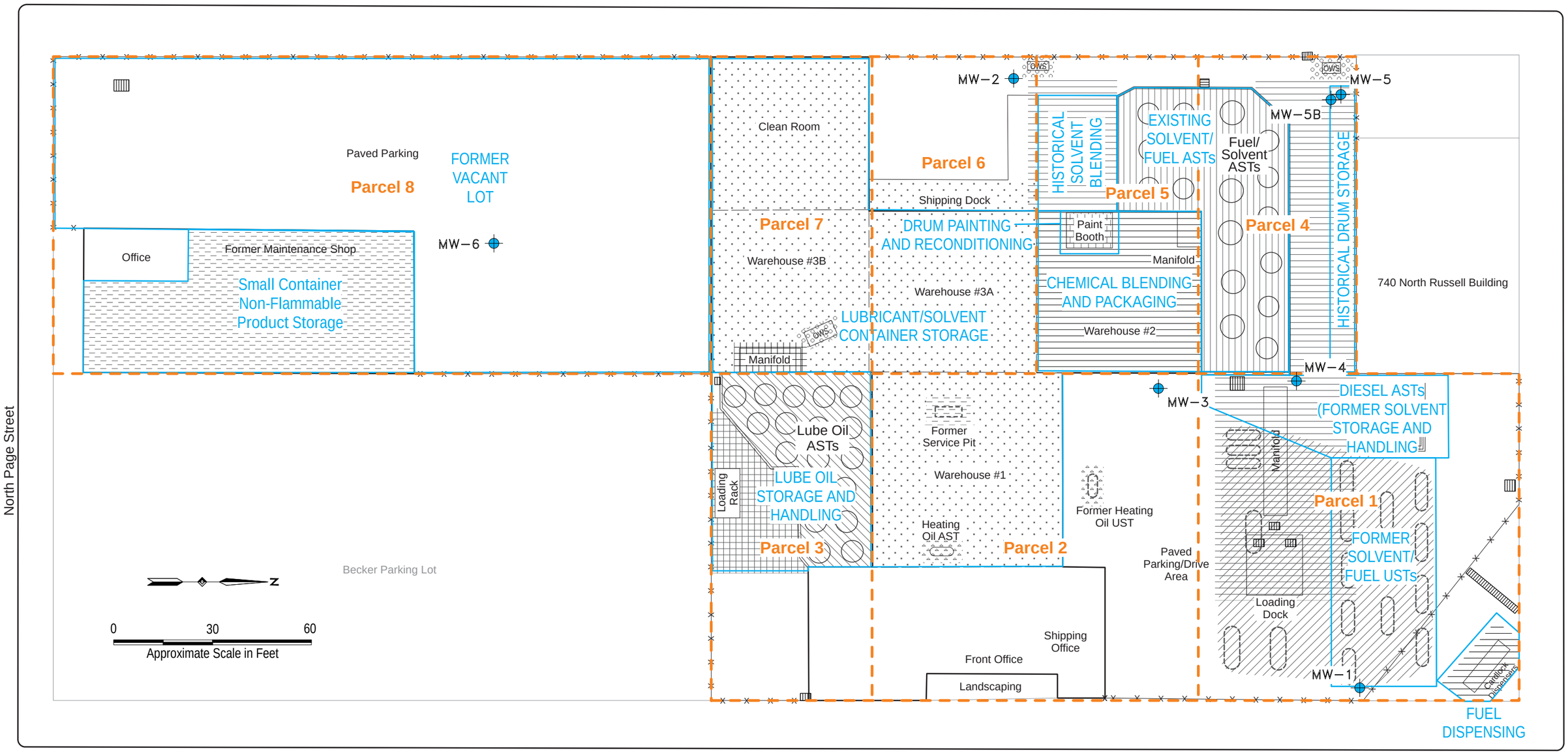
Facility Layout

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
	December 2013	3



Legend:

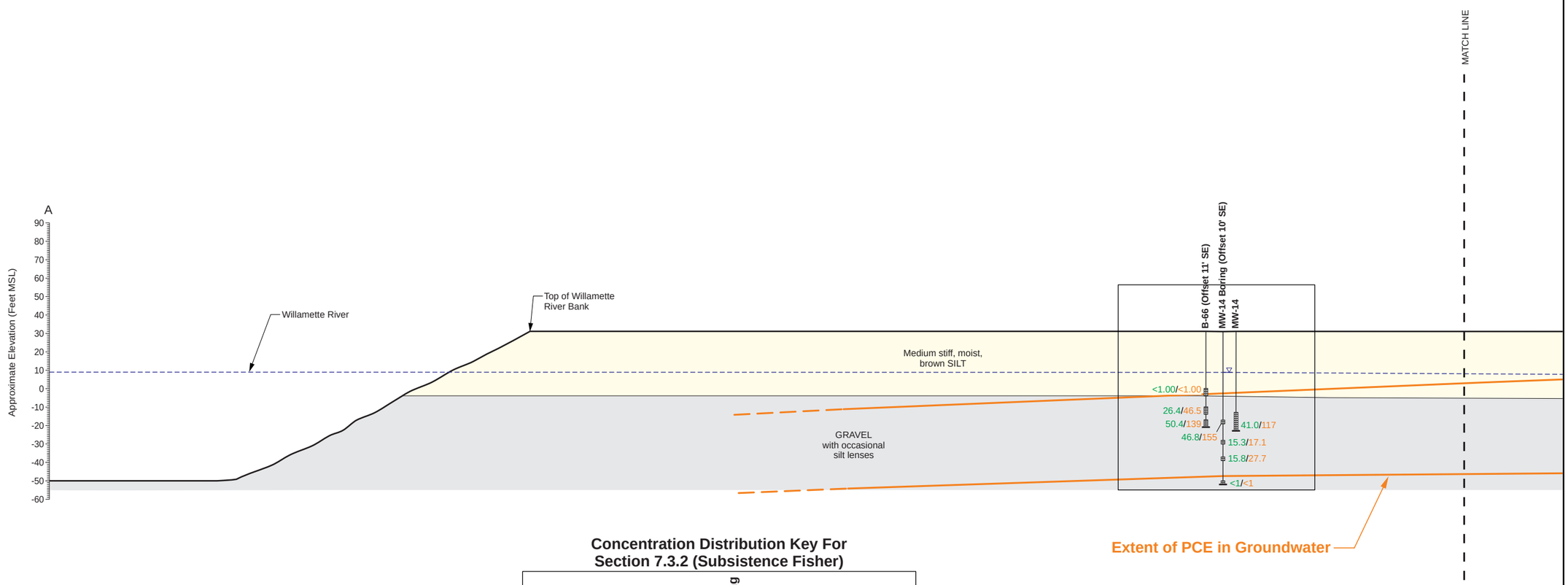
- MW-1 Groundwater Monitoring Well
- OWS Oil/Water Separator
- Stormwater Catch Basin
- Fence
- Former UST
- Former Solvent or Fuel USTs
- Solvent or Fuel ASTs
- Solvent or Fuel Handling
- Lubricating Oil ASTs
- Lubricating Oil Handling
- Maintenance Shop/Small Container Non-Flammable Product Storage
- Solvent/Lubricant Container Storage
- Waste Handling
- Drum Painting
- Former/Current Heating Oil UST/AST
- Historical Chemical Handling and/or Storage

Facility Operations and Product/Chemical Usage

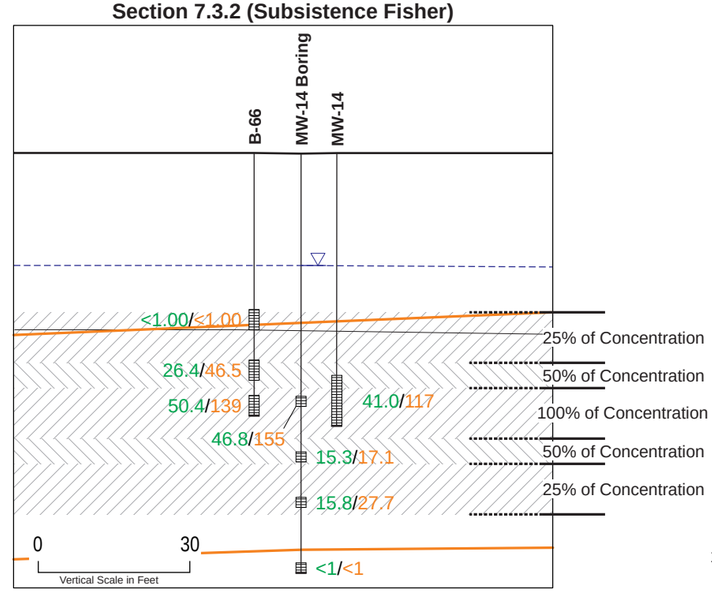
Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

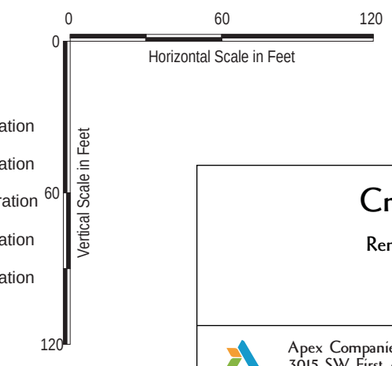
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		4



Concentration Distribution Key For Section 7.3.2 (Subsistence Fisher)





Legend:

MW-1 Monitoring Well/Probe Location

Monitoring Well/Probe Location

Typical Groundwater Level

Screen Interval

57.2/185 Trichloroethene (TCE)/Tetrachloroethene (PCE) Concentration in µg/L

Fill

Sand

Sand/Silt

Silt

Gravel

Groundwater Data Sources:
1. Depth Discrete Results from August, 2007.
2. Fourth Quarter 2010 Monitoring.
3. 2010 Reconnaissance Groundwater Sampling.

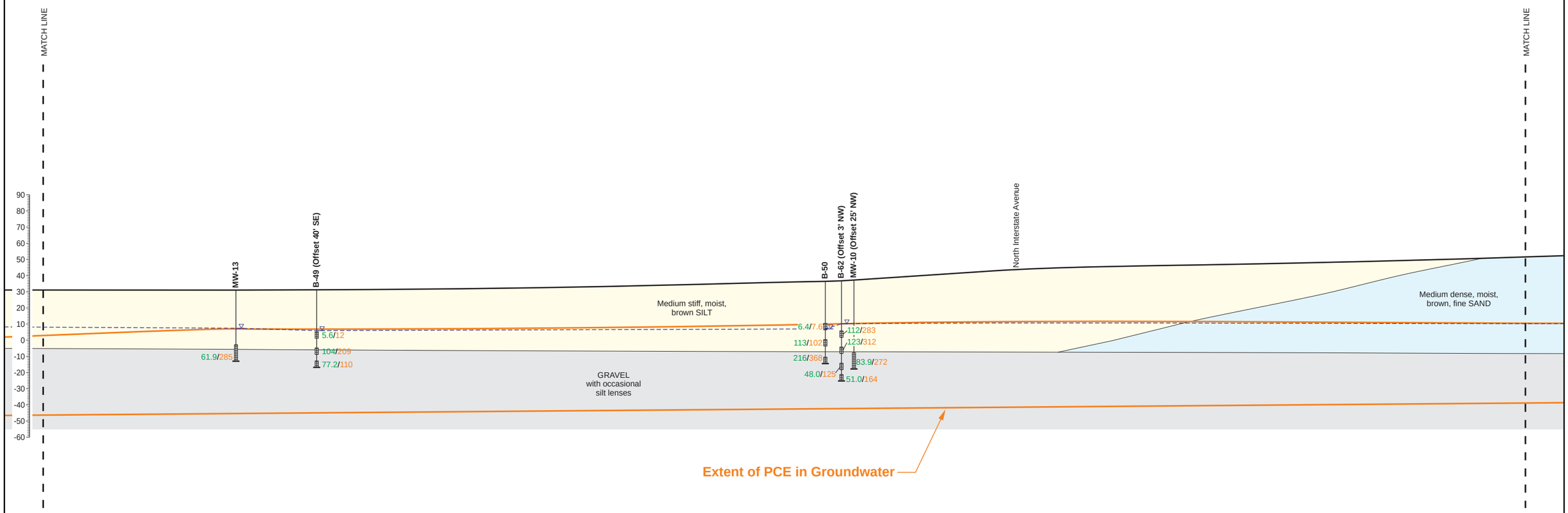
Notes:
1. Vertical Datum is City of Portland.

Cross-Section A-A'

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		5a



Legend:

MW-1 Monitoring Well/Probe Location

Monitoring Well/Probe Location

Typical Groundwater Level

Screen Interval

57.2/185 Trichloroethene (TCE)/Tetrachloroethene (PCE) Concentration in µg/L

Fill

Sand

Sand/Silt

Silt

Gravel

Groundwater Data Sources:
1. Depth Discrete Results from August, 2007.
2. Fourth Quarter 2010 Monitoring.
3. 2010 Reconnaissance Groundwater Sampling.

Notes:
1. Vertical Datum is City of Portland.

0 60 120
Horizontal Scale in Feet

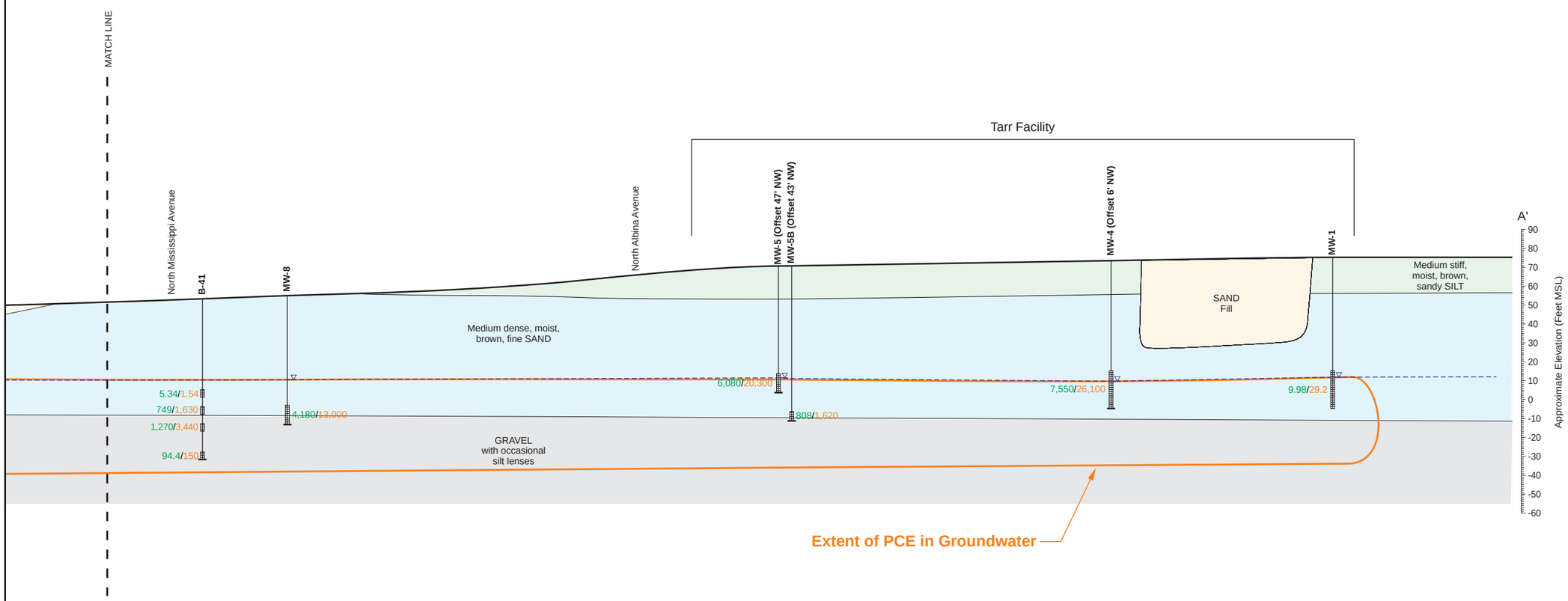
0 60 120
Vertical Scale in Feet

Cross-Section A-A' (Continued)

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		5b



Legend:

MW-1 Monitoring Well/Probe Location

Monitoring Well/Probe Location

Typical Groundwater Level

Screen Interval

57.2/185 Trichloroethene (TCE)/Tetrachloroethene (PCE) Concentration in µg/L

Fill

Sand

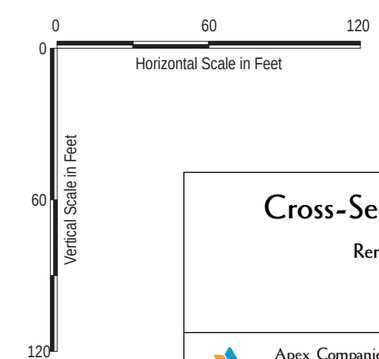
Sand/Silt

Silt

Gravel

Groundwater Data Sources:
1. Depth Discrete Results from August, 2007.
2. Fourth Quarter 2010 Monitoring.
3. 2010 Reconnaissance Groundwater Sampling.

Notes:
1. Vertical Datum is City of Portland.



Cross-Section A-A' (Continued)

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

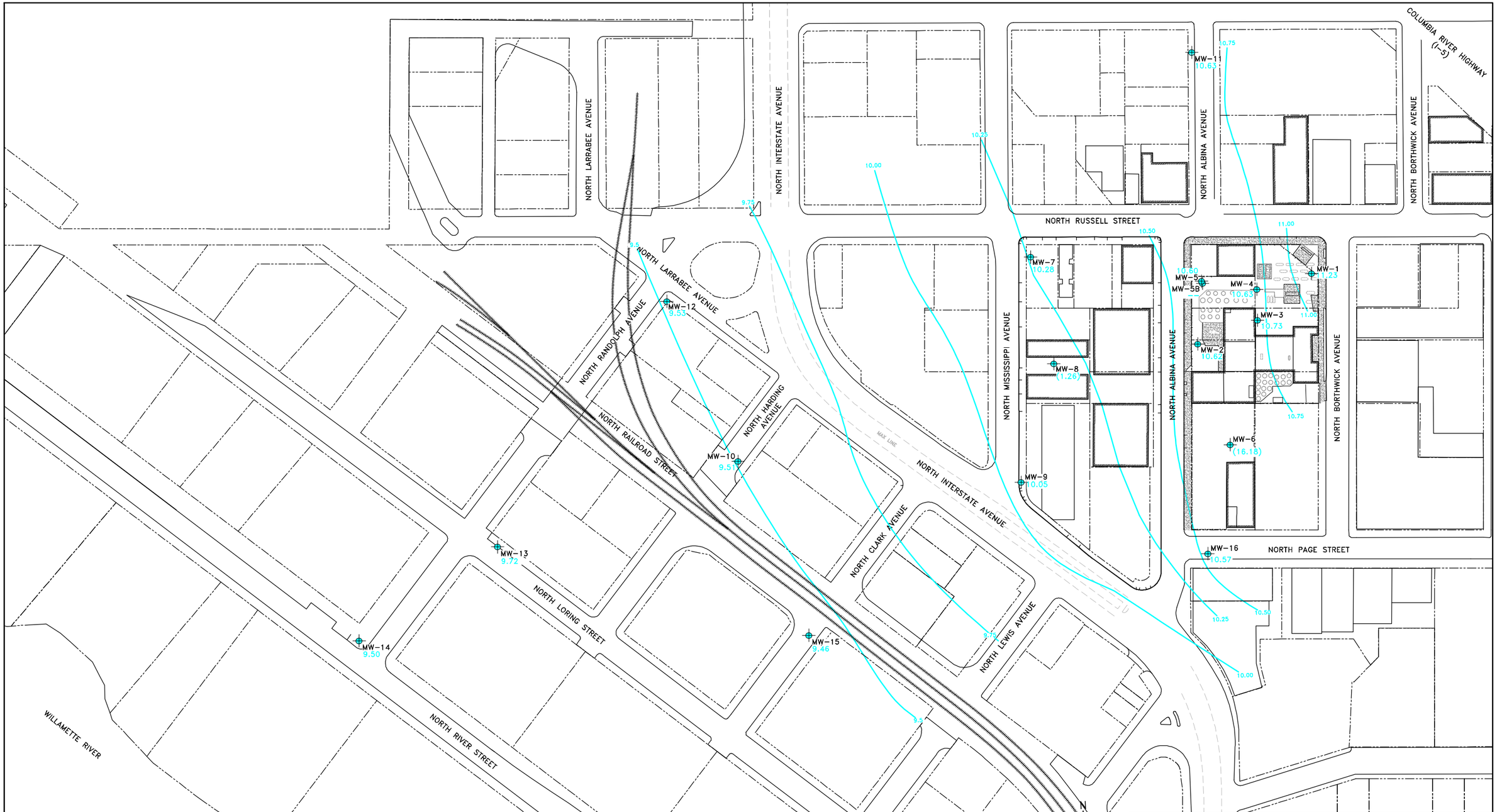
APEX

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number 1073-12

December 2013

Figure 5c



LEGEND:

MW-2	GROUNDWATER MONITORING WELL
10.62	GROUNDWATER ELEVATION IN FEET ABOVE MSL
(1.26)	(NOT USED FOR CONTOURING)
12.50	GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MSL
	CONCRETE
	PARCEL/TAX LOT LINE
	CURBLINE
	FENCELINE
	BUILDING

0 150 300
SCALE IN FEET

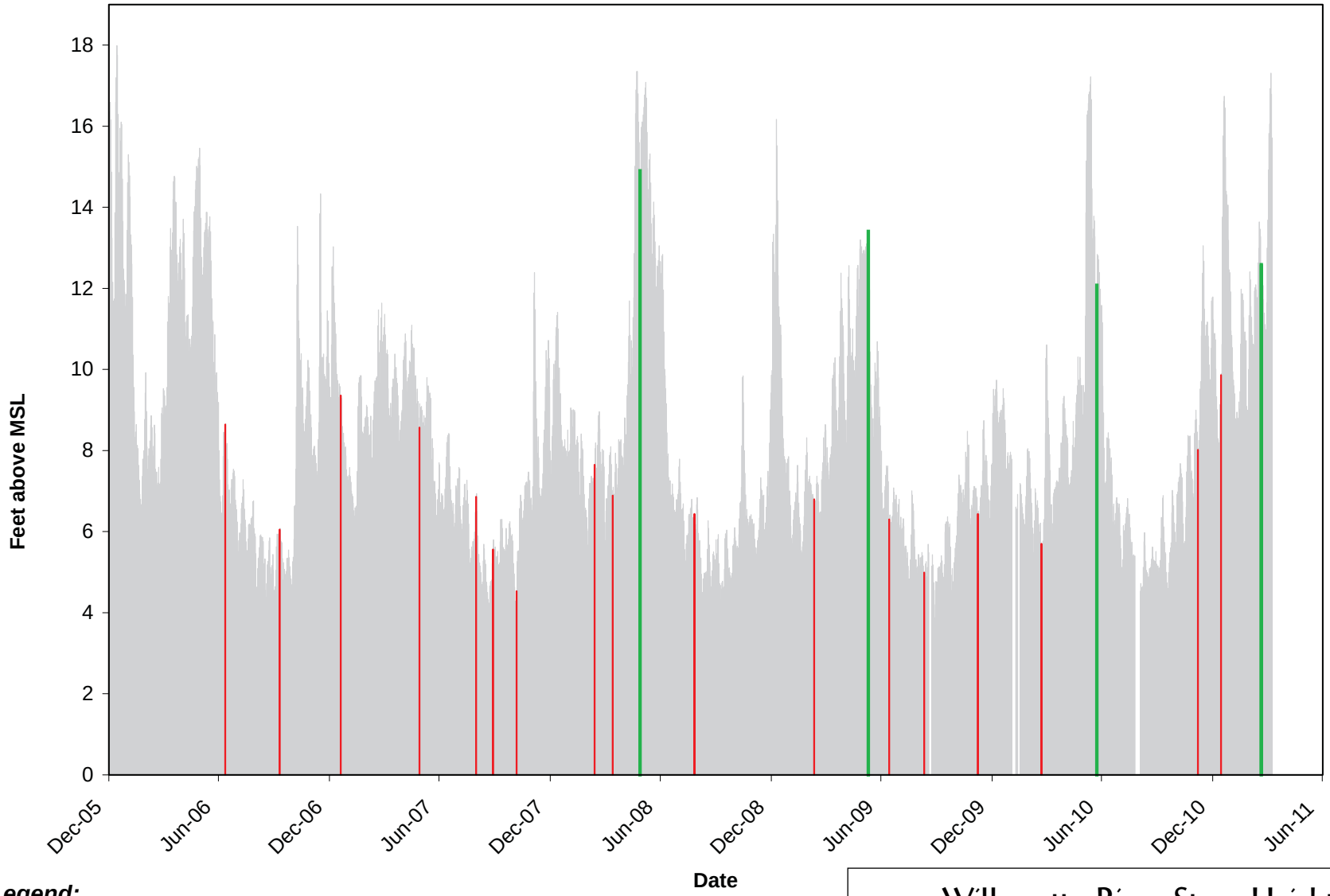
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Groundwater Elevations - December 2010

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		6



Legend:

- Willamette River Stage Height
- Willamette River Stage Height During Depth to Water Measurements
- Willamette River Stage Height During Groundwater Peak River Stage Gradient Shifts

Notes:
1. Vertical Datum is NGVD29 converted to City of Portland datum.
2. Data source is United States Geologic Survey National Water Information System station gauge USGS 14211720 Willamette River at Portland, Oregon.

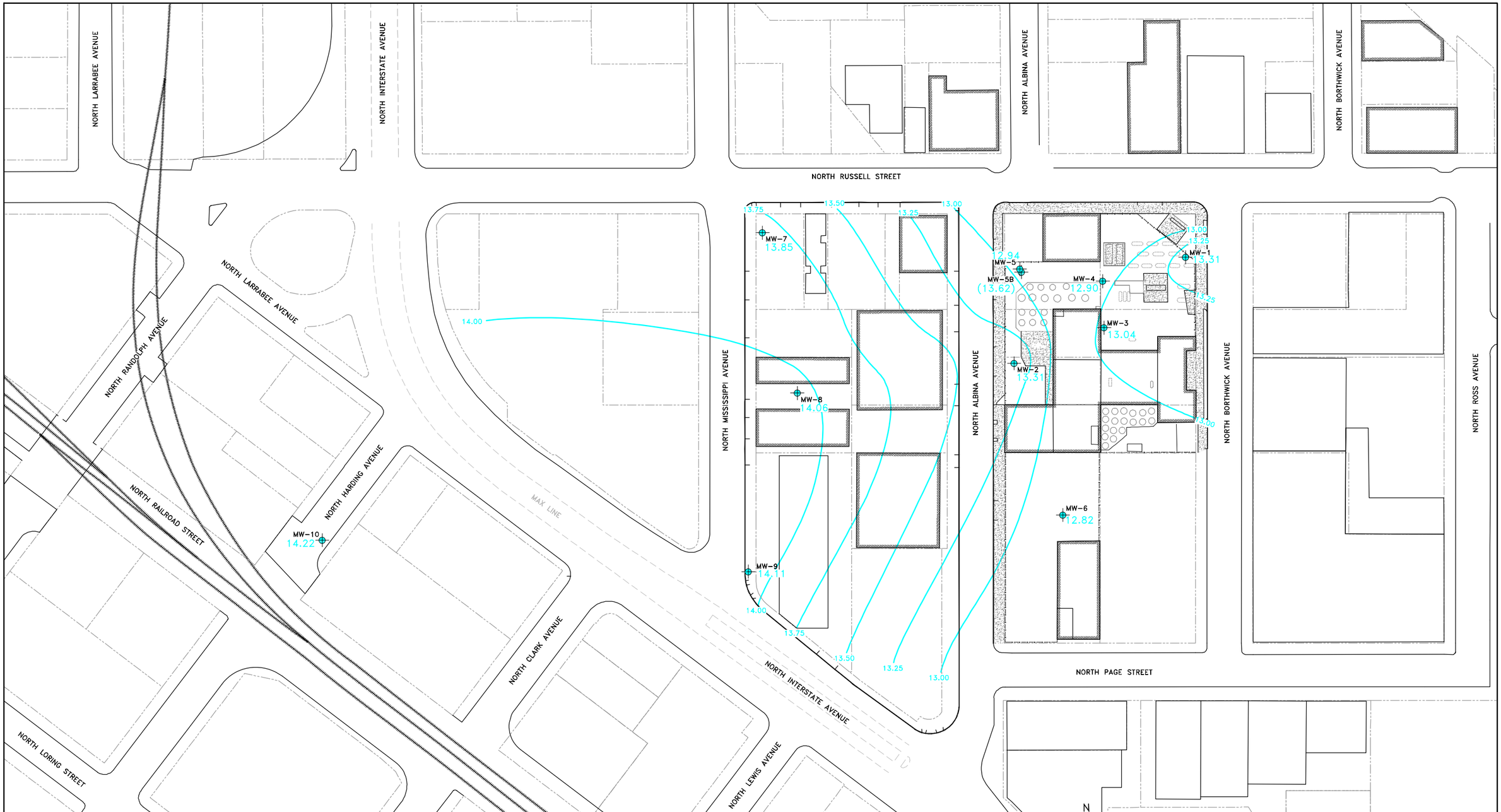
Willamette River Stage Height

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		7



LEGEND:

- MW-2 — GROUNDWATER MONITORING WELL
- 13.31 — GROUNDWATER ELEVATION IN FEET ABOVE MSL
- 14.00 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MSL
- CONCRETE
- PARCEL/TAX LOT LINE
- FENCELINE
- BUILDING

0 100 200
SCALE IN FEET

N

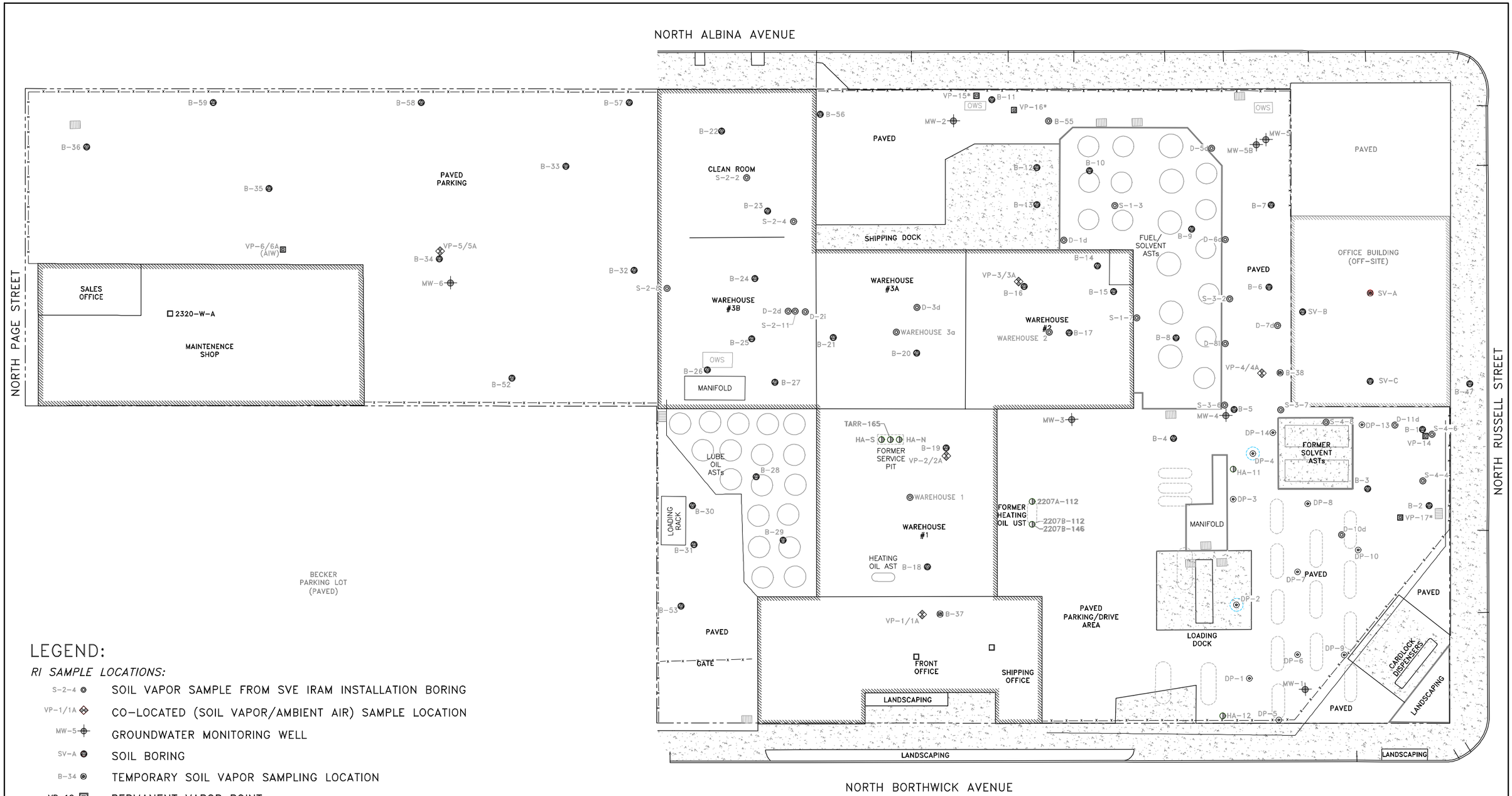
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Groundwater Elevations - May 2008

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		8



LEGEND:

RI SAMPLE LOCATIONS:

- S-2-4 — SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- MW-5 — GROUNDWATER MONITORING WELL
- SV-A — SOIL BORING
- B-34 — TEMPORARY SOIL VAPOR SAMPLING LOCATION
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE

PRE-RI SAMPLE LOCATIONS:

- HA-11 — HAND AUGER OR GRAB SOIL SAMPLE
- DP-1 — SOIL BORING (INDICATES DEPTH DISCREET GROUNDWATER SAMPLE)

- CONCRETE
- PARCEL/TAX LOT LINE
- FENCELINE
- OWS — OIL/WATER SEPARATOR
- STORMWATER CATCH BASIN
- UST (REMOVED)
- BUILDING

N

0 30 60

SCALE IN FEET

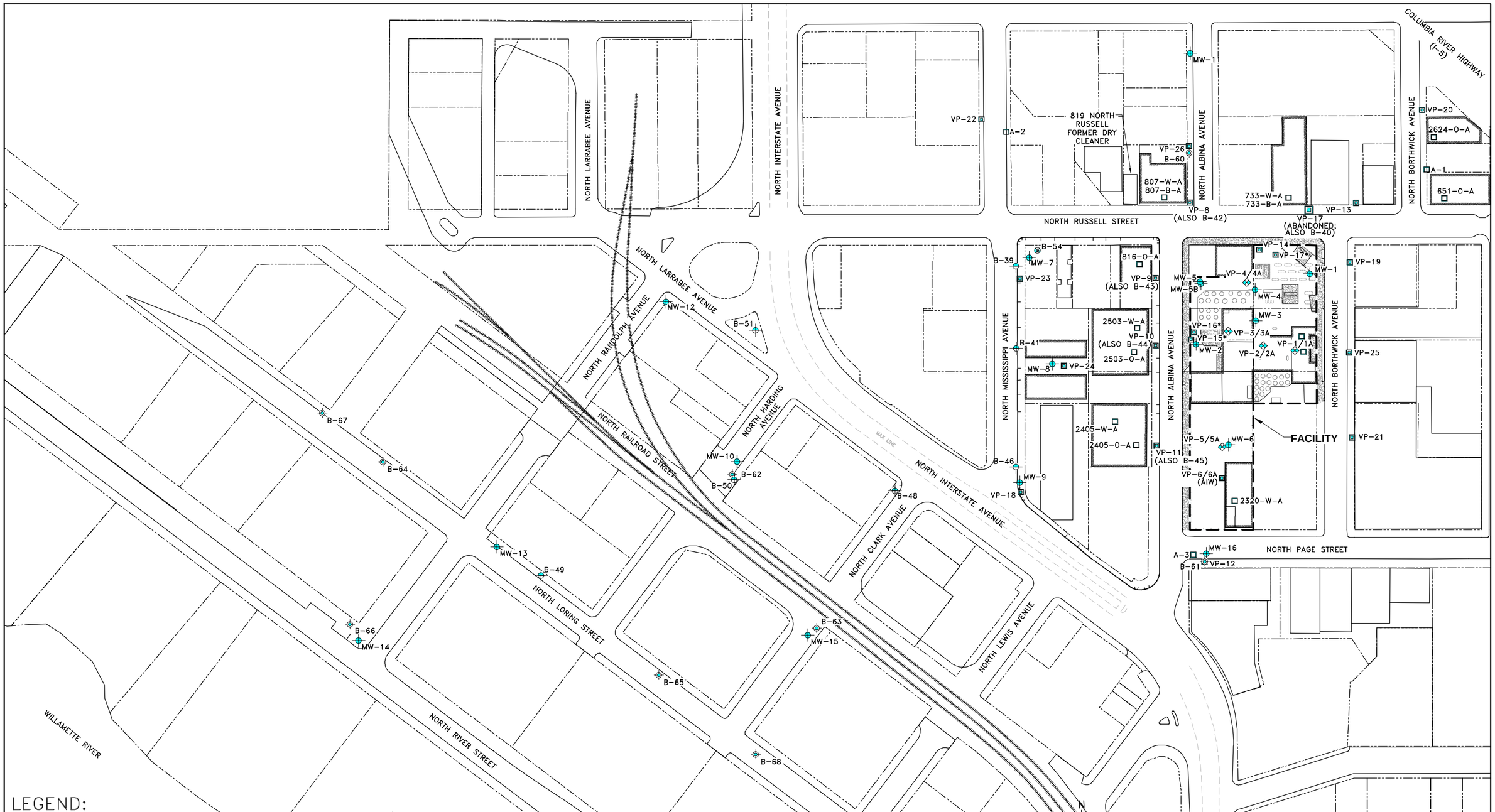
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Facility Sampling Locations

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		9



LEGEND:

- MW-2 — GROUNDWATER MONITORING WELL
- B-54 — TEMPORARY SOIL VAPOR SAMPLING LOCATION
- B-41 — PUSH PROBE LOCATION
- B-64 — DEPTH DISCRETE GROUNDWATER SAMPLE LOCATION
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- CONCRETE
- PARCEL/TAX LOT LINE
- CURBLINE
- FENCELINE
- BUILDING

0 150 300
SCALE IN FEET

NOTE: SOIL SAMPLING LOCATIONS ON FACILITY BLOCK ARE NOT SHOWN.

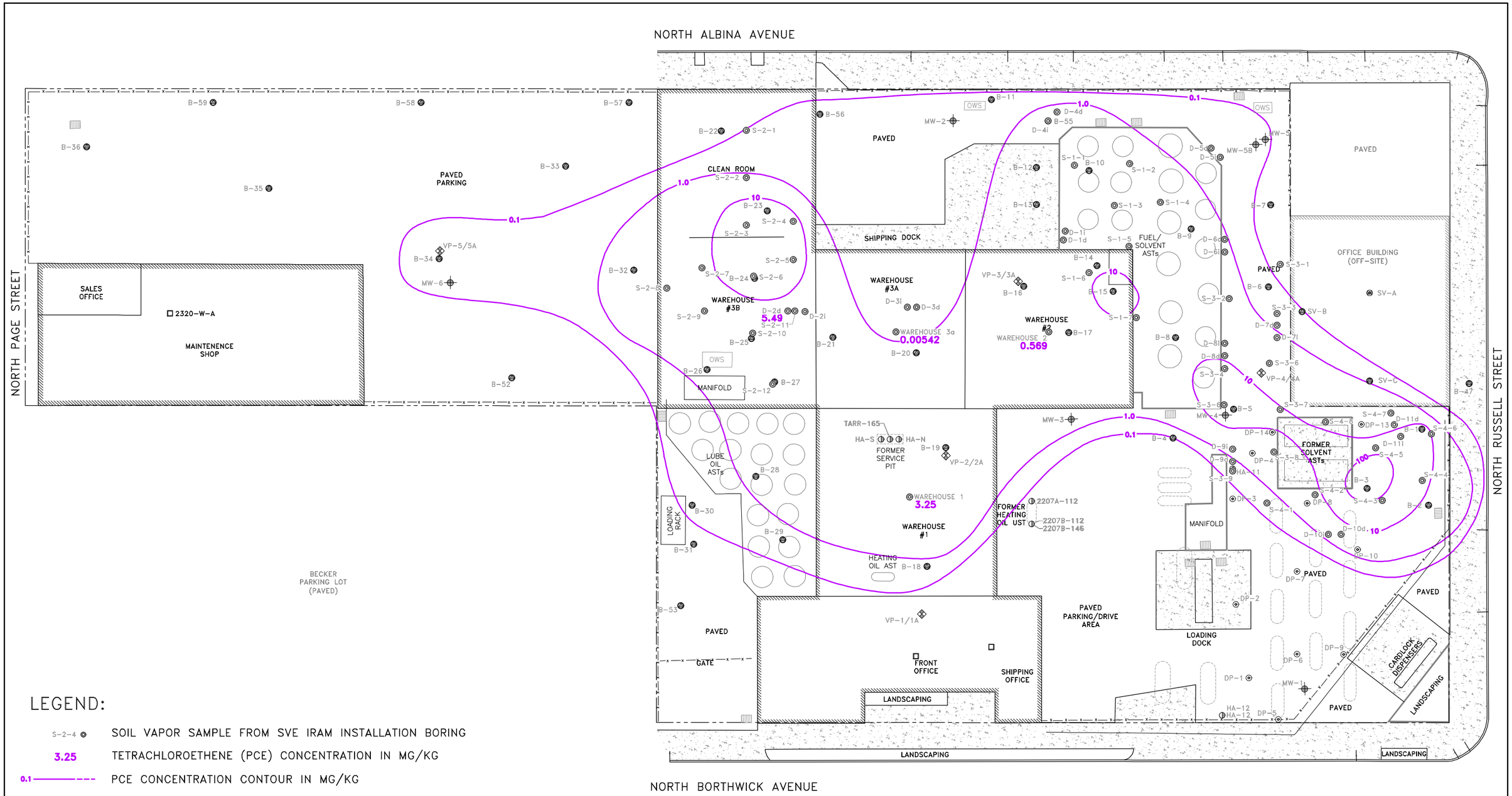
SOURCES: 1) BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006) AND A TAX LOT FILE FROM THE CITY OF PORTLAND (2010).

Site Sampling Locations

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		10



LEGEND:

S-2-4	SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
3.25	TETRACHLOROETHENE (PCE) CONCENTRATION IN MG/KG
0.1	PCE CONCENTRATION CONTOUR IN MG/KG
VP-1/1A	CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
MW-5	GROUNDWATER MONITORING WELL
SV-A	SOIL BORING
B-34	TEMPORARY SOIL VAPOR SAMPLING LOCATION
HA-11	HAND AUGER OR GRAB SOIL SAMPLE
DP-1	SOIL BORING
	BUILDING
	CONCRETE
	PARCEL/TAX LOT LINE
	FENCELINE
OWS	OIL/WATER SEPARATOR
	STORMWATER CATCH BASIN
	UST (REMOVED)

N

0 30 60

SCALE IN FEET

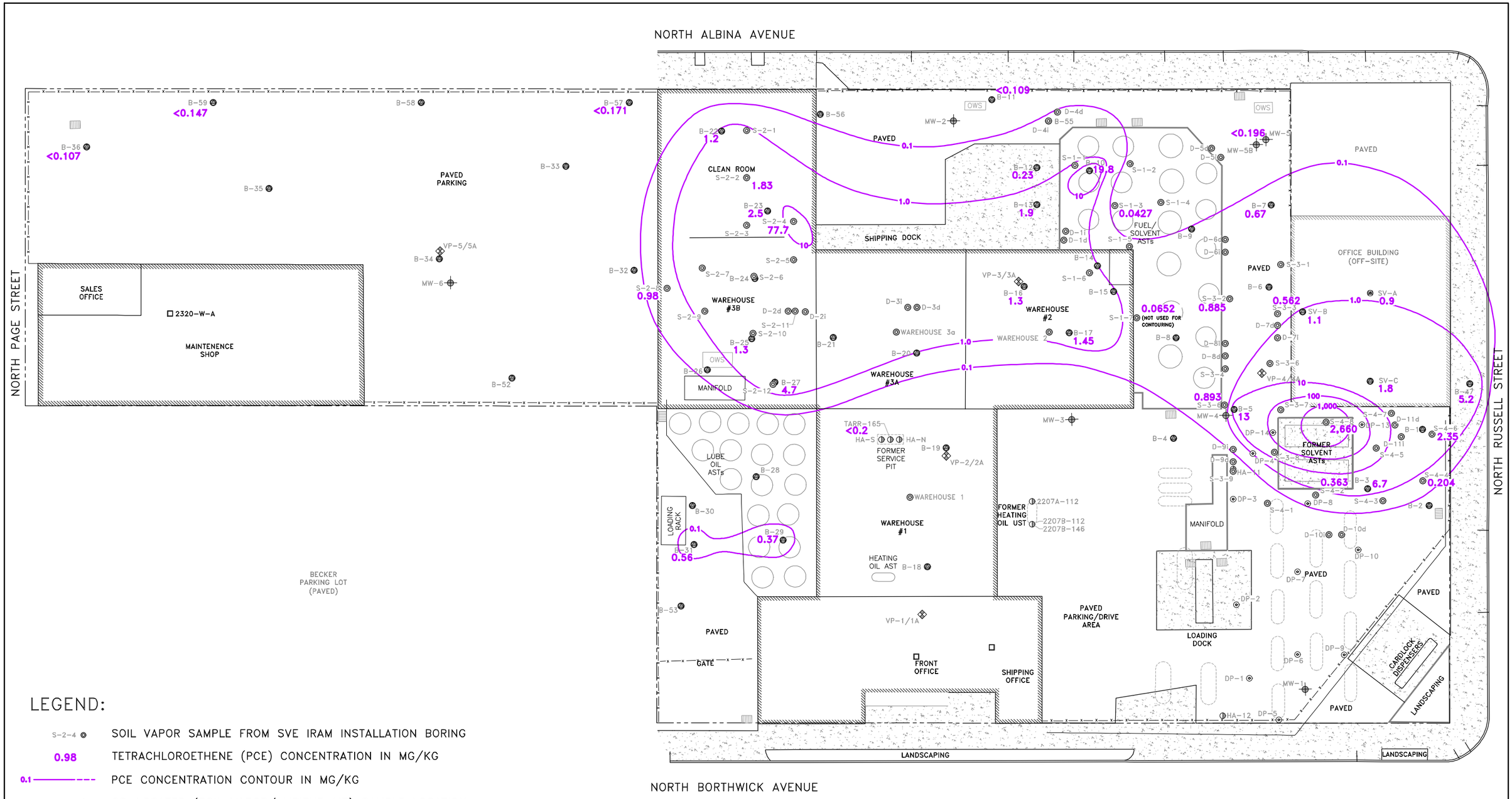
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

PCE in Soil, 0-4 Feet

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		11



LEGEND:

S-2-4	SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
0.98	TETRACHLOROETHENE (PCE) CONCENTRATION IN MG/KG
0.1	PCE CONCENTRATION CONTOUR IN MG/KG
VP-1/1A	CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
MW-5	GROUNDWATER MONITORING WELL
SV-A	SOIL BORING
B-34	TEMPORARY SOIL VAPOR SAMPLING LOCATION
HA-11	HAND AUGER OR GRAB SOIL SAMPLE
DP-1	SOIL BORING
	BUILDING
	CONCRETE
	PARCEL/TAX LOT LINE
	FENCELINE
OWS	OIL/WATER SEPARATOR
	STORMWATER CATCH BASIN
	UST (REMOVED)

0 30 60

SCALE IN FEET

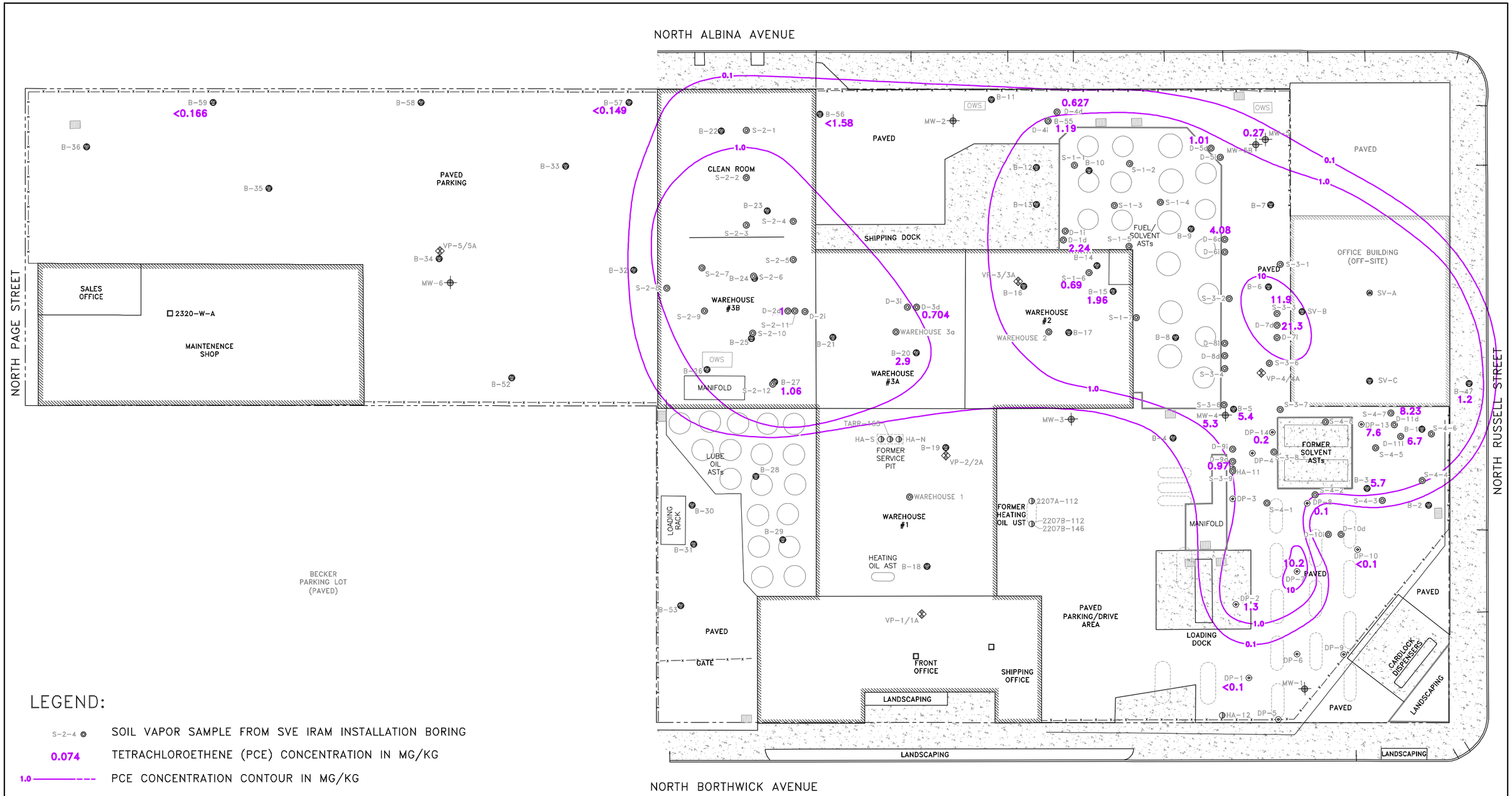
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

PCE in Soil, 4-15 Feet

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		12



LEGEND:

S-2-4	SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
0.074	TETRACHLOROETHENE (PCE) CONCENTRATION IN MG/KG
1.0	PCE CONCENTRATION CONTOUR IN MG/KG
VP-1/1A	CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
MW-5	GROUNDWATER MONITORING WELL
SV-A	SOIL BORING
B-34	TEMPORARY SOIL VAPOR SAMPLING LOCATION
HA-11	HAND AUGER OR GRAB SOIL SAMPLE
DP-1	SOIL BORING
	BUILDING
	CONCRETE
	PARCEL/TAX LOT LINE
	FENCELINE
OWS	OIL/WATER SEPARATOR
	STORMWATER CATCH BASIN
	UST (REMOVED)

N

0 30 60

SCALE IN FEET

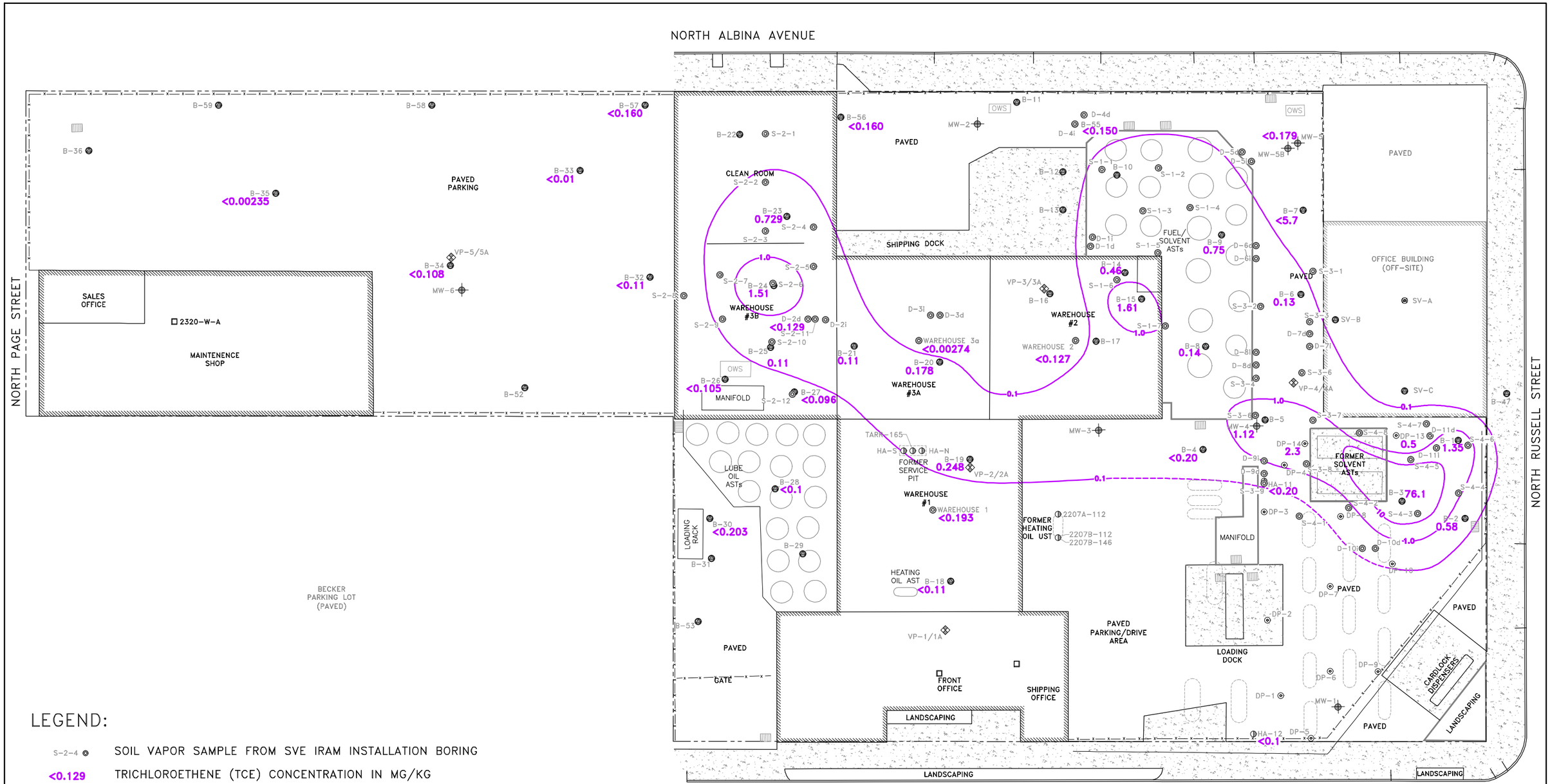
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

PCE in Soil, 15-57 Feet

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		13



LEGEND:

- S-2-4 — SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
- <0.129 — TRICHLOROETHENE (TCE) CONCENTRATION IN MG/KG
- 1.0 — TCE CONCENTRATION CONTOUR IN MG/KG
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- MW-5 — GROUNDWATER MONITORING WELL
- SV-A — SOIL BORING
- B-34 — TEMPORARY SOIL VAPOR SAMPLING LOCATION
- HA-11 — HAND AUGER OR GRAB SOIL SAMPLE
- DP-1 — SOIL BORING
- BUILDING
- CONCRETE
- PARCEL/TAX LOT LINE
- FENCELINE
- OWS — OIL/WATER SEPARATOR
- STORMWATER CATCH BASIN
- UST (REMOVED)

N

0 30 60

SCALE IN FEET

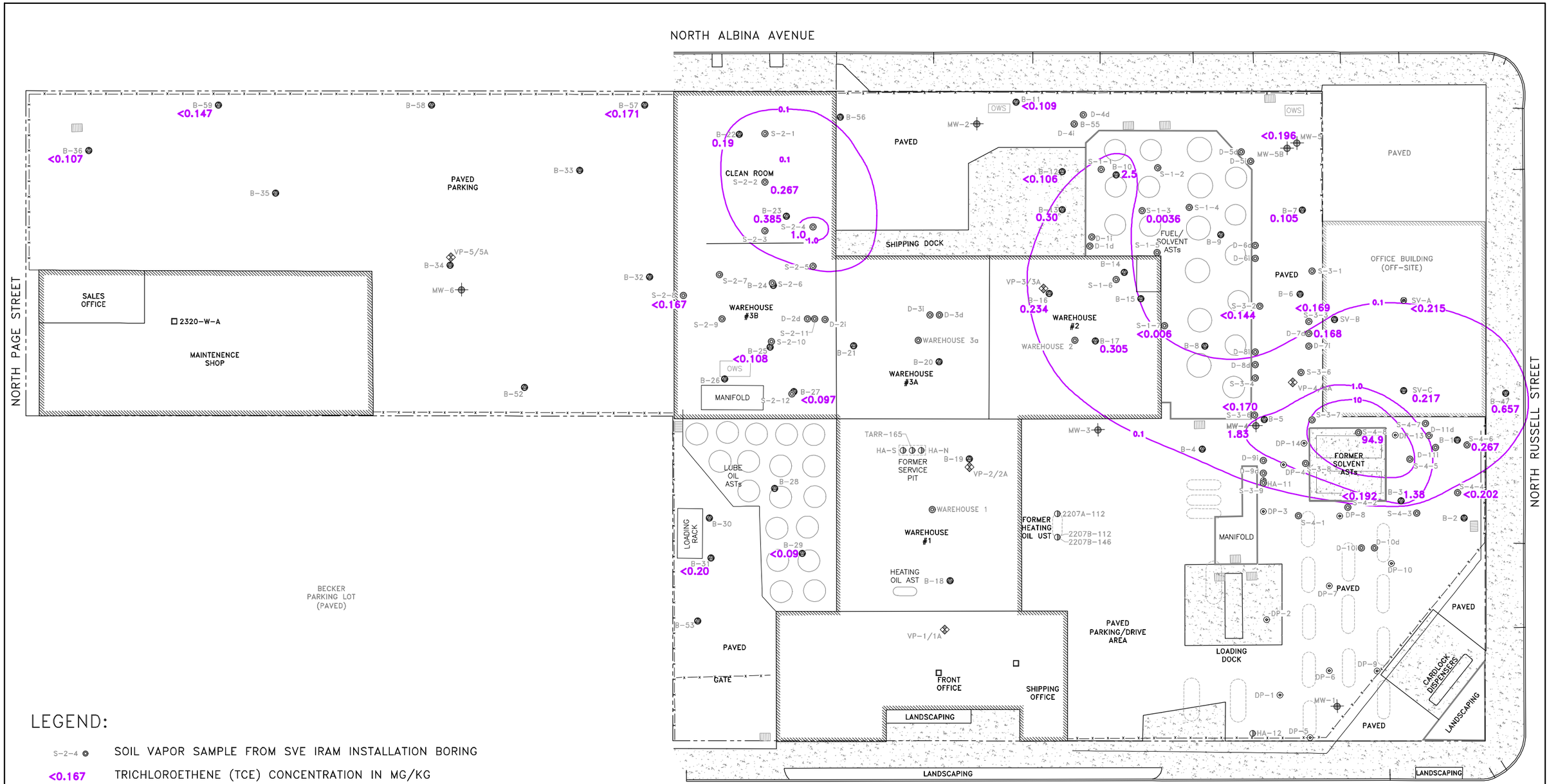
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

TCE in Soil, 0-4 Feet

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		14



LEGEND:

S-2-4	SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
<0.167	TRICHLOROETHENE (TCE) CONCENTRATION IN MG/KG
1.0	TCE CONCENTRATION CONTOUR IN MG/KG
VP-1/1A	CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
MW-5	GROUNDWATER MONITORING WELL
SV-A	SOIL BORING
B-34	TEMPORARY SOIL VAPOR SAMPLING LOCATION
HA-11	HAND AUGER OR GRAB SOIL SAMPLE
DP-1	SOIL BORING
	BUILDING
	CONCRETE
	PARCEL/TAX LOT LINE
	FENCELINE
OWS	OIL/WATER SEPARATOR
	STORMWATER CATCH BASIN
	UST (REMOVED)

N

0 30 60

SCALE IN FEET

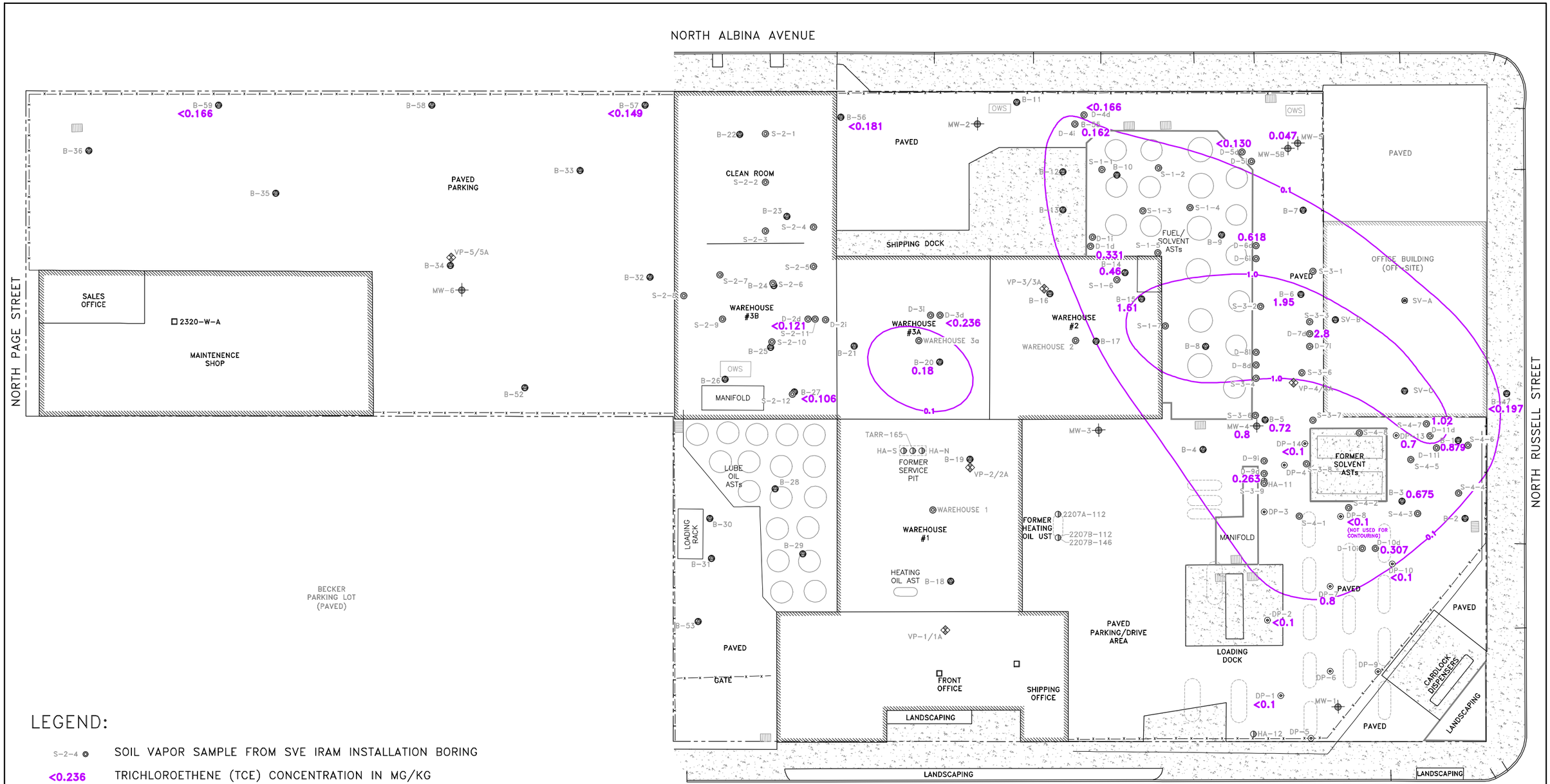
SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

TCE in Soil, 4-15 Feet

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		15



LEGEND:

S-2-4	SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
<0.236	TRICHLOROETHENE (TCE) CONCENTRATION IN MG/KG
1.0	TCE CONCENTRATION CONTOUR IN MG/KG
VP-1/1A	CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
MW-5	GROUNDWATER MONITORING WELL
SV-A	SOIL BORING
B-34	TEMPORARY SOIL VAPOR SAMPLING LOCATION
HA-11	HAND AUGER OR GRAB SOIL SAMPLE
DP-1	SOIL BORING
	BUILDING
	CONCRETE
	PARCEL/TAX LOT LINE
	FENCELINE
OWS	OIL/WATER SEPARATOR
	STORMWATER CATCH BASIN
	UST (REMOVED)

N

0 30 60

SCALE IN FEET

SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

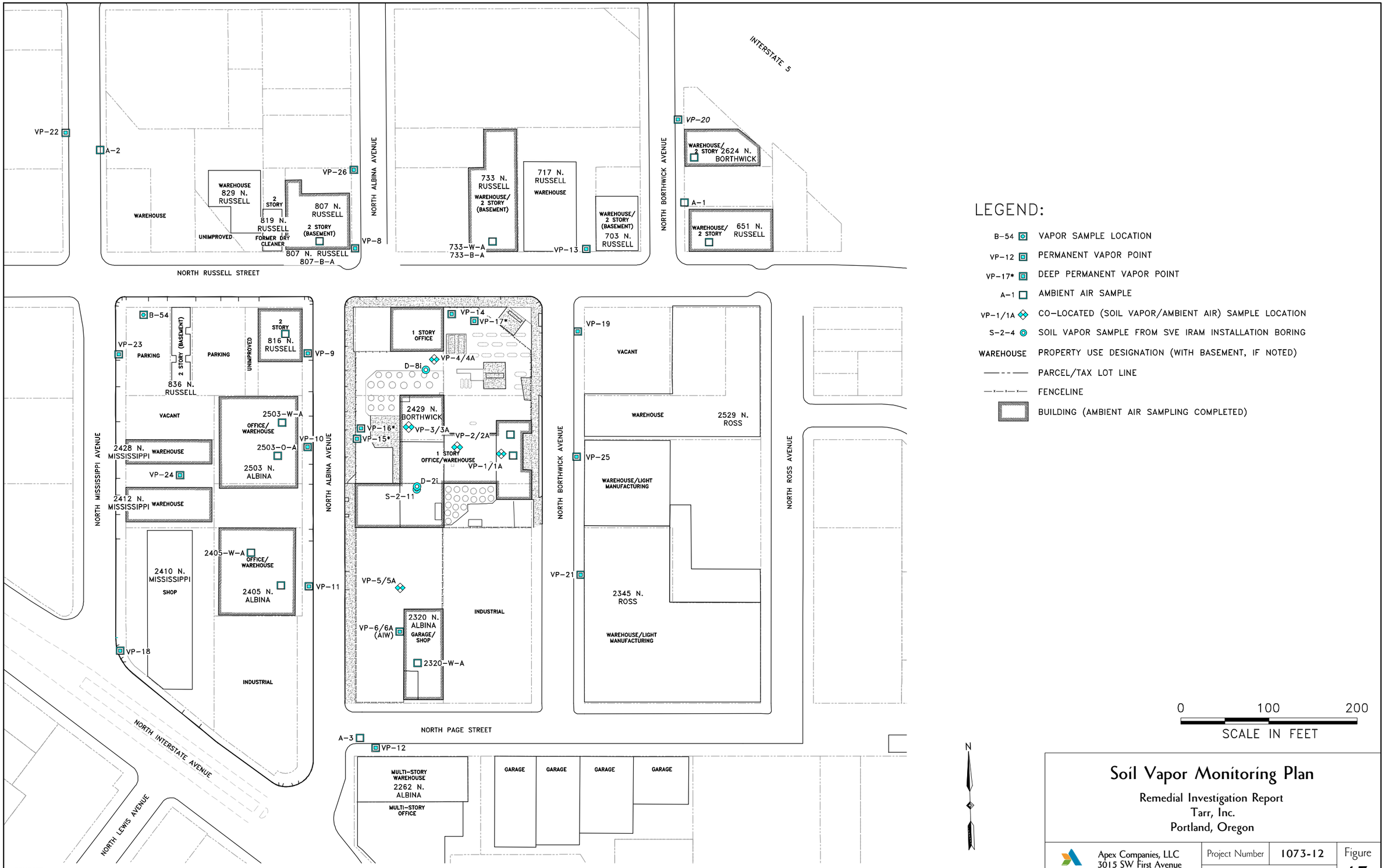
TCE in Soil, 15-57 Feet

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		16



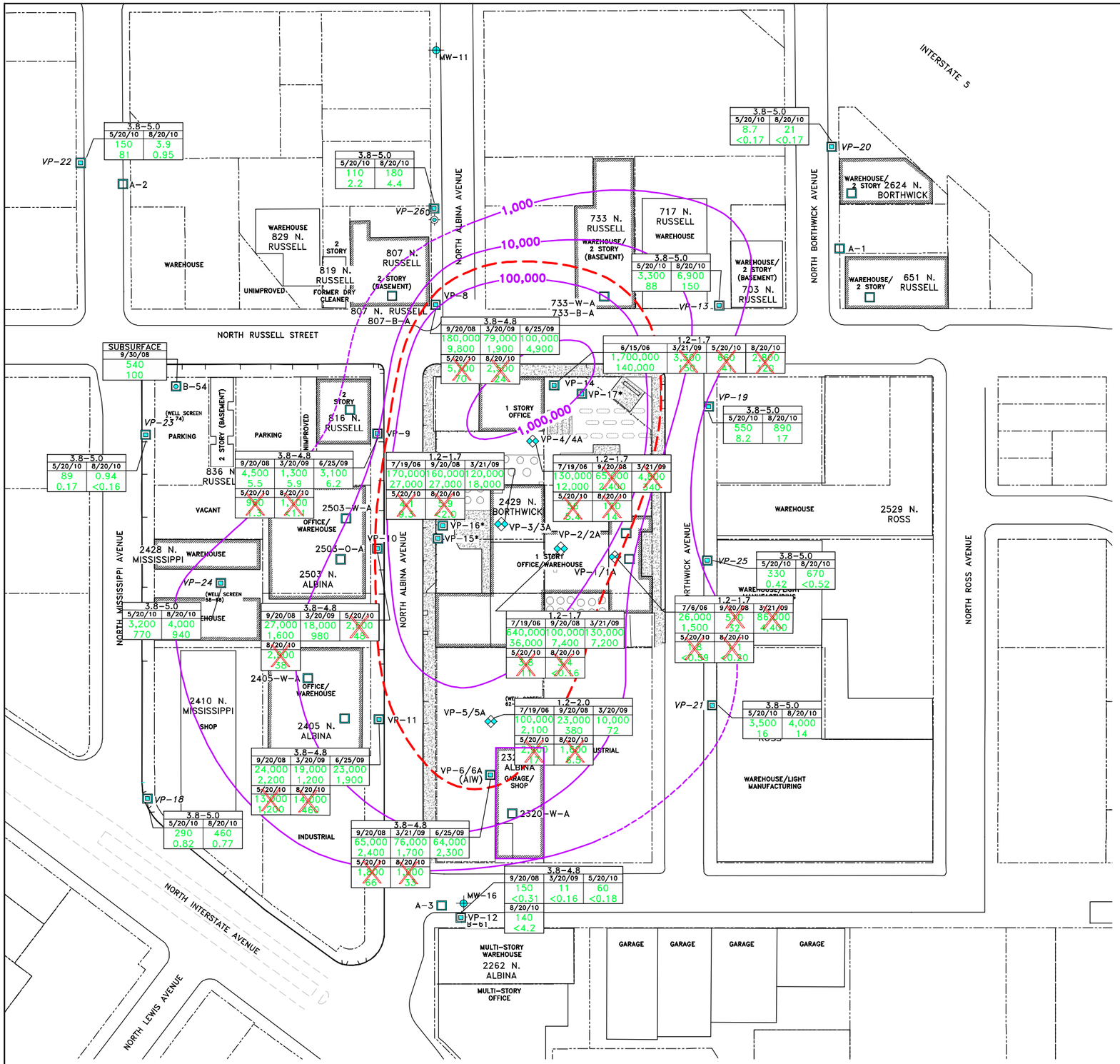
SOURCES:
1. BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Soil Vapor Monitoring Plan

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		17



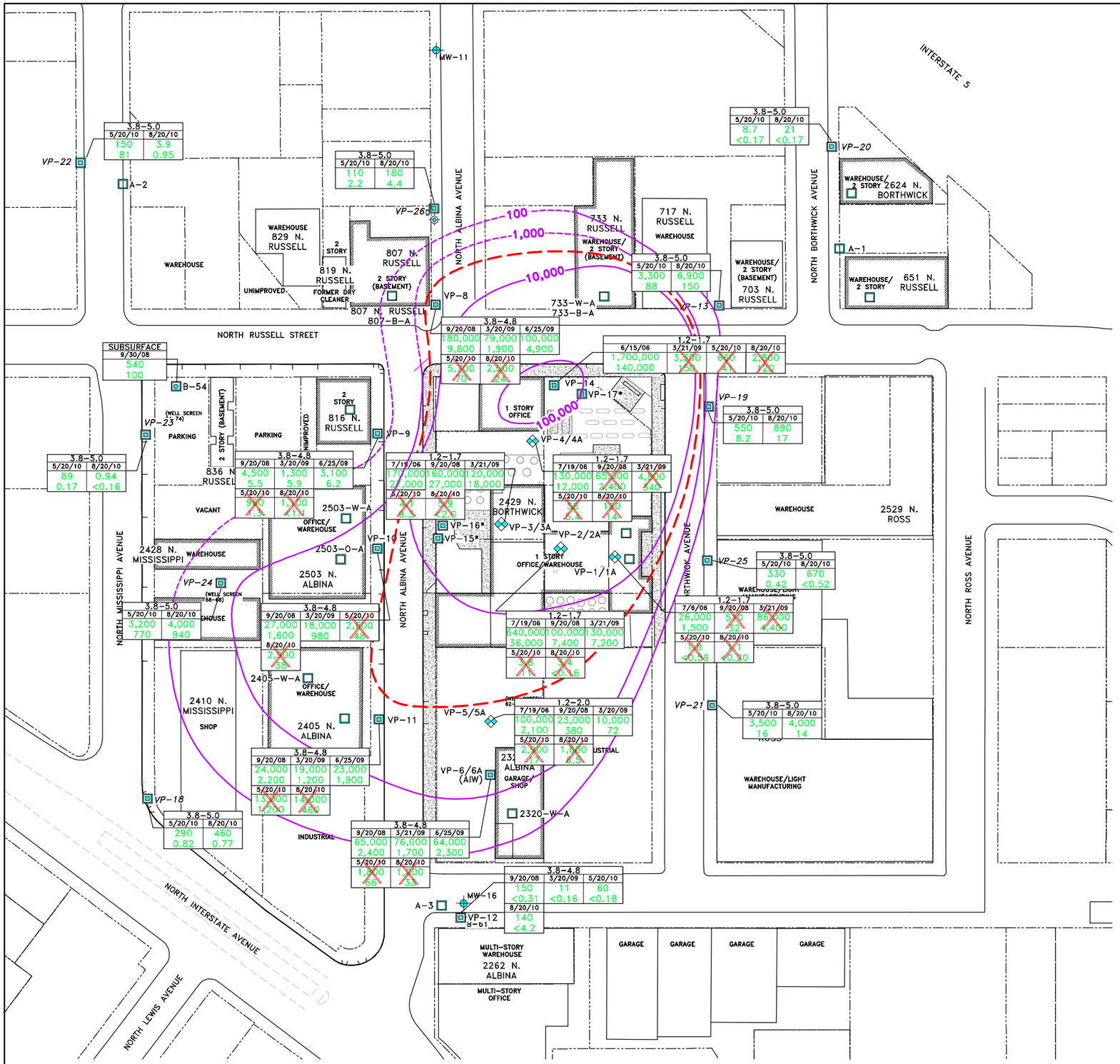
SOURCES:
1. BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Shallow Soil Vapor Concentrations: PCE

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		18



LEGEND:

- B-54 — VAPOR SAMPLE LOCATION
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- WAREHOUSE — PROPERTY USE DESIGNATION (WITH BASEMENT, IF NOTED)
- PARCEL/TAX LOT LINE
- FENCELINE
- BUILDING (AMBIENT AIR SAMPLING COMPLETED)

SUBSURFACE SAMPLE

SUBSURFACE		
9/20/08	3/20/09	6/25/09
24,000	19,000	23,000
2,200	1,200	1,900

- DATE SAMPLED
- TETRACHLOROETHENE (PCE) CONCENTRATION IN $\mu g/M^3$
- TRICHLOROETHENE (TCE) CONCENTRATION IN $\mu g/M^3$

COMPOUND	OCCUPATIONAL SOIL GAS RBC VAPOR INTRUSION
TCE	2,900 $\mu g/M^3$

100 — BASELINE (PRE-SVE IRAM) TRICHLOROETHENE CONCENTRATION CONTOUR IN $\mu g/M^3$

8/20/10 | 1 | <0.20 — POST SVE IRAM CONCENTRATION NOT INCLUDED IN BASELINE CONTOURS

NOTE:
CONTOURS GENERATED USING MEAN OF PRE-IRAM DATA (BOTH VCP AND SVE IRAM SYSTEMS) FOR DATA POINTS WITHIN RADIUS OF INFLUENCE OF EACH SYSTEM. MEAN OF ALL DATA USED FOR DATA POINTS OUTSIDE THE SYSTEM'S RADIUS OF INFLUENCE.

0 100 200
SCALE IN FEET

N

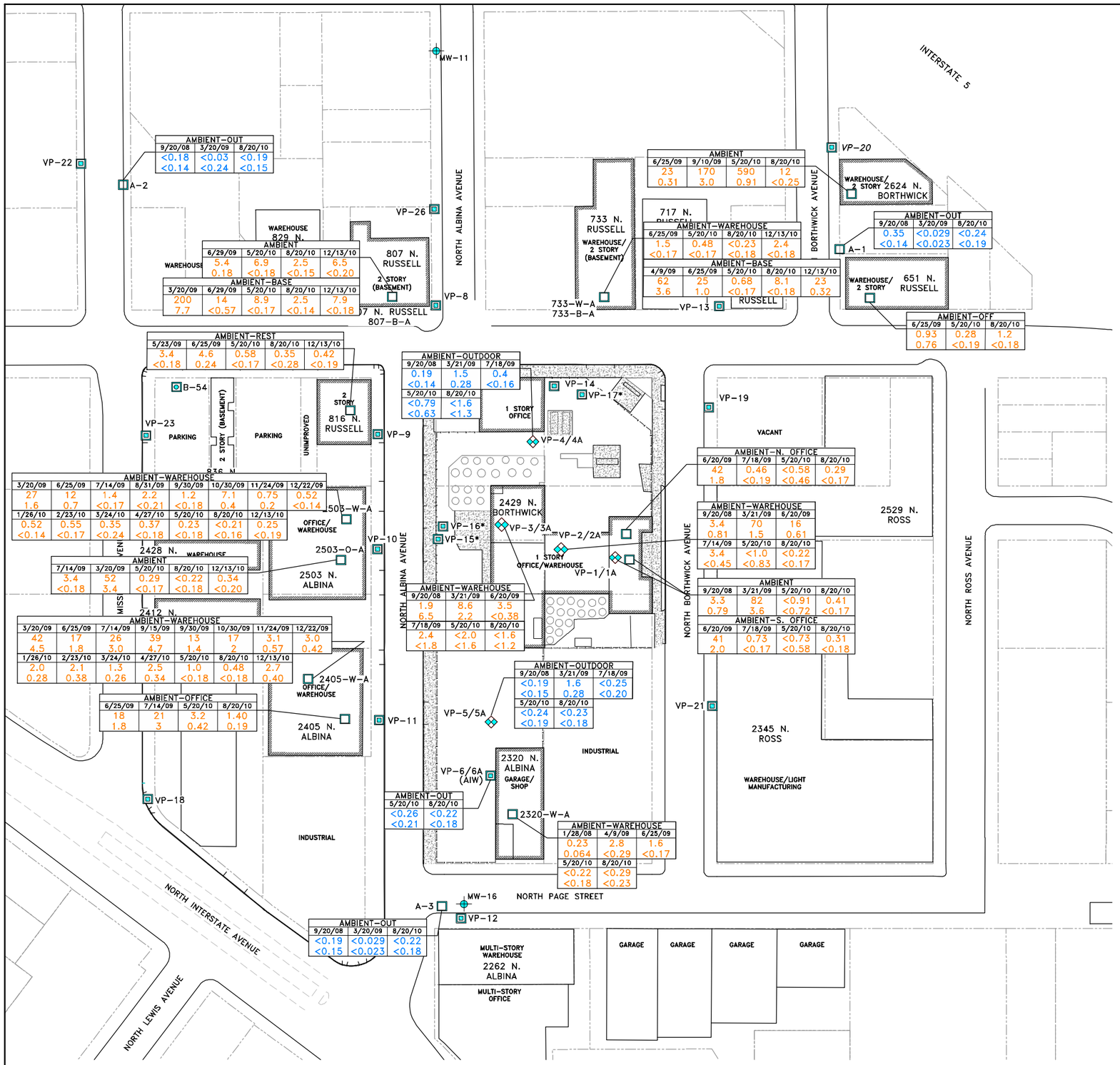
SOURCES:
1. BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Shallow Soil Vapor Concentrations: TCE

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		19



AMBIENT-OUT		
9/20/08	3/20/09	8/20/10
<0.18	<0.03	<0.19
<0.14	<0.24	<0.15

AMBIENT			
6/29/09	5/20/10	8/20/10	12/13/10
5.4	6.9	2.5	6.5
0.18	<0.18	<0.15	<0.20

AMBIENT-BASE			
3/20/09	6/29/09	5/20/10	8/20/10	12/13/10
200	14	8.9	2.5	7.9
7.7	<0.57	<0.17	<0.14	<0.18

AMBIENT-REST				
5/23/09	6/25/09	5/20/10	8/20/10	12/13/10
3.4	4.6	0.58	0.35	0.42
<0.18	0.24	<0.17	<0.28	<0.19

AMBIENT-WAREHOUSE							
3/20/09	6/25/09	7/14/09	8/31/09	9/30/09	10/30/09	11/24/09	12/22/09
27	12	1.4	2.2	1.2	7.1	0.75	0.52
1.6	0.7	<0.17	<0.21	<0.18	0.4	0.2	<0.14
1/26/10	2/23/10	3/24/10	4/27/10	5/20/10	8/20/10	12/13/10	
0.52	0.55	0.35	0.37	0.23	<0.21	0.25	
<0.14	<0.17	<0.24	<0.18	<0.18	<0.16	<0.19	

AMBIENT				
7/14/09	3/20/09	5/20/10	8/20/10	12/13/10
3.4	52	0.29	<0.22	0.34
<0.18	3.4	<0.17	<0.18	<0.20

AMBIENT-WAREHOUSE							
3/20/09	6/25/09	7/14/09	9/15/09	9/30/09	10/30/09	11/24/09	12/22/09
42	17	26	39	13	17	3.1	3.0
4.5	1.8	3.0	4.7	1.4	2	0.57	0.42
1/26/10	2/23/10	3/24/10	4/27/10	5/20/10	8/20/10	12/13/10	
2.0	2.1	1.3	2.5	1.0	0.48	2.7	
0.28	0.38	0.26	0.34	<0.18	<0.18	0.40	

AMBIENT-OFFICE			
6/25/09	7/14/09	5/20/10	8/20/10
18	21	3.2	1.40
1.8	3	0.42	0.19

AMBIENT-OUTDOOR		
9/20/08	3/21/09	7/18/09
0.19	1.5	0.4
<0.14	0.28	<0.16
5/20/10	8/20/10	
<0.79	<1.6	
<0.63	<1.3	

AMBIENT-WAREHOUSE		
9/20/08	3/21/09	6/20/09
1.9	8.6	3.5
6.5	2.2	<0.38
7/18/09	5/20/10	8/20/10
2.4	<2.0	<1.6
<1.8	<1.6	<1.2

AMBIENT-OUTDOOR		
9/20/08	3/21/09	7/18/09
<0.19	1.6	<0.25
<0.15	0.28	<0.20
5/20/10	8/20/10	
<0.24	<0.23	
<0.19	<0.18	

AMBIENT-OUT	
5/20/10	8/20/10
<0.26	<0.22
<0.21	<0.18

AMBIENT-WAREHOUSE		
1/28/08	4/9/09	6/25/09
0.23	2.8	1.6
0.064	<0.29	<0.17
5/20/10	8/20/10	
<0.22	<0.29	
<0.18	<0.23	

AMBIENT-OUT		
9/20/08	3/20/09	8/20/10
<0.19	<0.029	<0.22
<0.15	<0.023	<0.18

AMBIENT			
6/25/09	9/10/09	5/20/10	8/20/10
23	170	590	12
0.31	3.0	0.91	<0.25

AMBIENT-WAREHOUSE			
6/25/09	5/20/10	8/20/10	12/13/10
1.5	0.48	<0.23	2.4
<0.17	<0.17	<0.18	<0.18

AMBIENT-BASE				
4/9/09	6/25/09	5/20/10	8/20/10	12/13/10
62	25	0.68	8.1	23
3.6	1.0	<0.17	<0.18	0.32

AMBIENT-OUT		
9/20/08	3/20/09	8/20/10
0.35	<0.029	<0.24
<0.14	<0.023	<0.19

AMBIENT-OFF		
6/25/09	5/20/10	8/20/10
0.93	0.28	1.2
0.76	<0.19	<0.18

AMBIENT-N. OFFICE			
6/20/09	7/18/09	5/20/10	8/20/10
42	0.46	<0.58	0.29
1.8	<0.19	<0.46	<0.17

AMBIENT-WAREHOUSE		
9/20/08	3/21/09	6/20/09
3.4	70	16
0.81	1.5	0.61
7/14/09	5/20/10	8/20/10
3.4	<1.0	<0.22
<0.45	<0.83	<0.17

AMBIENT			
9/20/08	3/21/09	5/20/10	8/20/10
3.3	82	<0.91	0.41
0.79	3.6	<0.72	<0.17

AMBIENT-S. OFFICE			
6/20/09	7/18/09	5/20/10	8/20/10
41	0.73	<0.73	0.31
2.0	<0.17	<0.58	<0.18

LEGEND:

- B-54 — VAPOR SAMPLE LOCATION
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- WAREHOUSE — PROPERTY USE DESIGNATION (WITH BASEMENT, IF NOTED)
- PARCEL/TAX LOT LINE
- FENCELINE
- BUILDING (AMBIENT AIR SAMPLING COMPLETED)

SAMPLE TYPE AND LOCATION

AMBIENT-OFF		
6/25/09	5/20/10	8/20/10
0.93	0.28	1.2
0.76	<0.19	<0.18

DATE SAMPLED

TETRACHLOROETHENE (PCE) CONCENTRATION IN $\mu g/M^3$

TRICHLOROETHENE (TCE) CONCENTRATION IN $\mu g/M^3$

SAMPLE TYPE AND LOCATION

AMBIENT-OUT		
9/20/08	3/20/09	8/20/10
<0.19	<0.029	<0.22
<0.15	<0.023	<0.18

DATE SAMPLED

TETRACHLOROETHENE (PCE) CONCENTRATION IN $\mu g/M^3$

TRICHLOROETHENE (TCE) CONCENTRATION IN $\mu g/M^3$

WHSE = WAREHOUSE
BASE = BASEMENT
REST = RESTROOM
OUT = OUTDOOR

COMPOUND	OCCUPATIONAL SOIL GAS RBC VAPOR INTRUSION
PCE	47 $\mu g/M^3$
TCE	3.0 $\mu g/M^3$

0 100 200
SCALE IN FEET

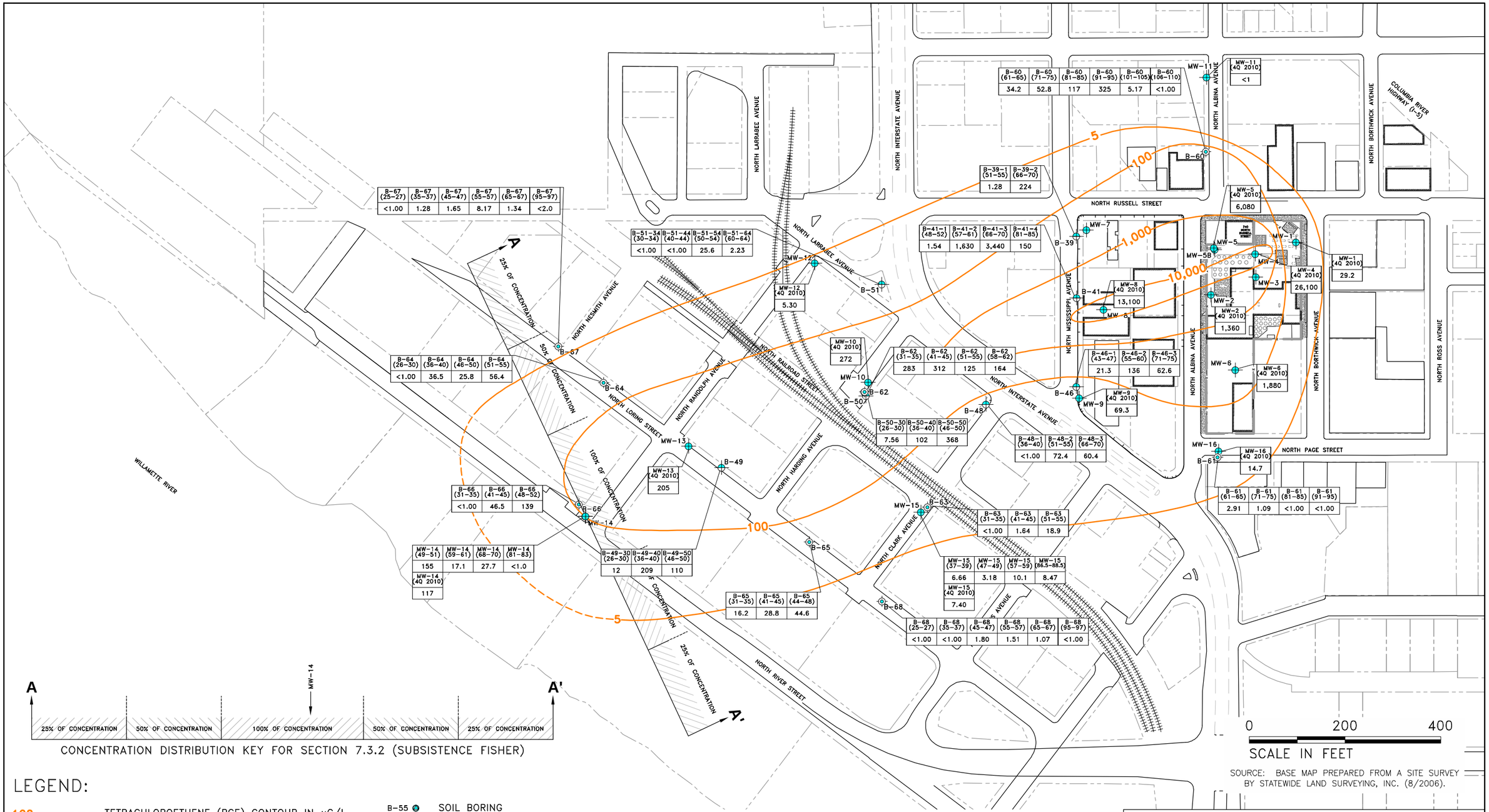
SOURCES:
1. BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Ambient Air Concentrations

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		20



SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

CONCENTRATION DISTRIBUTION KEY FOR SECTION 7.3.2 (SUBSISTENCE FISHER)

LEGEND:

100 — TETRACHLOROETHENE (PCE) CONTOUR IN µG/L

B-51-54 (50-54) | PCE 25.6 | TCE 34.6

- SAMPLE IDENTIFICATION (SAMPLE INTERVAL DEPTH OR GROUNDWATER MONITORING EVENT; DEPTH NOTED FOR DISCRETE SAMPLES ONLY)
- VOLATILE ORGANIC COMPOUND CONCENTRATION IN µG/L
- ANALYTE IDENTIFICATION

PCE = TETRACHLOROETHENE
TCE = TRICHLOROETHENE

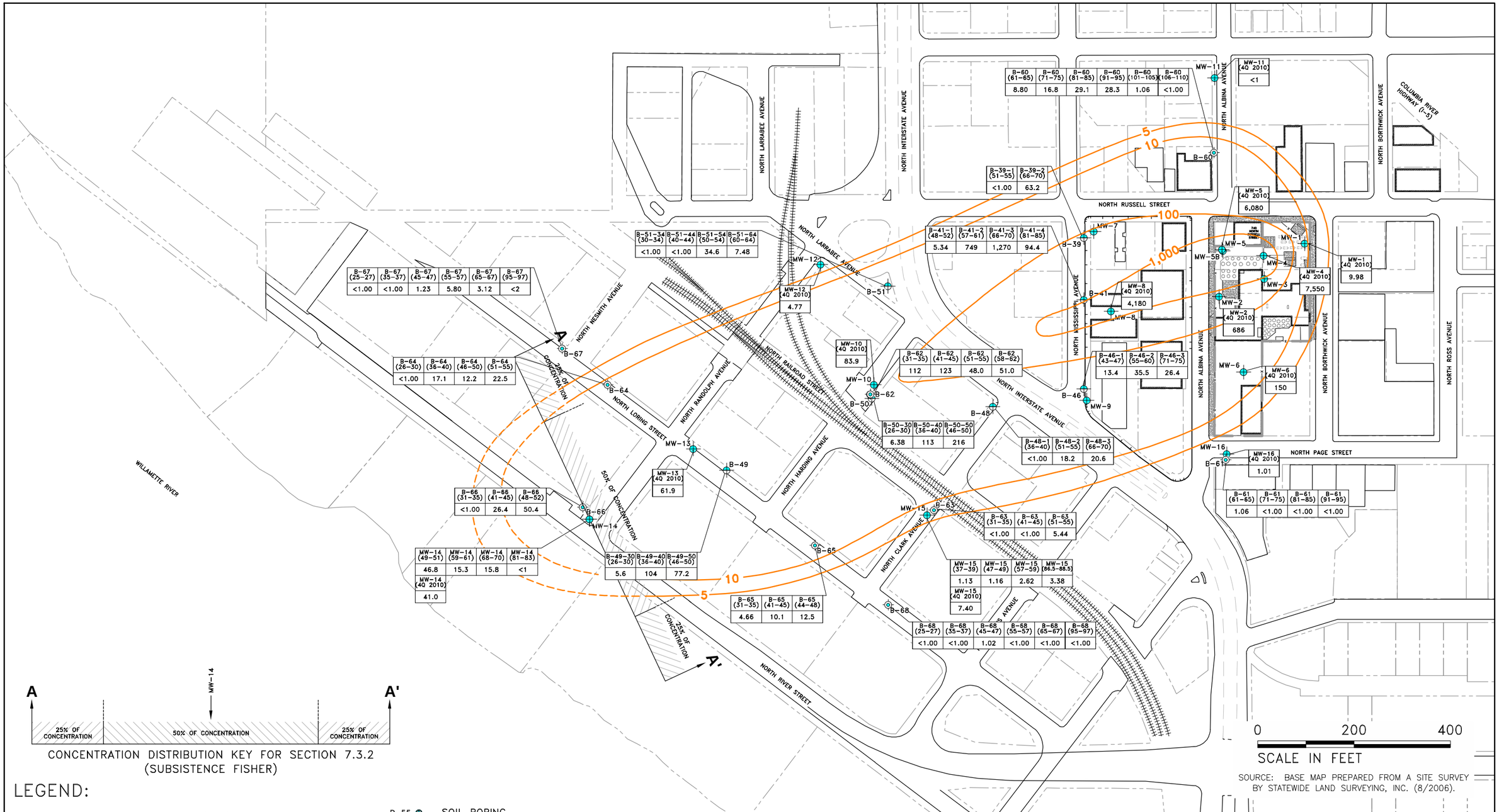
B-55 — SOIL BORING
B-64 — DEPTH DISCRETE GROUNDWATER SAMPLE LOCATION
MW-2 — GROUNDWATER MONITORING WELL
B-49 — PUSH PROBE LOCATION
BUILDING (AMBIENT AIR SAMPLING COMPLETED)
CONCRETE
PARCEL/TAX LOT LINE

PCE Concentrations in Groundwater

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		21



SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

CONCENTRATION DISTRIBUTION KEY FOR SECTION 7.3.2 (SUBSISTENCE FISHER)

LEGEND:

- 10 — TRICHLOROETHENE (TCE) CONTOUR IN µG/L
- B-51-54 (50-54) | PCE 25.6 | TCE 34.6 — SAMPLE IDENTIFICATION (SAMPLE INTERVAL DEPTH OR GROUNDWATER MONITORING EVENT; DEPTH NOTED FOR DISCRETE SAMPLES ONLY); VOLATILE ORGANIC COMPOUND CONCENTRATION IN µG/L; ANALYTE IDENTIFICATION
  - PCE = TETRACHLOROETHENE
  - TCE = TRICHLOROETHENE
- B-55 — SOIL BORING
- B-64 — DEPTH DISCRETE GROUNDWATER SAMPLE LOCATION
- MW-2 — GROUNDWATER MONITORING WELL
- B-49 — PUSH PROBE LOCATION
- BUILDING (AMBIENT AIR SAMPLING COMPLETED)
- CONCRETE
- PARCEL/TAX LOT LINE

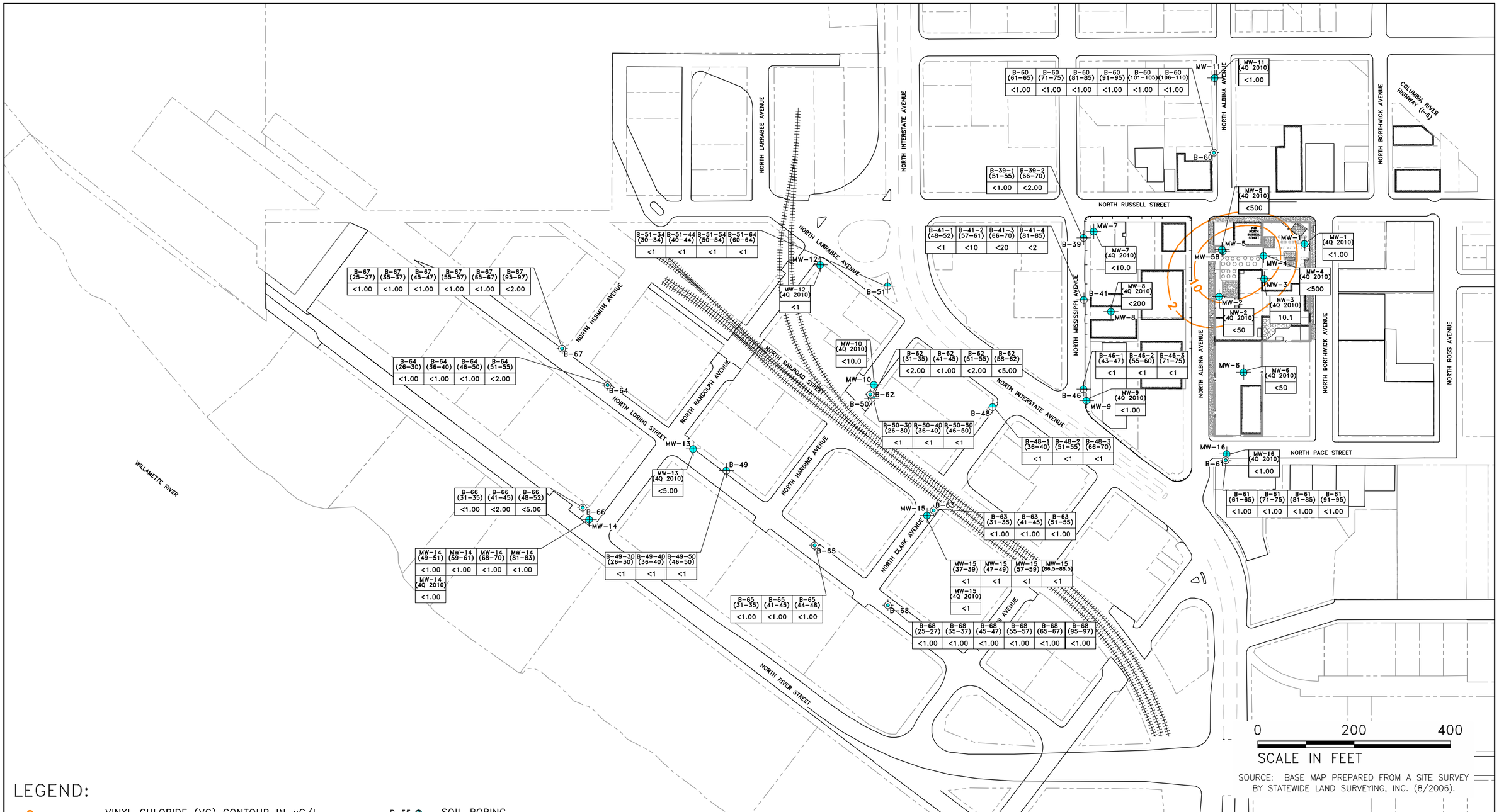
N

TCE Concentrations in Groundwater

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX — Apex Companies, LLC, 3015 SW First Avenue, Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		22



SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

LEGEND:

2 — VINYL CHLORIDE (VC) CONTOUR IN µG/L

B-51-54 (50-54) | PCE 25.6 | TCE 34.6

- SAMPLE IDENTIFICATION (SAMPLE INTERVAL DEPTH OR GROUNDWATER MONITORING EVENT; DEPTH NOTED FOR DISCRETE SAMPLES ONLY)
- VOLATILE ORGANIC COMPOUND CONCENTRATION IN µG/L
- ANALYTE IDENTIFICATION

PCE = TETRACHLOROETHENE
TCE = TRICHLOROETHENE

B-55 — SOIL BORING

B-64 — DEPTH DISCRETE GROUNDWATER SAMPLE LOCATION

MW-2 — GROUNDWATER MONITORING WELL

B-49 — PUSH PROBE LOCATION

BUILDING (AMBIENT AIR SAMPLING COMPLETED)

CONCRETE

PARCEL/TAX LOT LINE

N

Vinyl Chloride Concentrations in Groundwater

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

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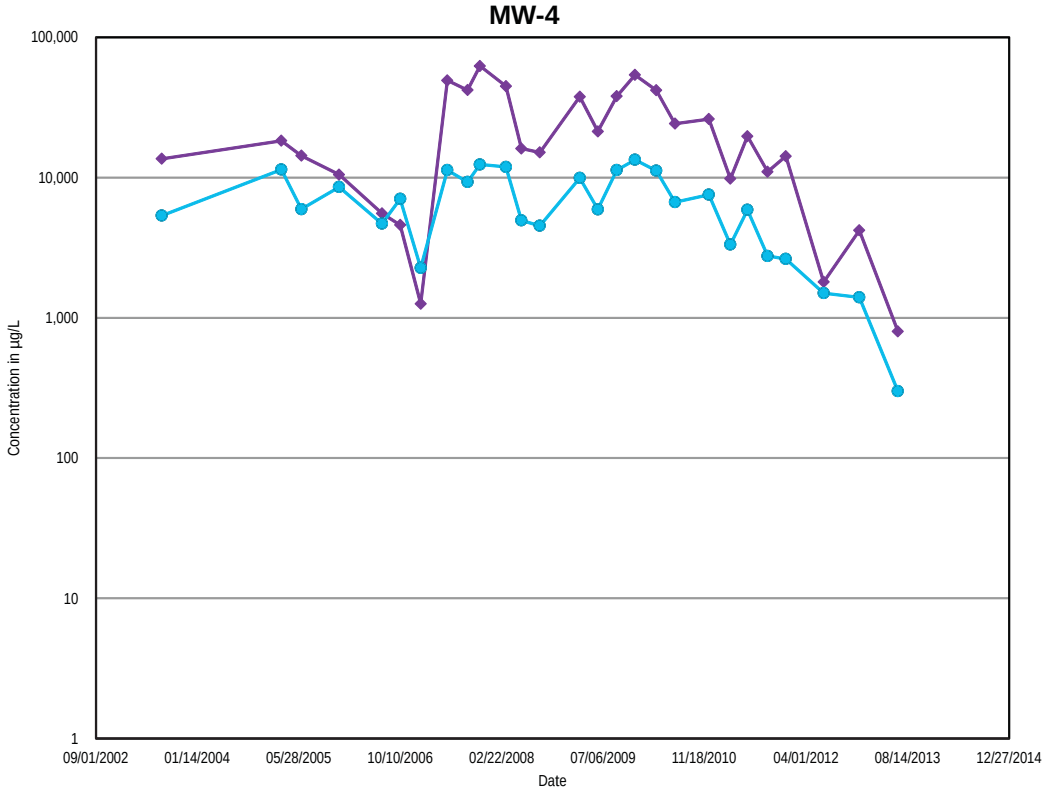
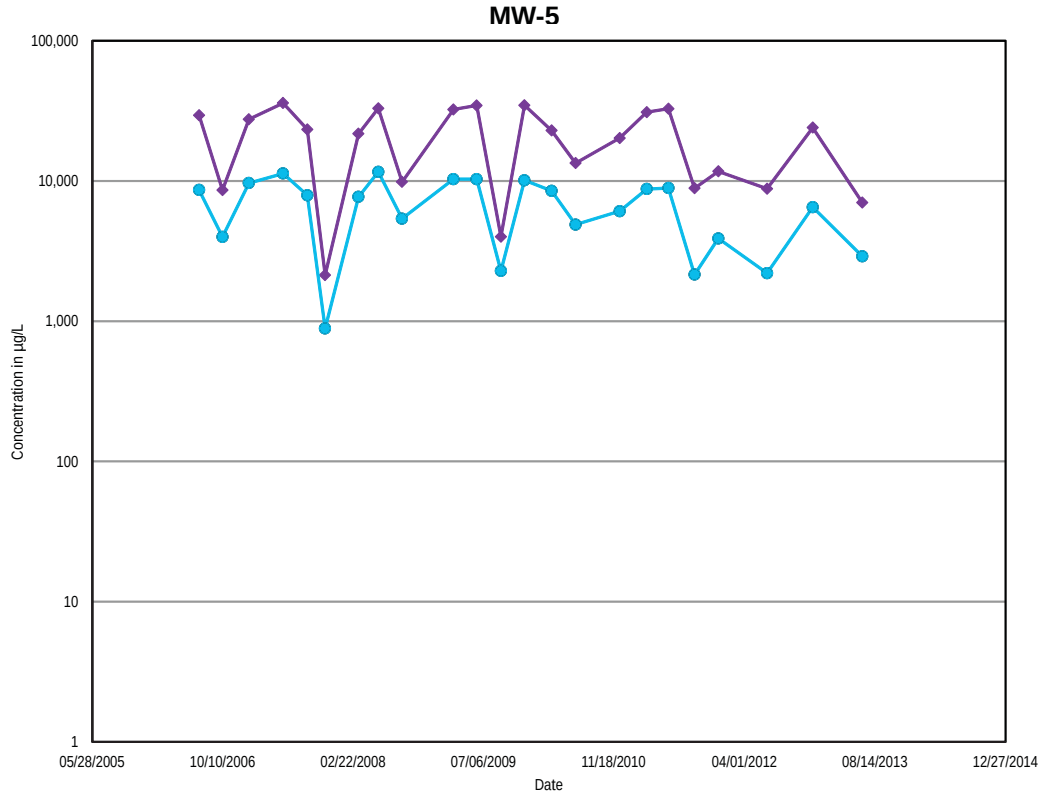
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		23





Legend:

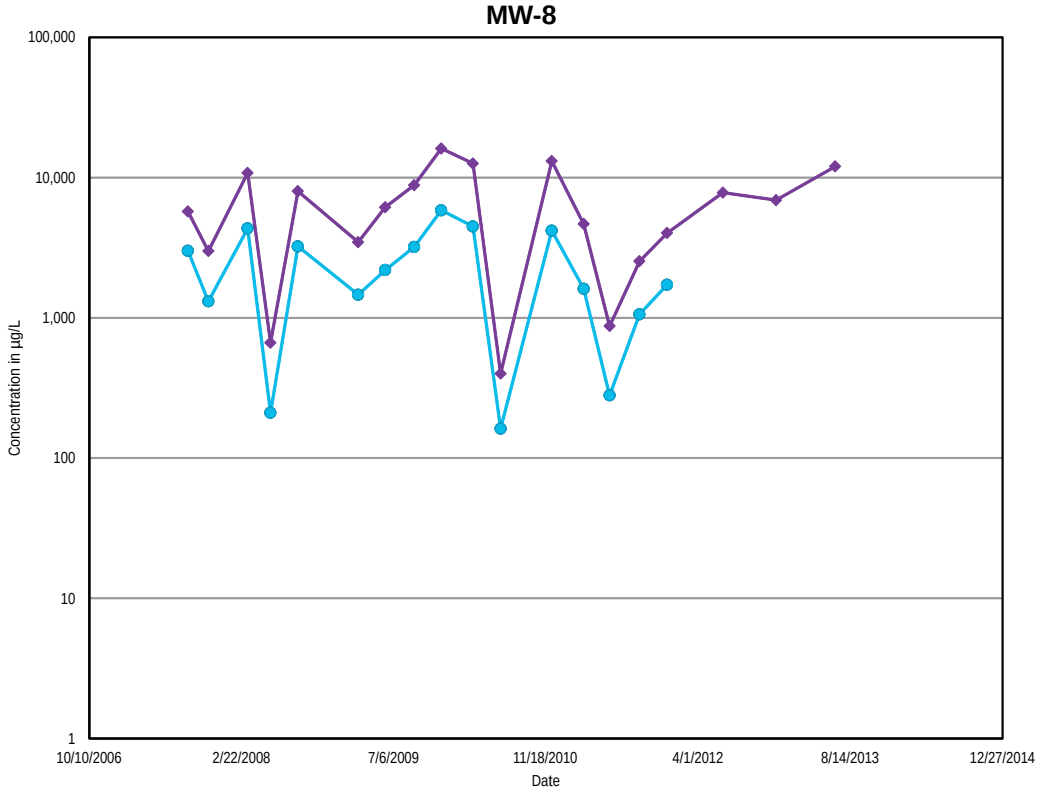
Tetrachloroethene (PCE) Concentration in µg/L

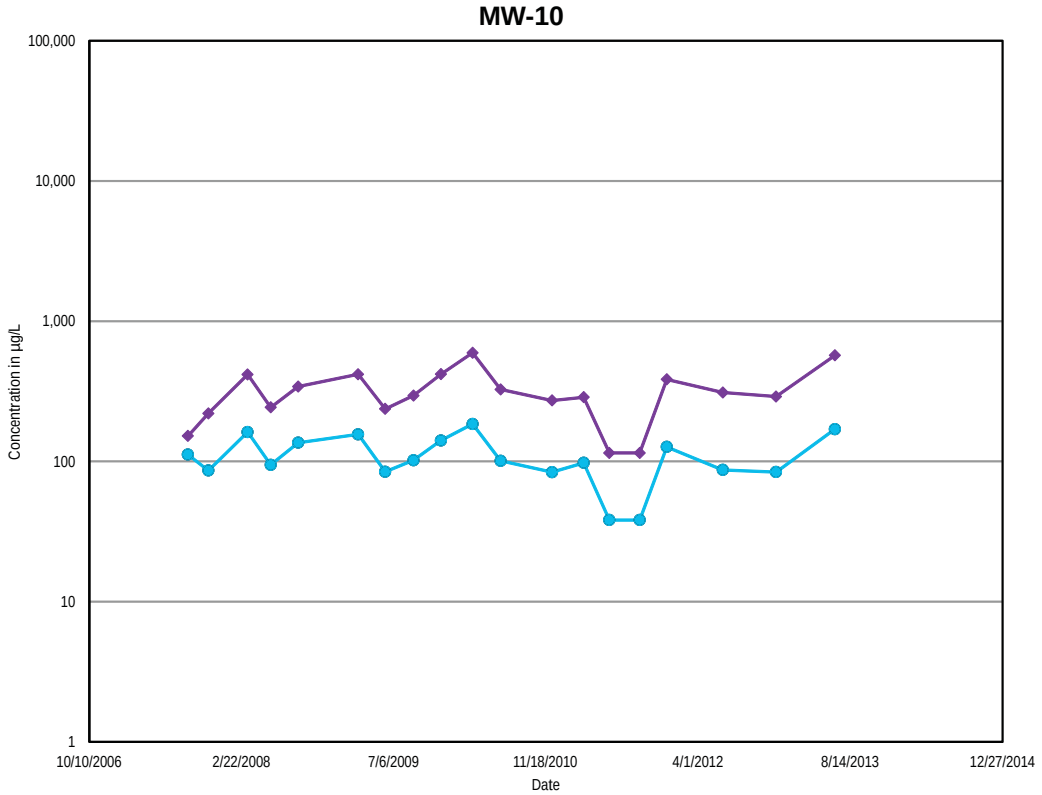
Trichloroethene (TCE) Concentration in µg/L

MW-4 and MW-5 PCE and TCE

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1073-12	Figure
	December 2013		24





Legend:

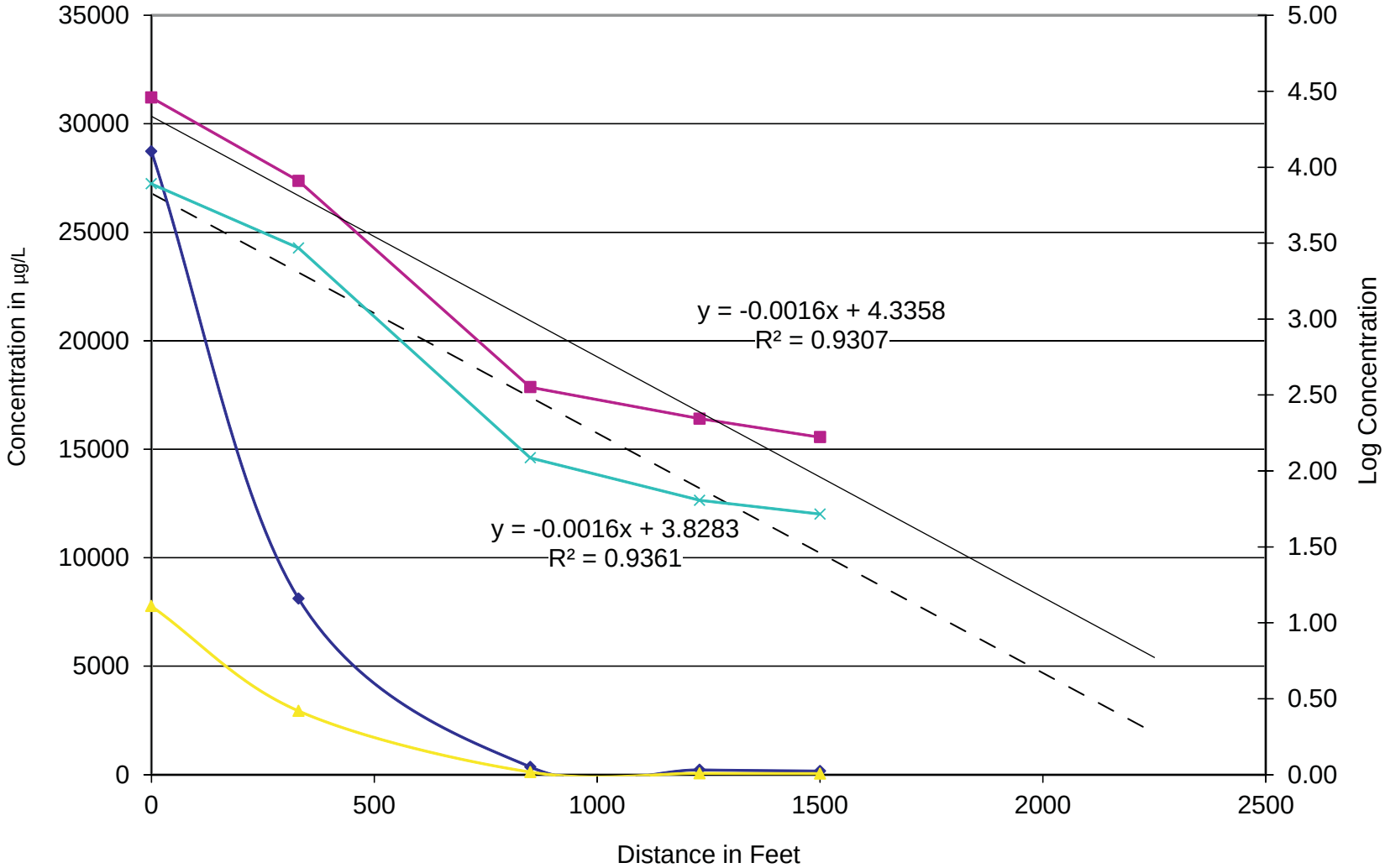
Tetrachloroethene (PCE) Concentration in µg/L

Trichloroethene (TCE) Concentration in µg/L

MW-8 and MW-10 PCE and TCE

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1073-12	Figure
	December 2013		25



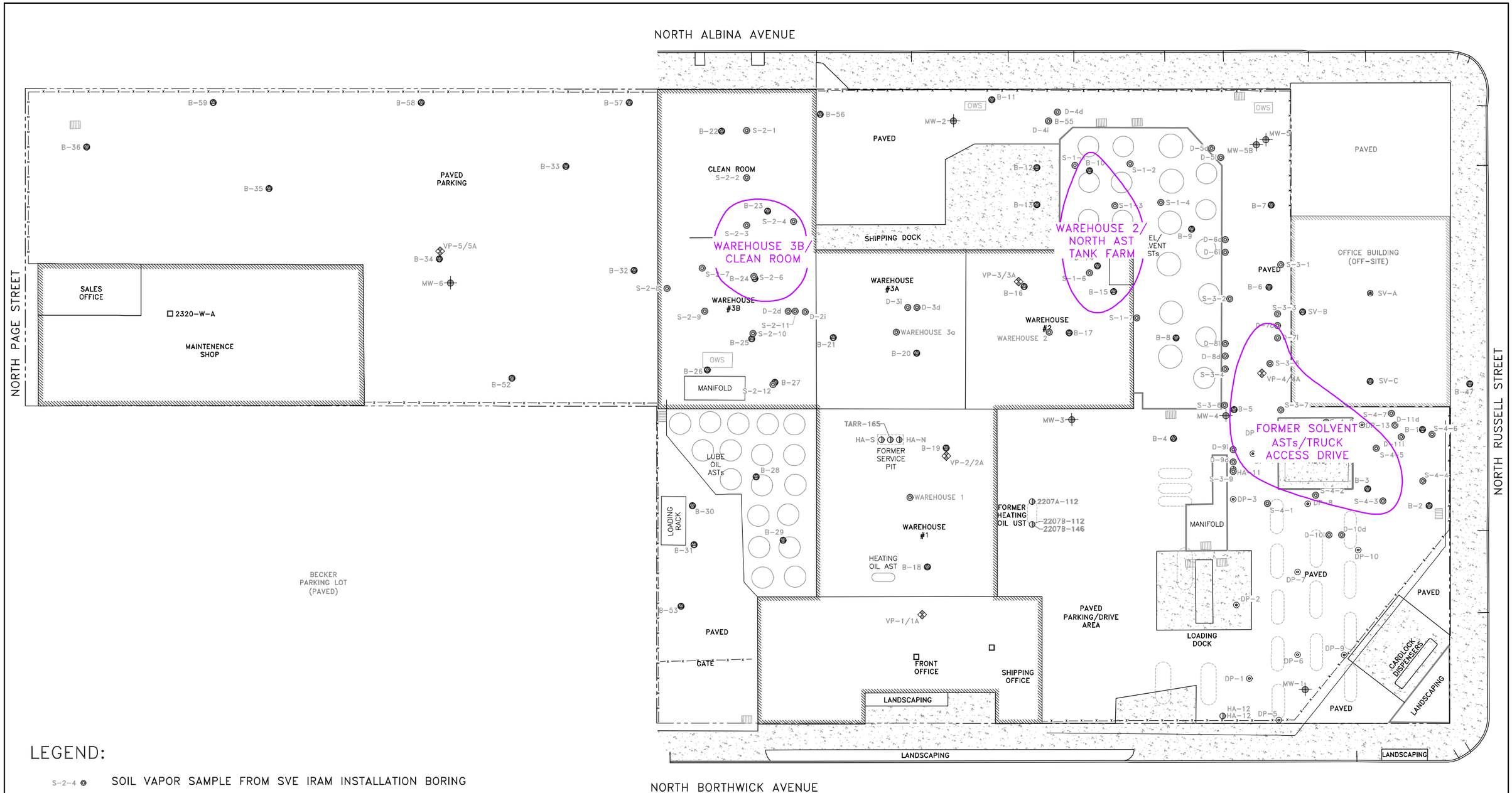
Legend:

- Tetrachloroethene (PCE) Concentration in µg/L
- Trichloroethene (TCE) Concentration in µg/L
- Log PCE Concentration in µg/L
- Linear Trendline: PCE
- Log TCE Concentration in µg/L
- Linear Trendline: TCE

PCE and TCE Along Plume Centerline

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number	1073-12	Figure 26
	December 2013		



LEGEND:

- S-2-4 — SOIL VAPOR SAMPLE FROM SVE IRAM INSTALLATION BORING
- VP-1/1A — CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
- MW-5 — GROUNDWATER MONITORING WELL
- SV-A — SOIL BORING
- B-34 — TEMPORARY SOIL VAPOR SAMPLING LOCATION
- HA-11 — HAND AUGER OR GRAB SOIL SAMPLE
- DP-1 — SOIL BORING
- BUILDING
- CONCRETE
- PARCEL/TAX LOT LINE
- FENCELINE
- OWS — OIL/WATER SEPARATOR
- STORMWATER CATCH BASIN
- UST (REMOVED)

N

0 30 60

SCALE IN FEET

SOURCE: BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006).

Source Areas

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

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Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		27

Legend:

Current Zoning

IG1 — **General Industrial 1** - These areas generally have smaller lots and a grid block pattern. The area is mostly developed, with sites having high building coverages and buildings which are usually close to the street. IG1 areas tend to be the City's older industrial areas.

IH — **Heavy Industrial** - This zone is one of the three zones that implement the Industrial Sanctuary map designation of the Comprehensive Plan. The zone provides areas where all kinds of industries may locate including those not desirable in other zones due to their objectionable impacts or appearance. The development standards are the minimum necessary to assure safe, functional, efficient, and environmentally sound development.

EX — **Central Employment** - This zone implements the Central Employment map designation of the Comprehensive Plan. The zone allows mixed-uses and is intended for areas in the center of the City that have predominantly industrial type development. The intent of the zone is to allow industrial, business, and service uses which need a central location. Residential uses are allowed, but are not intended to predominate or set development standards for other uses in the area. The development standards are intended to allow new development which is similar in character to existing development.

Future Land Use Plan

IS — **Industrial Sanctuary** - IS is intended to maintain industrial use and restrict non-industrial uses.

EX — **Central Employment** - This zone is one of the three zones that implement the Industrial Sanctuary map designation of the Comprehensive Plan. The zone provides areas where all kinds of industries may locate including those not desirable in other zones due to their objectionable impacts or appearance. The development standards are the minimum necessary to assure safe, functional, efficient, and environmentally sound development.

N

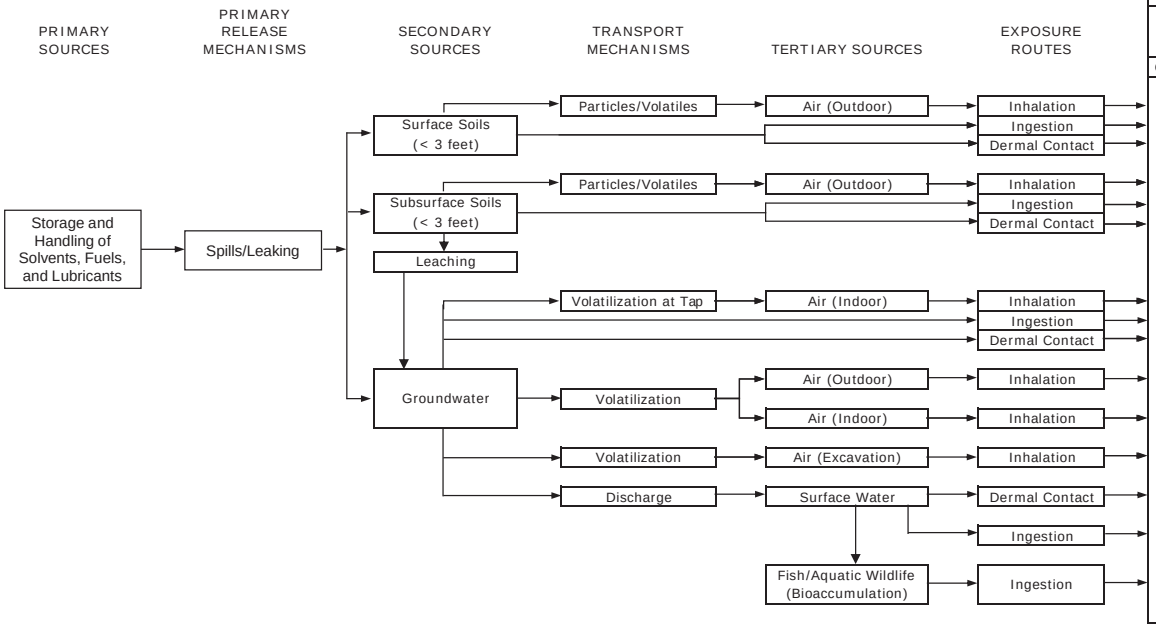
0 400 800
Approximate Scale in Feet

Land Use and Zoning

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX	Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1073-12 December 2013	Figure 28

TARR Conceptual Site Model



POTENTIAL RECEPTORS	Urban Residential		Occupational		Construction		Excavation		Subsistence Fisher		Aquatic Wildlife
	Current	Future	Current	Future	Current	Future	Current	Future	Current	Future	Future
Surface Soils (< 3 feet) – Particles/Volatiles – Air (Outdoor) – Inhalation	-	-	+	+	-	+	-	+	-	-	-
Surface Soils (< 3 feet) – Ingestion	-	-	+	+	-	+	-	+	-	-	-
Surface Soils (< 3 feet) – Dermal Contact	-	-	+	+	-	+	-	+	-	-	-
Subsurface Soils (< 3 feet) – Particles/Volatiles – Air (Outdoor) – Inhalation	+	+	+	+	-	+	-	+	-	-	-
Subsurface Soils (< 3 feet) – Ingestion	-	-	-	-	-	+	-	+	-	-	-
Subsurface Soils (< 3 feet) – Dermal Contact	-	-	-	-	-	+	-	+	-	-	-
Leaching – Volatilization at Tap – Air (Indoor) – Inhalation	-	-	-	+	-	-	-	-	-	-	-
Leaching – Ingestion	-	-	-	+	-	-	-	-	-	-	-
Leaching – Dermal Contact	-	-	-	+	-	-	-	-	-	-	-
Groundwater – Volatilization – Air (Outdoor) – Inhalation	+	+	+	+	-	+	-	+	-	-	-
Groundwater – Volatilization – Air (Indoor) – Inhalation	+	+	+	+	-	-	-	-	-	-	-
Groundwater – Volatilization – Air (Excavation) – Inhalation	-	-	-	-	-	+	-	+	-	-	-
Groundwater – Discharge – Surface Water – Dermal Contact	-	-	-	-	-	-	-	-	+	+	+
Groundwater – Discharge – Surface Water – Ingestion	-	-	-	-	-	-	-	-	-	-	+
Groundwater – Discharge – Surface Water – Fish/Aquatic Wildlife (Bioaccumulation) – Ingestion	-	-	-	-	-	-	-	-	+	+	+

Notes:

+ This route is a primary source of exposure.
- There is no exposure by this route.

Conceptual Site Model

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number 1073-12

December 2013

Figure 29

NOTES:
1) FACILITY EXPOSURE AREA INCLUDES SOIL, MW-8 GROUNDWATER, AND AIR CONCENTRATIONS FROM EITHER THE OFFICE, WAREHOUSE, OR SHOP.

2) FACILITY OUTDOOR AMBIENT SAMPLE LOCATION: VP-4

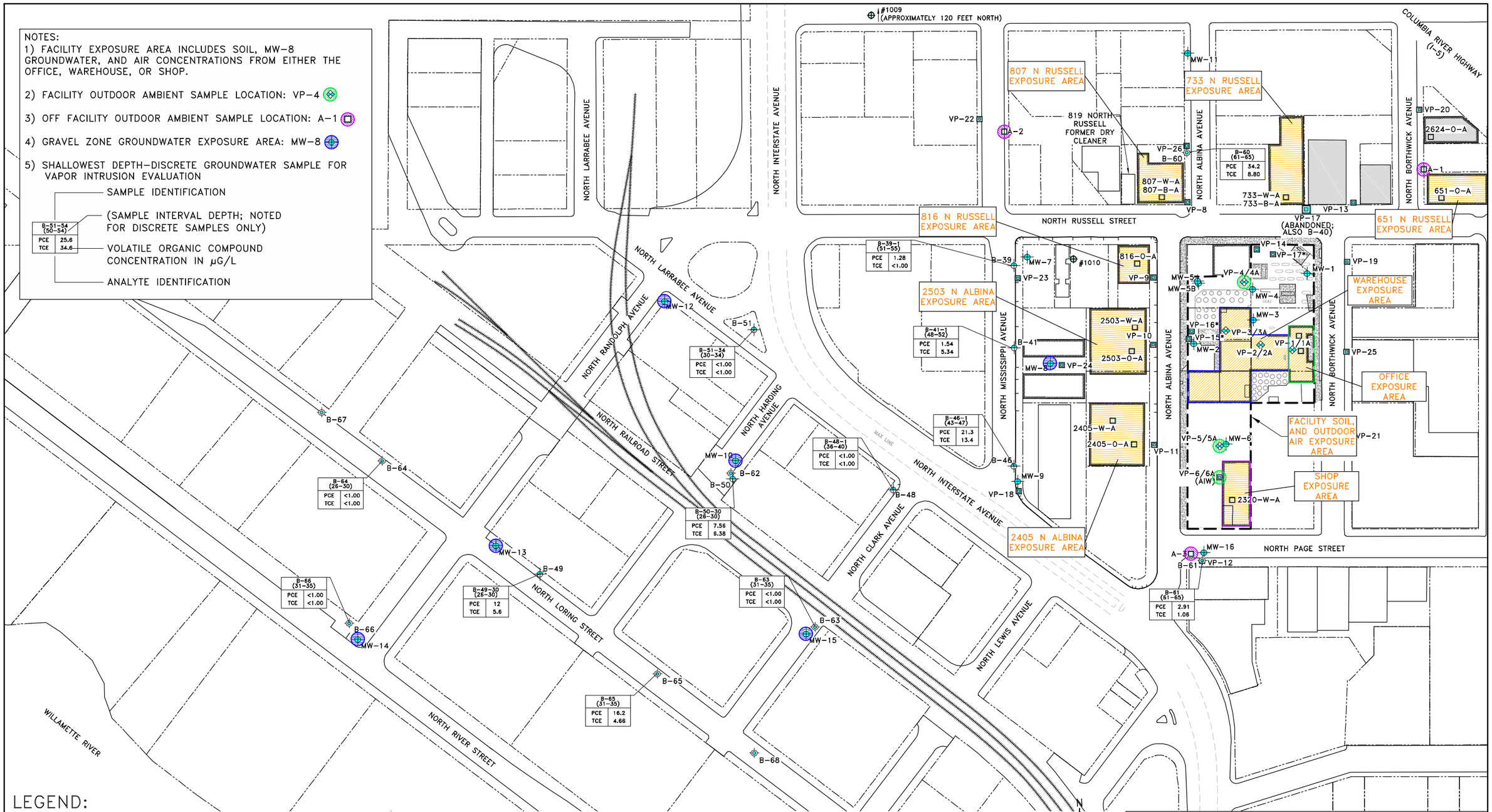
3) OFF FACILITY OUTDOOR AMBIENT SAMPLE LOCATION: A-1

4) GRAVEL ZONE GROUNDWATER EXPOSURE AREA: MW-8

5) SHALLOWEST DEPTH-DISCRETE GROUNDWATER SAMPLE FOR VAPOR INTRUSION EVALUATION

B-51-54 (50-54)	
PCE	25.6
TCE	34.6

- SAMPLE IDENTIFICATION
- (SAMPLE INTERVAL DEPTH; NOTED FOR DISCRETE SAMPLES ONLY)
- VOLATILE ORGANIC COMPOUND CONCENTRATION IN µG/L
- ANALYTE IDENTIFICATION



LEGEND:

- MW-2 — GROUNDWATER MONITORING WELL
- #1010 — IDENTIFIED WATER WELL LOCATION AND DESIGNATION (APPROXIMATE)
- VP-12 — PERMANENT VAPOR POINT
- VP-17* — DEEP PERMANENT VAPOR POINT
- A-1 — AMBIENT AIR SAMPLE
- VP-1/1A — CO-LOCATED (SOIL VAPOR/ AMBIENT AIR) SAMPLE LOCATION
- CONCRETE
- PARCEL/TAX LOT LINE
- CURBLINE
- FENCELINE
- BUILDING (AMBIENT AIR SAMPLING COMPLETED)
- EXPOSURE AREA

0 150 300
SCALE IN FEET

N

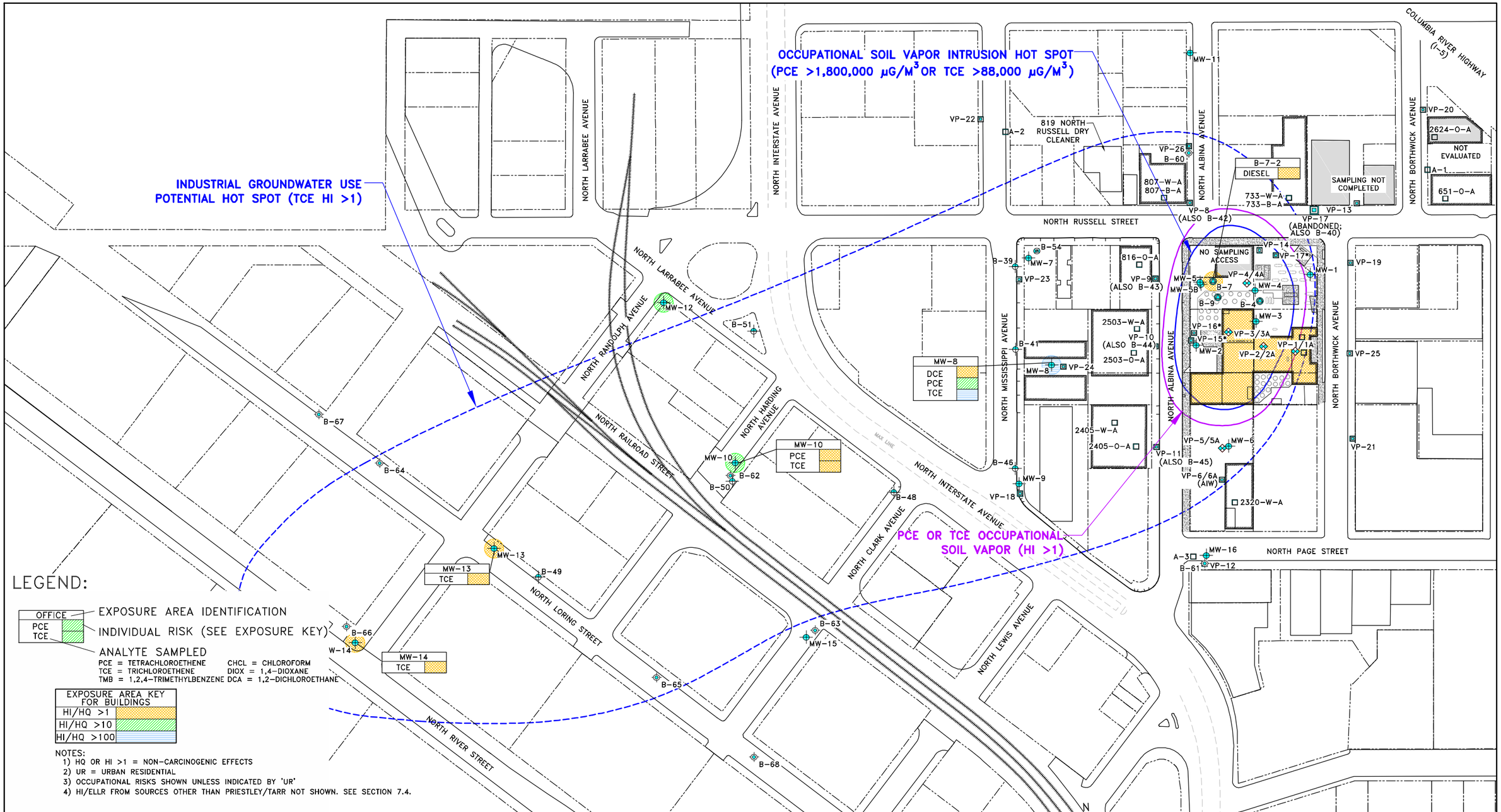
SOURCES: 1) BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006) AND A TAX LOT FILE FROM THE CITY OF PORTLAND (2010).

Exposure Areas

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		30



LEGEND:

OFFICE	EXPOSURE AREA IDENTIFICATION
PCE / TCE	INDIVIDUAL RISK (SEE EXPOSURE KEY)
	ANALYTE SAMPLED

PCE = TETRACHLOROETHENE
TCE = TRICHLOROETHENE
TMB = 1,2,4-TRIMETHYLBENZENE
CHCL = CHLOROFORM
DIOX = 1,4-DIOXANE
DCA = 1,2-DICHLOROETHANE

EXPOSURE AREA KEY FOR BUILDINGS
HI/HQ >1
HI/HQ >10
HI/HQ >100

NOTES:
1) HQ OR HI >1 = NON-CARCINOGENIC EFFECTS
2) UR = URBAN RESIDENTIAL
3) OCCUPATIONAL RISKS SHOWN UNLESS INDICATED BY 'UR'
4) HI/ELLR FROM SOURCES OTHER THAN PRIESTLEY/TARR NOT SHOWN. SEE SECTION 7.4.

MW-2 GROUNDWATER MONITORING WELL
B-54 TEMPORARY SOIL VAPOR SAMPLING LOCATION
B-41 PUSH PROBE LOCATION
B-64 DEPTH DISCRETE GROUNDWATER SAMPLE LOCATION
VP-12 PERMANENT VAPOR POINT
VP-17* DEEP PERMANENT VAPOR POINT
A-1 AMBIENT AIR SAMPLE
VP-1/1A CO-LOCATED (SOIL VAPOR/AMBIENT AIR) SAMPLE LOCATION
B-4 SOIL BORING

BUILDING (AMBIENT AIR SAMPLING COMPLETED)
CONCRETE
PARCEL/TAX LOT LINE
CURBLINE
FENCELINE

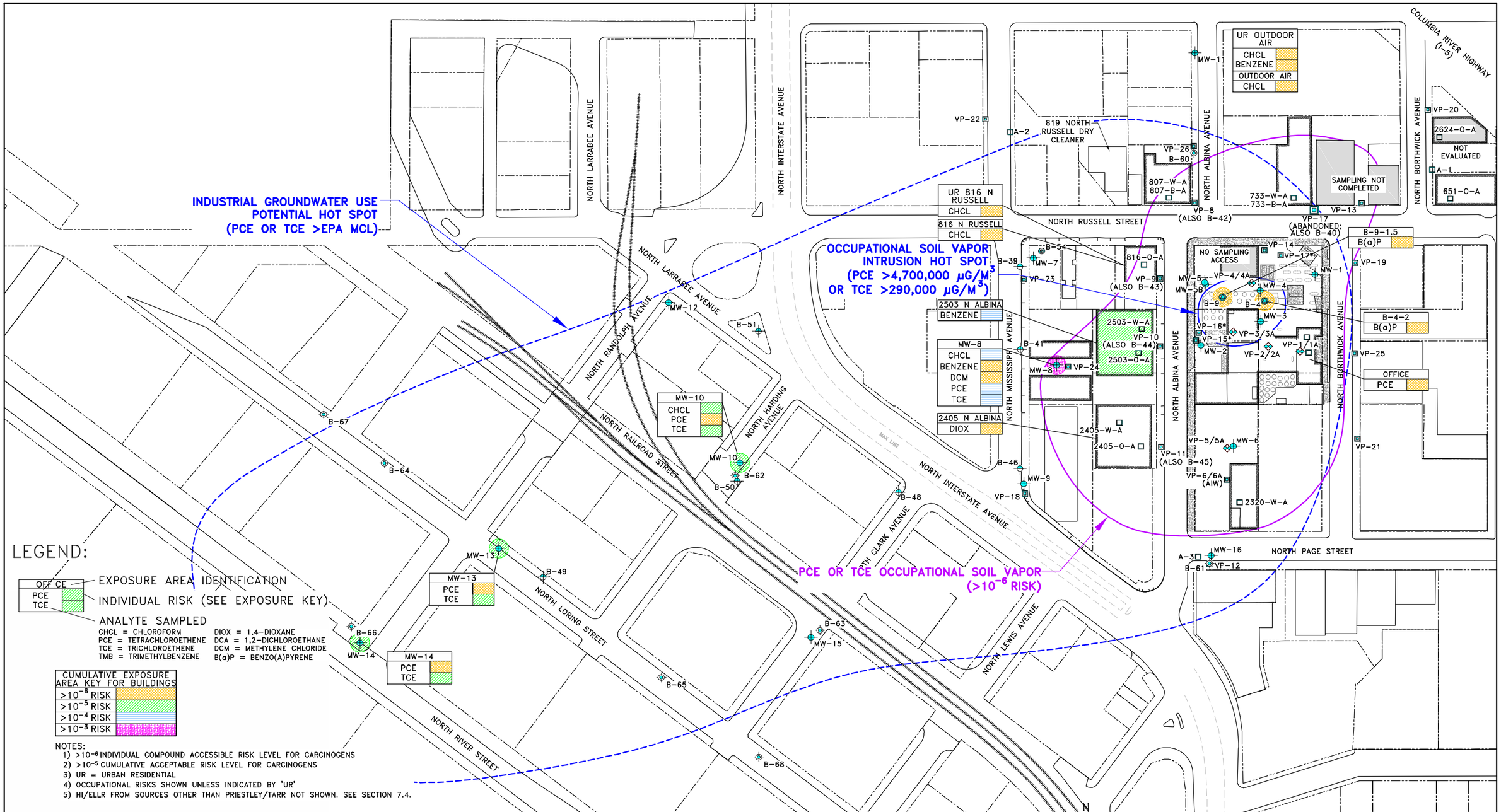
SOURCES: 1) BASE MAP PREPARED FROM A SITE SURVEY BY STATEWIDE LAND SURVEYING, INC. (8/2006) AND A TAX LOT FILE FROM THE CITY OF PORTLAND (2010).

Risk Assessment and Hot Spot Summary - Non-Carcinogenic Effects

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		31



Risk Assessment and Hot Spot Summary - Carcinogenic Risks

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1073-12	Figure
December 2013		32

Appendix A

Historical Aerial Photographs

N

0 200 400

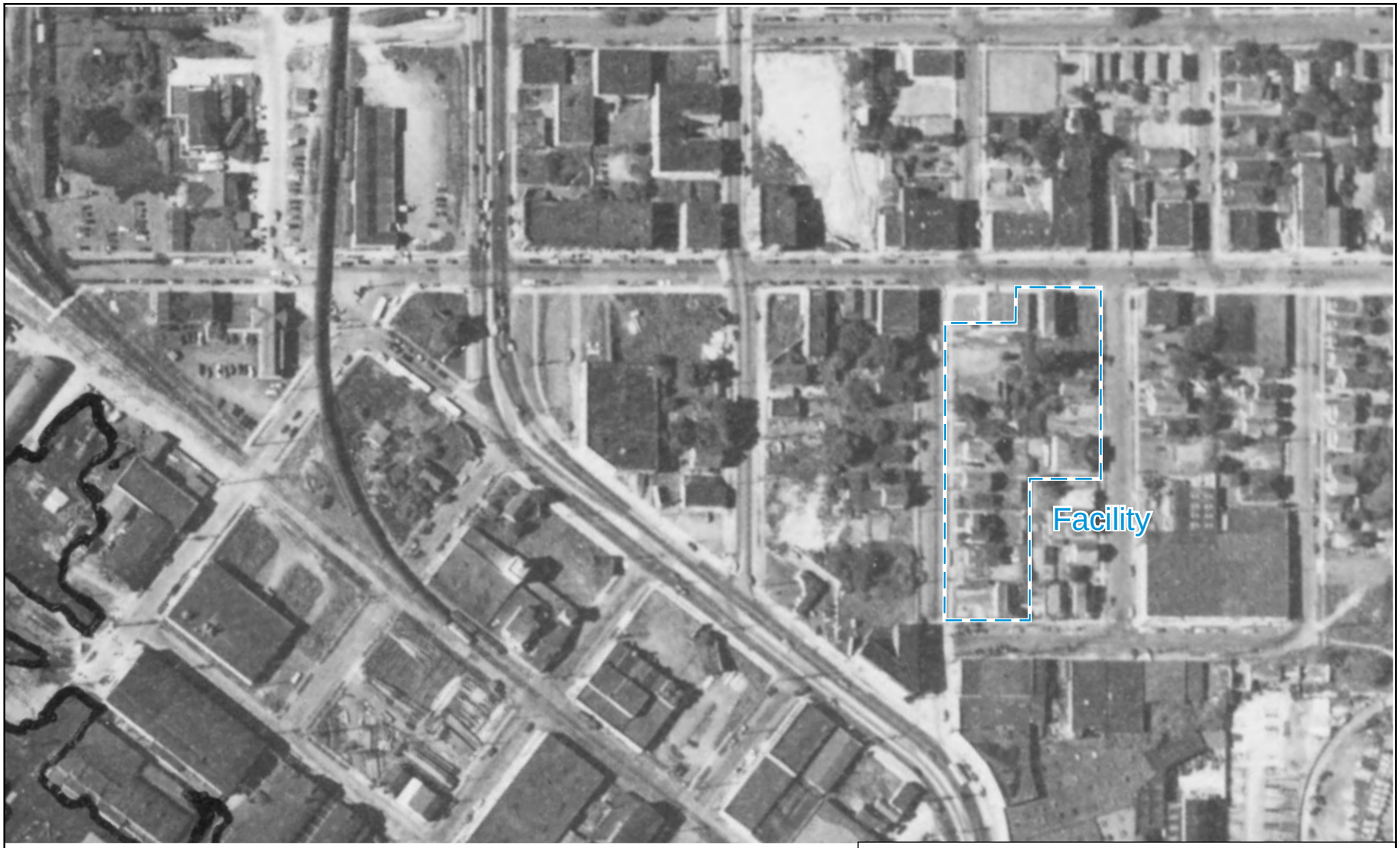
Approximate Scale in Feet

1936 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-1



N

0 200 400

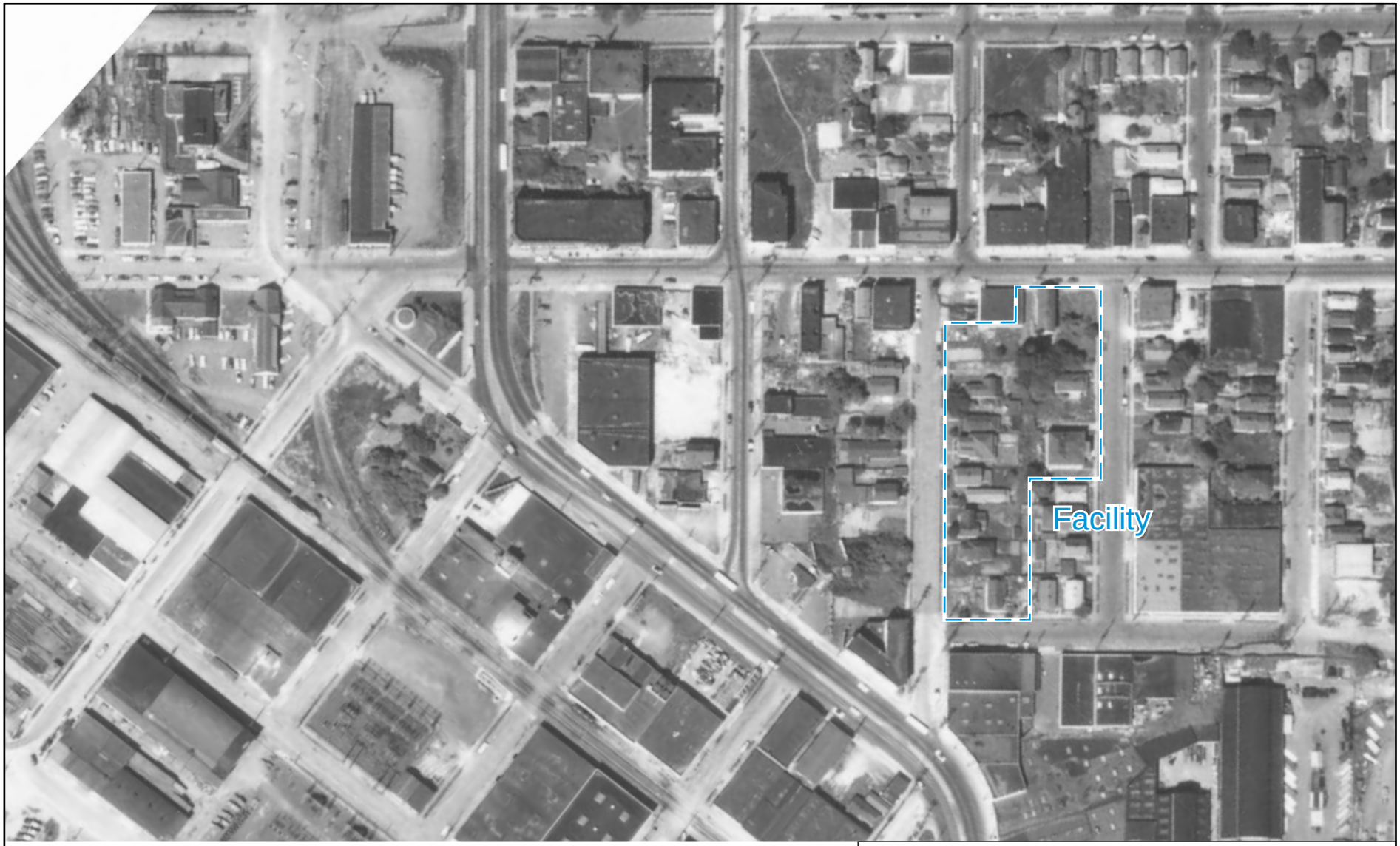
Approximate Scale in Feet

1948 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-2



N

0 200 400

Approximate Scale in Feet

1957 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-3

N

0 200 400

Approximate Scale in Feet

1961 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-4

N

0 200 400

Approximate Scale in Feet

1963 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-5

N

0 200 400

Approximate Scale in Feet

1967 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-6

N

0 200 400

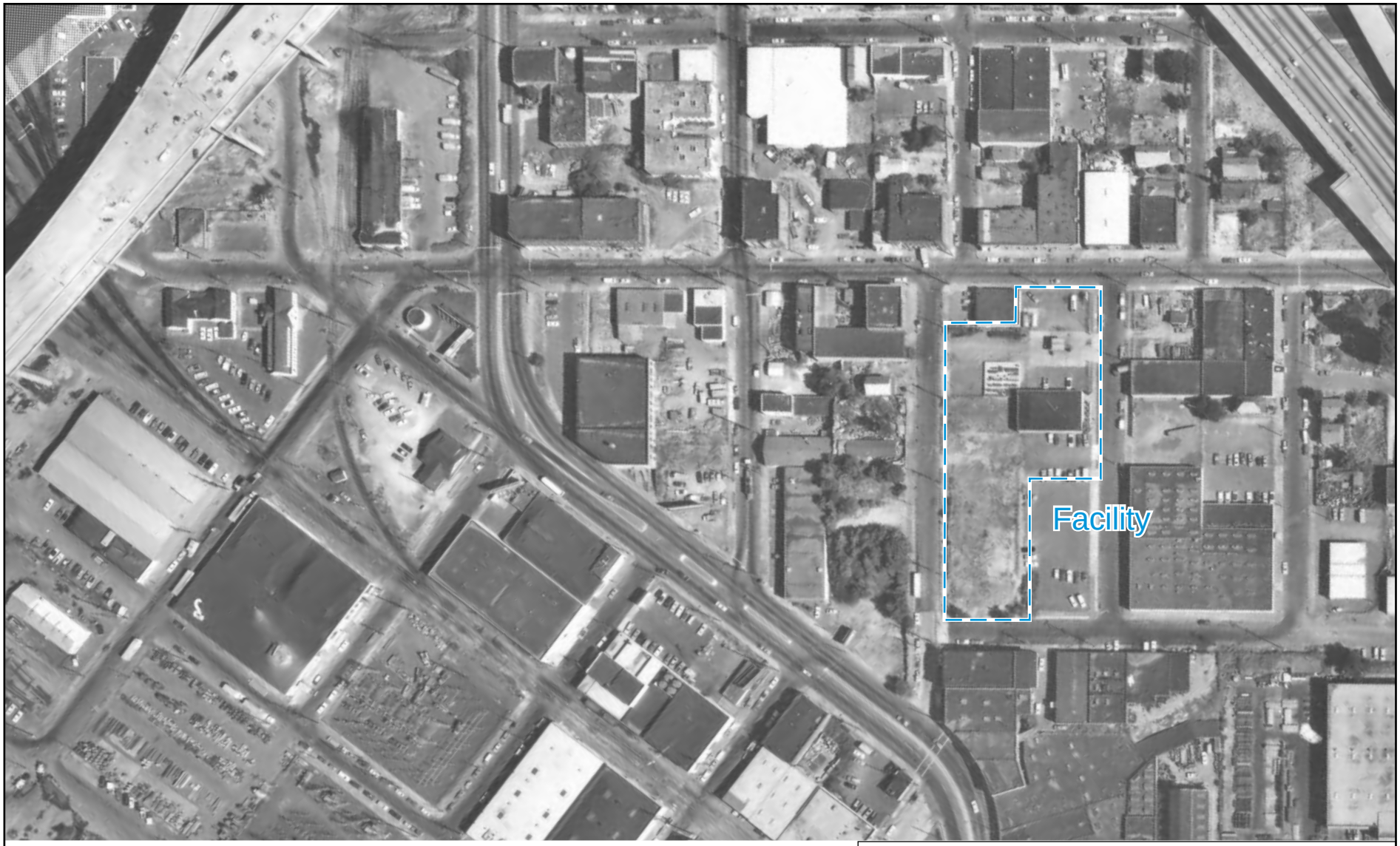
Approximate Scale in Feet

1970 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-7



N

0 200 400

Approximate Scale in Feet

1972 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-8

N

0 200 400

Approximate Scale in Feet

1974 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-9

N

0 200 400

Approximate Scale in Feet

1976 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-10

N

0 200 400

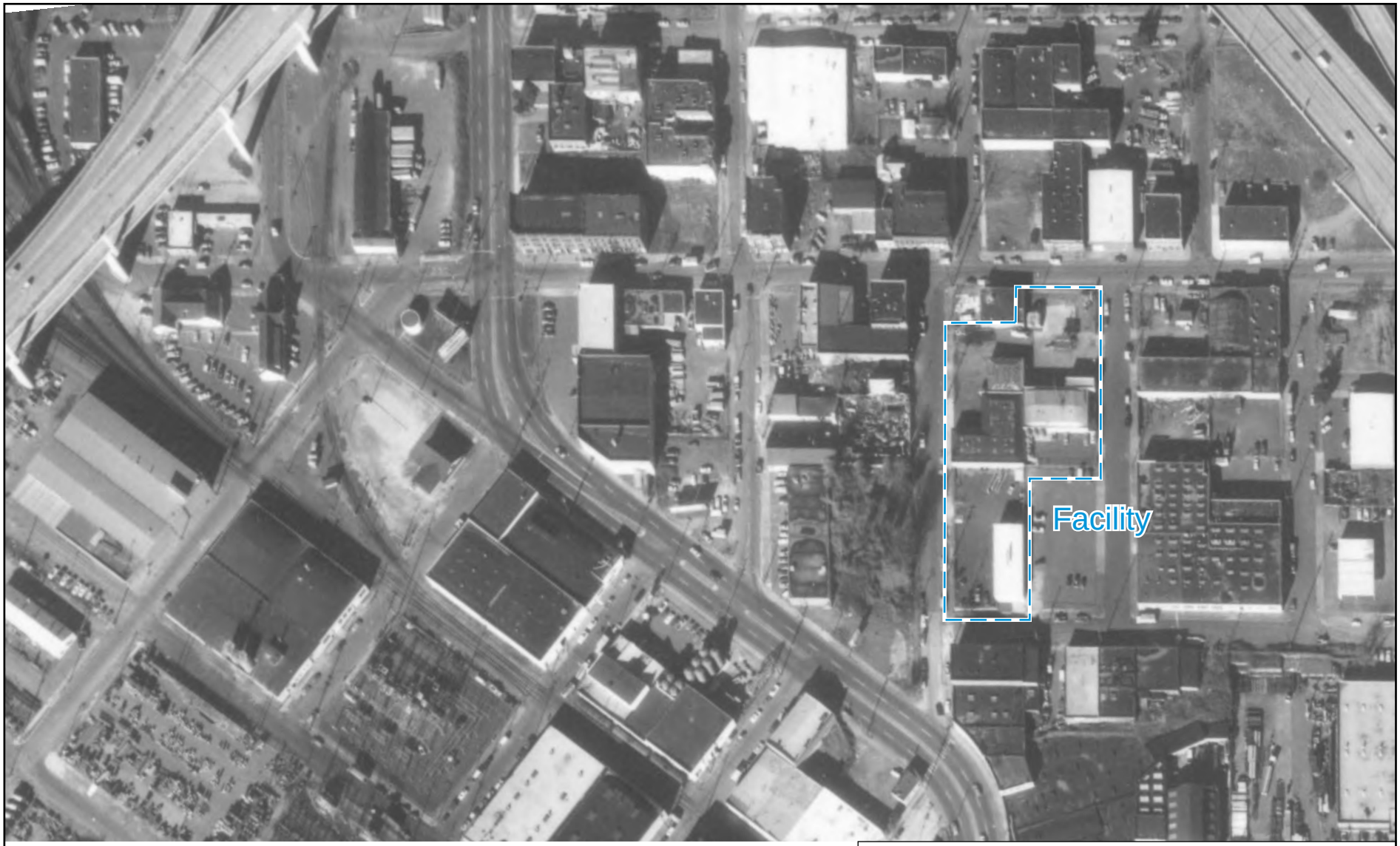
Approximate Scale in Feet

1977 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-11



N

0 200 400

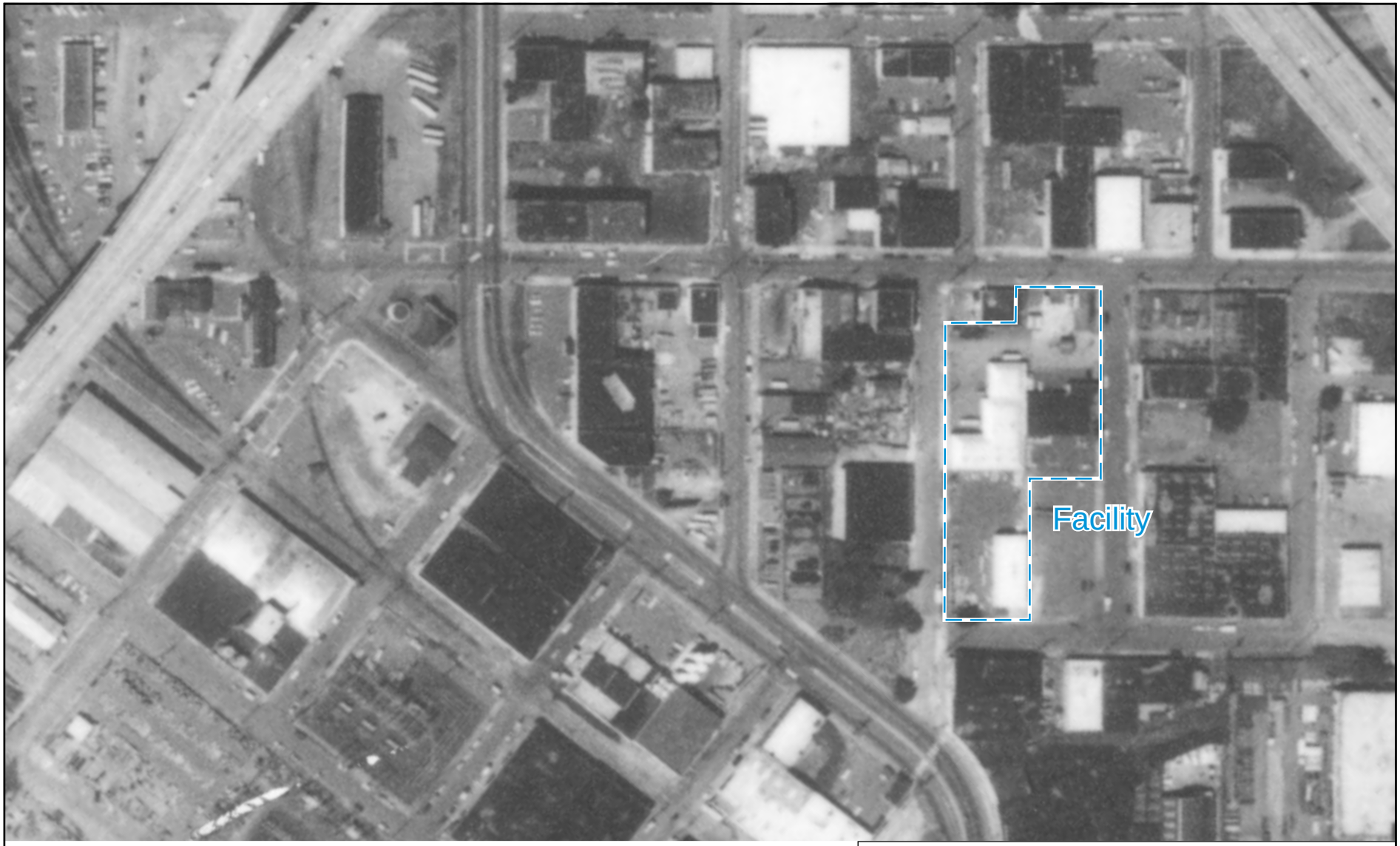
Approximate Scale in Feet

1980 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-12



N

0 200 400

Approximate Scale in Feet

1983 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-13

N

0 200 400

Approximate Scale in Feet

1986 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-14

N

0 200 400

Approximate Scale in Feet

1996 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-15

N

0 200 400

Approximate Scale in Feet

2004 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-16

N

0 200 400

Approximate Scale in Feet

NOTE: Photograph from 2011 - Google Imagery.

2010 Aerial Photograph

Remedial Investigation Report
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1073-09	Figure
May 2011		A-17

Appendix B

Exploration and Monitoring Well Logs

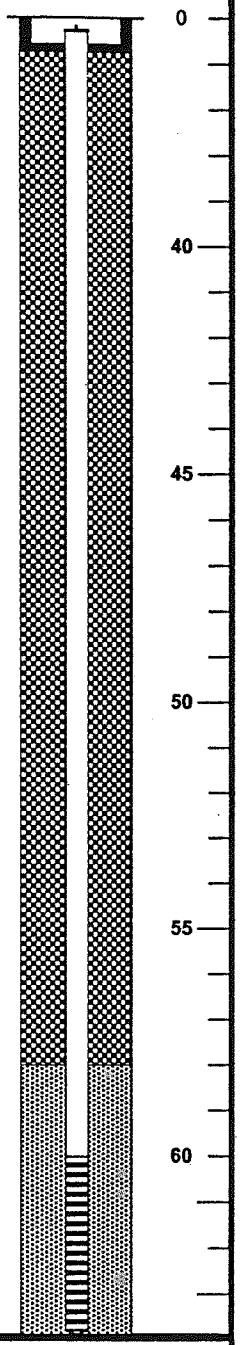
Appendix B – Well Construction Details
Tarr Inc., 2429 N Borthwick, Portland, Oregon

Well ID	Facility	Installation Consultant	Well Installation Date	Well Monument Type	Casing Diameter (inches)	Sand Pack				Well Screen				Well Casing		Boring		Survey Information		Survey Datum
						Depth		Elevation		Depth		Elevation		Depth	Elevation	Depth	Elevation	Elevation		
						Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Bottom	Bottom	Bottom	Bottom	PVC	Ground	
MW-1	TARR	Wohlers	07/21/03	Flush	3/4	58	80	16.66	-5.34	60	80	14.66	-5.34	80	-5.34	80	-5.34	74.66	75.21	City of Portland
MW-2	TARR	Wohlers	07/18/03	Flush	3/4	52	75	18.71	-4.29	54	75	16.71	-4.29	75	-4.29	75	-4.29	70.71	71.40	City of Portland
MW-3	TARR	Wohlers	07/18/03	Flush	3/4	58	80	16.92	-5.08	60	80	14.92	-5.08	80	-5.08	80	-5.08	74.92	75.55	City of Portland
MW-4	TARR	Wohlers	07/18/03	Flush	3/4	58	80	16.40	-5.60	60	80	14.4	-5.60	80	-5.6	80	-5.60	74.40	75.24	City of Portland
MW-5	TARR	Ash Creek	05/18/06	Flush	2	53	67.4	17.66	3.26	57	67	13.66	3.66	67.4	3.26	67.4	3.26	70.66	70.79	City of Portland
MW-5B	TARR	Ash Creek	06/02/06	Flush	2	73.5	82	-2.77	-11.27	77	81.5	-6.27	-10.77	82	-11.27	82	-11.27	70.73	70.94	City of Portland
MW-6	TARR	Ash Creek	08/15/07	Flush	2	60	72.5	14.93	2.43	62	72	12.93	2.93	72.5	2.43	72.5	2.43	74.93	75.36	City of Portland
MW-7	CITY OF PORTLAND	Ash Creek	08/17/07	Flush	2	59	75	-1.76	-17.76	61	74	-3.76	-16.76	75	-17.76	75	-17.76	57.24	57.48	City of Portland
MW-8	WIDMER	Ash Creek	08/20/07	Flush	2	56.5	70	-1.74	-15.24	58.5	68.5	-3.74	-13.74	69	-14.24	70	-15.24	54.76	54.99	City of Portland
MW-9	CITY OF PORTLAND	Ash Creek	09/11/07	Flush	3/4	60	73	-10.09	-23.09	62	72	-12.09	-22.09	72.5	-22.59	73	-23.09	49.91	50.19	City of Portland
MW-10	CITY OF PORTLAND	Ash Creek	08/15/07	Flush	2	43	56	-6.90	-19.90	45	55	-8.9	-18.90	55.5	-19.4	56	-19.90	36.10	36.42	City of Portland
MW-11	CITY OF PORTLAND	Ash Creek	11/20/10	Flush	2	87	100.25	-10.96	-24.21	90	100	-13.96	-23.96	100.25	-24.21	100.25	-24.21	76.04	76.32	City of Portland
MW-12	CITY OF PORTLAND	Ash Creek	10/23/10	Flush	2	47	60.25	-11.66	-24.91	50	60	-14.66	-24.66	60.25	-24.91	60.25	-24.91	35.34	36.16	City of Portland
MW-13	CITY OF PORTLAND	Ash Creek	10/22/10	Flush	2	33	45	-0.20	-12.20	34.7	44.7	-1.9	-11.90	45	-12.2	45	-12.20	32.80	33.18	City of Portland
MW-14	CITY OF PORTLAND	Ash Creek	11/01/10	Flush	2	41	54.4	-9.35	-22.75	44.1	54.1	-12.45	-22.45	54.4	-22.75	88	-56.35	31.65	31.97	City of Portland
MW-15	CITY OF PORTLAND	Ash Creek	10/27/10	Flush	2	47.1	61	-13.86	-27.76	50	60	-16.76	-26.76	60.3	-27.06	90	-56.76	33.24	33.78	City of Portland
MW-16	CITY OF PORTLAND	Ash Creek	10/28/10	Flush	2	57.5	70.5	12.45	-0.55	60	70	9.95	-0.05	70.3	-0.35	70.5	-0.55	69.95	70.35	City of Portland

Notes:
Depth = Below ground surface (feet).
Elevation in Feet Above Mean Sea Level (MSL).

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description
0								~4" Asphalt and 8" Sub-base Gravel.
								NO SOIL SAMPLING UNTIL 40'
40	0.0		Grab	MW-1-40'	SW			Fine SAND: medium brown, medium stiff, dry, no odor or staining.
45	0.0		Grab	MW-1-45'				
50	0.0		Grab	MW-1-50'				
								-moist
55	0.0		Grab	MW-1-55'				
60	0.0		Grab	MW-1-60'				∇ -saturated.

Well Diagram



FIELD LOCATION: ~7' north and 4' west of northeast edge of gate.
DWRD NO. 156605
WELL CASING ELEVATION: NA
WELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 80'
TOTAL DEPTH: 80'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 60'-80' bsg
DRILL DATE: 7/18/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

MONITORING WELL MW-1

TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/21/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 1 of 2	FILE: MW030005

T001352

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description	Well Diagram
65	0.0		Grab	MW-1-66'	SW				65
70	0.0		Grab	MW-1-70'				Fine SAND: some silt, dark brown, medium stiff, saturated, no odor or staining.	70
75	0.0		Grab	MW-1-75'					75
80	0.0		Grab	MW-1-80'				Boring terminated @ 80' bsg.	80
85									85
90									90

FIELD LOCATION: ~ 7' north and 4' west of northeast edge of gate.
OWRD NO. 156605
WELL CASING ELEVATION: NA
WELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 80'
TOTAL DEPTH: 80'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 60'-80' bsg
DRILL DATE: 7/18/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

MONITORING WELL MW-1

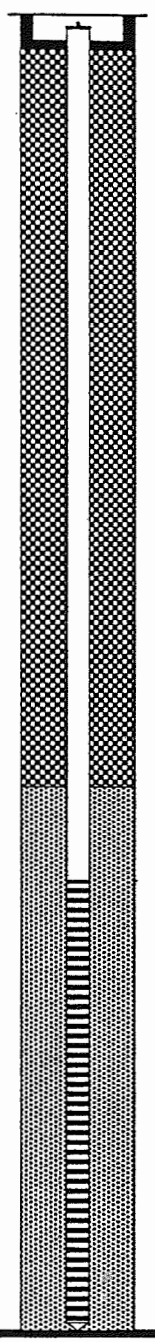
TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/21/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 2 of 2	FILE: MW030005

T001353

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description
0								~4" Asphalt and 8" Sub-base Gravel.
								NO SOIL SAMPLING UNTIL 40'
40	0.0		Grab	MW-2-40'	SW			Fine SAND: medium brown, medium stiff, moist, no odor or staining.
45	0.0		Grab	MW-2-45'				
50	0.0		Grab	MW-2-50'				
					ML			Fine Sandy SILT: medium brown, medium stiff, wet, no odor or staining.
55	0.0		Grab	MW-2-55'	SW			Fine SAND: medium brow, medium stiff, moist, no odor or staining.
60	0.0		Grab	MW-2-60'				▽ -saturated.

Well Diagram



FIELD LOCATION: ~ 27' north and 8' west of southwestern corner of building.
OWRD NO. 156604
WELL CASING ELEVATION: NA
WELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 75'
TOTAL DEPTH: 75'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 55'-75' bsg
DRILL DATE: 7/17/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

MONITORING WELL MW-2

TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/18/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 1 of 2	FILE: MW030005

T001354

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description	Well Diagram
65	0.0		Grab	MW-2-66'	SW				65
70	0.0		Grab	MW-2-70'					70
								-indistinct odor.	
75	0.0		Grab	MW-2-75'				Boring terminated @ 75' bsg.	75
80									80
85									85
90									90

FIELD LOCATION: ~ 27' north and 8' west of southwestern corner of building.
OWRD NO. 156604
WELL CASING ELEVATION: NA
WELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 75'
TOTAL DEPTH: 75'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 55' - 75' bsg
DRILL DATE: 7/17/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

MONITORING WELL MW-2

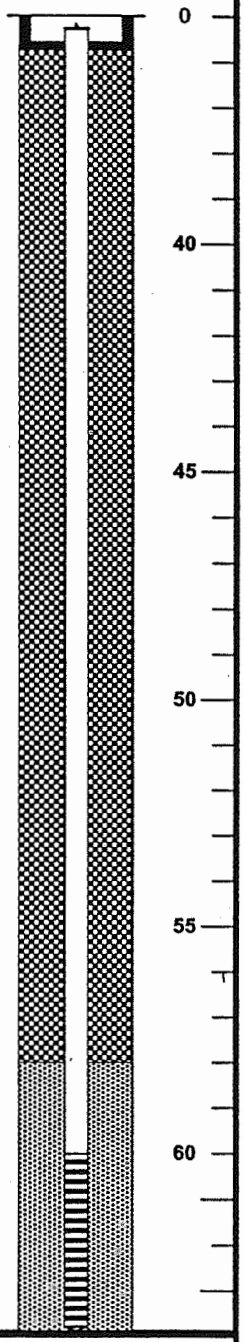
TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/18/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 2 of 2	FILE: MW030005

T001355

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description
0								~4" Asphalt and 8" Sub-base Gravel.
								NO SOIL SAMPLING UNTIL 40'
40	0.0		Grab	MW-3-40'	SW			Fine SAND: medium brown, medium stiff, dry, no odor or staining.
45	0.0		Grab	MW-3-45'				
50	0.0		Grab	MW-3-50'				
55	0.0		Grab	MW-3-55'				Fine SAND: dark brown, medium stiff, wet, no odor or staining.
60	0.0		Grab	MW-3-60'				▽ -saturated.

Well Diagram



FIELD LOCATION: ~ 18' north and 94' east of southeast corner of ASTs.
OWRD NO. 156603
WELL CASING ELEVATION: NA
WELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 80'
TOTAL DEPTH: 80'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 60' -80' bsg
DRILL DATE: 7/17/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

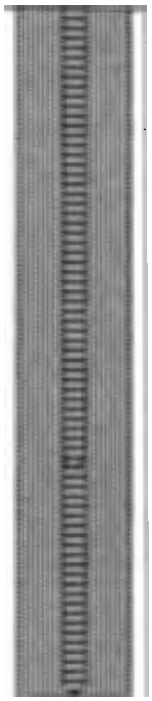
MONITORING WELL MW-3

TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/18/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 1 of 2	FILE: MW030005

T001356

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description	Well Diagram
65	0.0		Grab	MW-3-66'	SW				65
70	0.0		Grab	MW-3-70'					70
								-continuous gray staining, indistinct odor.	
75	0.0		Grab	MW-3-75'					75
								Fine SAND: gray, medium stiff, saturated, indistinct odor.	
80	0.0		Grab	MW-3-80'				Boring terminated @ 80' bsg.	80
85									85
90									90



. ELD LOCATION: ~ 18' north and 94' east of southeast corner of ASTs.
WRD NO. 156603
ELL CASING ELEVATION: NA
ELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 80'
TOTAL DEPTH: 80'
BORING DIAMETER: 2 1/4"
WELL DIAMETER:
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL:
DRILL DATE: 7/17/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS
NVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

MONITORING WELL MW-3

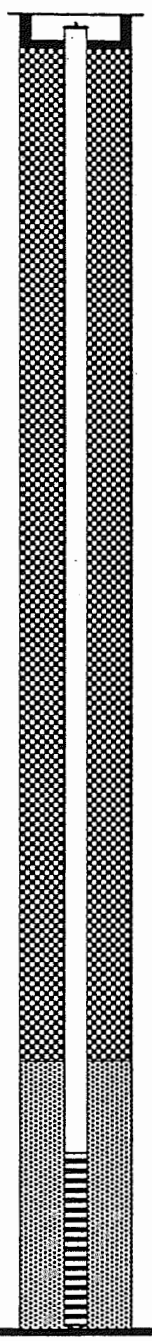
TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/18/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 2 of 2	FILE: MW030005

T001357

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphica Log	Description
0								~4" Asphalt and 8" Sub-base Gravel.
								NO SOIL SAMPLING UNTIL 40'
40	0.0		Grab	MW-4-40'	SW			Fine SAND: medium brown, medium stiff, dry, no odor or staining.
	0.0		Grab	MW-4-44'				
45								
	8.8		Grab	MW-4-48'				-indistinct odor.
50								
	12.3		Grab	MW-4-52'				-medium stiff, moist.
55								
	18.0		Grab	MW-4-56'				
60	15.6		Grab	MW-4-60'				Silty SAND: dark brown, stiff, moist, indistinct odor, no staining.
	3.9		Grab	MW-4-64'				∇ -saturated, no odor.

Well Diagram



FIELD LOCATION: ~21' north and 96' west of northeast edge of gate
WRD NO. 156602
WELL CASING ELEVATION: NA
WELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 80'
TOTAL DEPTH: 80'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 60' - 80' bsg
DRILL DATE: 7/17/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

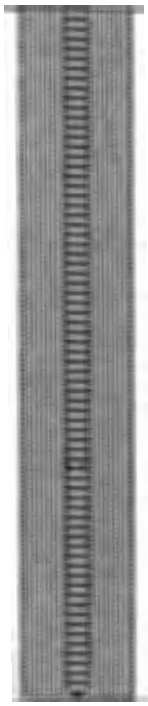
MONITORING WELL MW-4

TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/18/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 1 of 2	FILE: MW030005

T001358

Depth (feet bsg)	Recovery	Blowcount	Type of Sample	Sample Number	USCS Soil Type	Static H_2O Level	Graphics Log	Description	Well Diagram
65					SW				65
	0.6		Grab	MW-4-68'					
70									70
	0.3		Grab	MW-4-72'					
								-continuous gray staining, indistinct odor.	
75									75
	0.0		Grab	MW-4-76'					
								Fine SAND: gray, medium stiff, saturated, indistinct odor.	
80	0.0		Grab	MW-4-80'				Boring terminated @ 80' bsg.	80
85									85
90									90



ELD LOCATION: ~ 21' north and 96' west of northeast edge of gate.
OWRD NO. 156602
ELL CASING ELEVATION: NA
ELL CASING TYPE: PVC
SCREEN PERFORATION: 0.010"

WELL COMPLETION DEPTH: 80'
TOTAL DEPTH: 80'
BORING DIAMETER: 2 1/4"
WELL DIAMETER: 3/4"
FILTER PACK: 20/40 Sand

SEAL TYPE: Bentonite
SCREEN INTERVAL: 60' - 80' bsg
DRILL DATE: 7/17/03
DRILLING METHOD: Drivepoint
DRILLER: GeoTech

WOHLERS
NVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING AND WELL INSTALLATION

MONITORING WELL MW-4

TARR, INC.
2429 N. BORTHWICK AVENUE
PORTLAND, OREGON

PROJECT NO.: 03-0005	DATE: 07/18/03
CLIENT: Tarr, Inc.	LOGGED BY: BSM
LOCATION: Portland	DRAFTED BY: KRB
PAGE: 2 of 2	FILE: MW030005

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

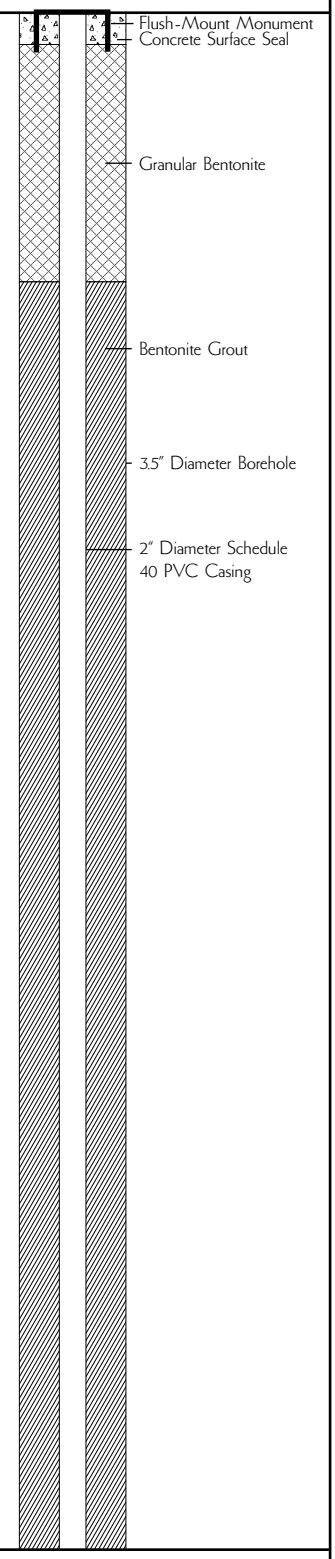
Log Of Well Number **MW-5**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/18/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/18/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): 57.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description
							Asphalt concrete over gravel fill.
	MW-5-1.5		1,450	ND	ND	ODOR = Strong SHEEN = No	SAND; gray-brown, moist, fine-grained, silty, (medium dense).
	MW-5-3		1,250		ND		
							SILT; brown, moist, sandy, (very stiff).
5	MW-5-6		389	ND	ND	ODOR = Yes SHEEN = No	No sand after 5.5 feet. Becomes gray.
	MW-5-7.8		565		ND		
10							Becomes gray-brown.
	MW-5-11.5		400	ND	ND	ODOR = Yes SHEEN = No	
	MW-5-14		14.9		ND		
15							Slightly sandy with trace gravel 15.0 to 17.25 feet.
	MW-5-17		178	ND	ND	ODOR = Yes SHEEN = No	
							SAND; brown, moist, fine-grained, silty, (medium dense).
20	MW-5-20.3		5	ND	ND	ODOR = No SHEEN = No	1-inch to 6-inch sandy silt layers from 20 to 23.5 feet.
	MW-5-23		6		ND		
25							Slightly silty to silty 25.0 to 28.0 feet.
	MW-5-27		11	ND	ND	ODOR = No SHEEN = No	
30	MW-5-32.5		<5	ND	ND	ODOR = No SHEEN = No	
35	MW-5-37.5		21	ND	ND	ODOR = No SHEEN = No	

Well Construction Details



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

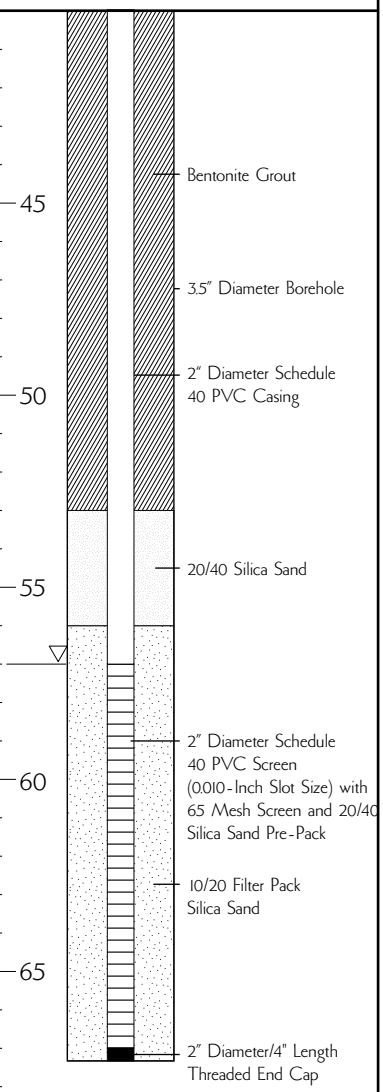
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Well Number **MW-5**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/19/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/19/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): 57.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description
	MW-5-42.5		6	ND	ND	ODOR = No SHEEN = No	
45	MW-5-46.5		<5	ND	ND	ODOR = No SHEEN = No	6" Silt lens; moist, fine, sandy, (stiff).
50	MW-5-52.5		<5	ND	ND	ODOR = No SHEEN = No	Slightly silty 50.0 to 53.0 feet.
55	MW-5-57		35	ND	ND	ODOR = No SHEEN = No	Slightly silty below 55.0 feet.
60	MW-5-57		83	ND	ND	ODOR = No SHEEN = No	Wet below 57.0 feet.
65							
70							Well Completed to 67.4' BGS.
75							



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Remedial Investigation
Portland, Oregon

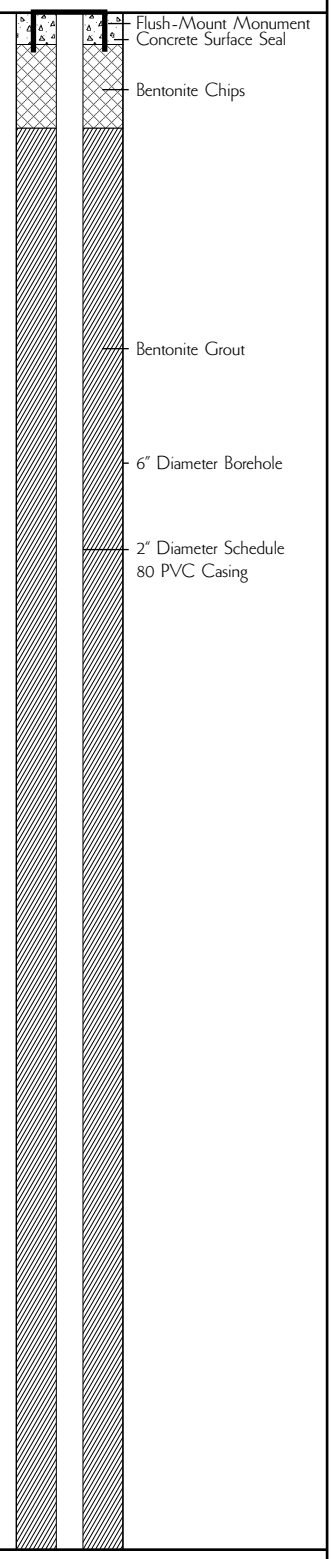
Log Of Well Number **MW-5B**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 6/1/06
Drilling Method: Sonic Rig	Date Finished: 6/2/06
Drilling Equipment: GP300	Logged By: KKB
	Depth to Water (ATD): 57.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description
							Asphalt concrete over gravel fill.
	No Soil Samples Collected for Chemical Analysis						SAND; gray-brown, moist, fine-grained, silty (medium dense).
							SILT; brown, moist, sandy, (very stiff).
5							Becomes brown-gray.
							Becomes gray from 7.0 to 10.0 feet.
10	Soil Samples for Geotechnical Analysis						
							Trace sand from 10.0 to 14.0 feet.
15							
							SAND; brown, moist, fine-grained, silty (medium dense).
20							Becomes slightly silty.
25	Soil Samples for Geotechnical Analysis						Silt lens.
							Trace silt to 31.0 feet.
							4" silt lens; moist, (stiff).
30							4" silt lens; moist, (stiff).
							2" Silt lens.
35							
							2" Silt lens.
							Slightly silty to silty from 39.0 to 41.5 feet.

Well Construction Details



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

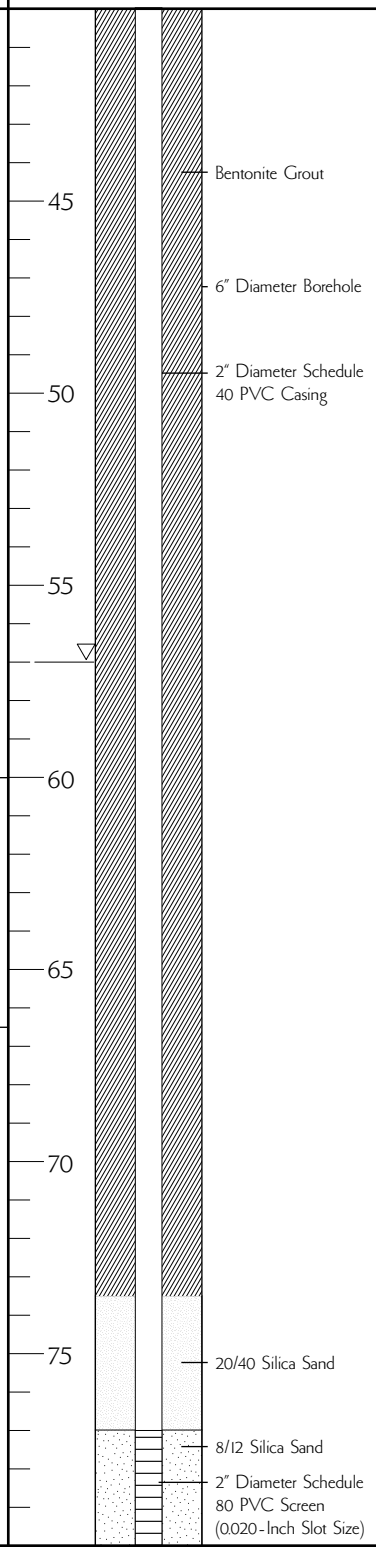
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Well Number **MW-5B**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 6/1/06
Drilling Method: Sonic Rig	Date Finished: 6/2/06
Drilling Equipment: GP300	Logged By: KKB
	Depth to Water (ATD): 57.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description
							3" Silt lens.
45							Silty from 45.0 to 47.0 feet.
							Trace silt to 53.5 feet.
50							
							Silty from 54.0 to 55.0 feet.
55							
							Becomes wet below 57.0 feet.
60							SILT; brown, wet, sandy, (stiff).
65							
							SAND; brown, wet, fine-grained, slightly silty, (medium dense).
			33				
70			38				
			28				Very silty from 72.5 to 73.0 feet.
			11				
75			15				
			10				Very silty from 78.5 to 80.0 feet.



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

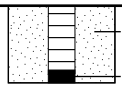
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Well Number **MW-5B**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 6/1/06
Drilling Method: Sonic Rig	Date Finished: 6/2/06
Drilling Equipment: GP300	Logged By: KKB
	Depth to Water (ATD): 57.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description
		X	5				
							Well Completed to 82.0' BGS.
85							
90							
95							
100							
105							
110							
115							



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

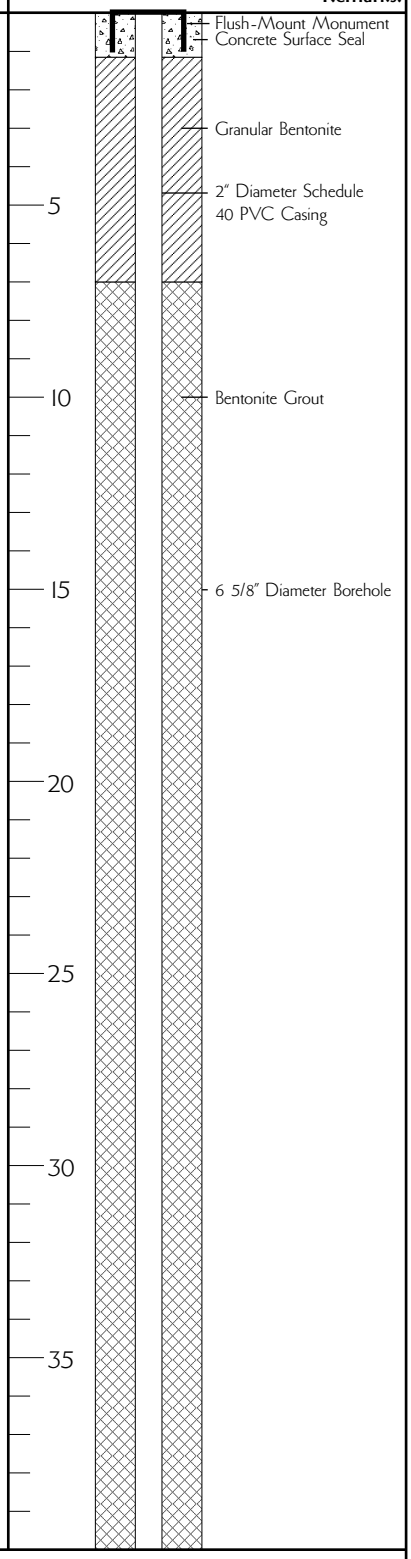
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-6**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/14/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/15/07
Drilling Equipment: Geoprobe 6620	Logged By: KKB/AKF
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Remarks:
					Well installation only. No sampling or logging.
5					
10					
15					
20					
25					
30					
35					



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

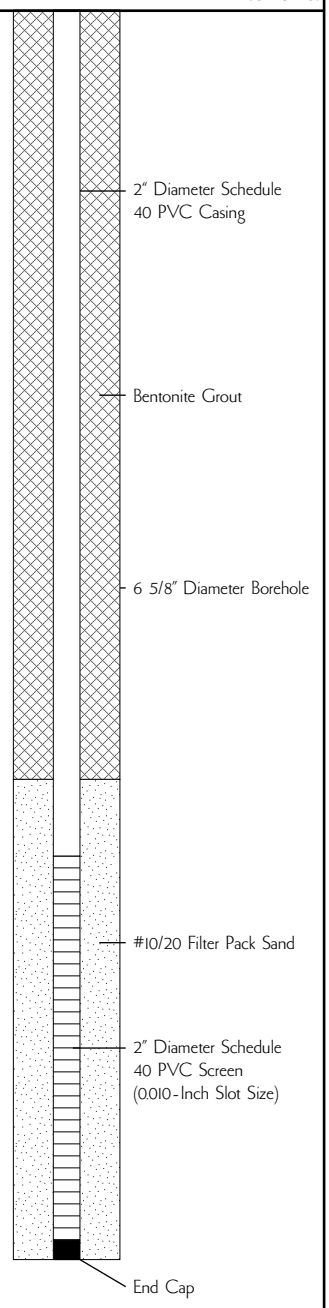
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-6**

Project Number: **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear
Date Started: 8/14/07
Drilling Method: Hollow Stem Auger
Date Finished: 8/15/07
Drilling Equipment: Geoprobe 6620
Logged By: KKB/AKF
Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen		Remarks:
45						
50						
55						
60						
65						
70					Monitoring Well Terminated at 72.5' BGS.	
75						



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

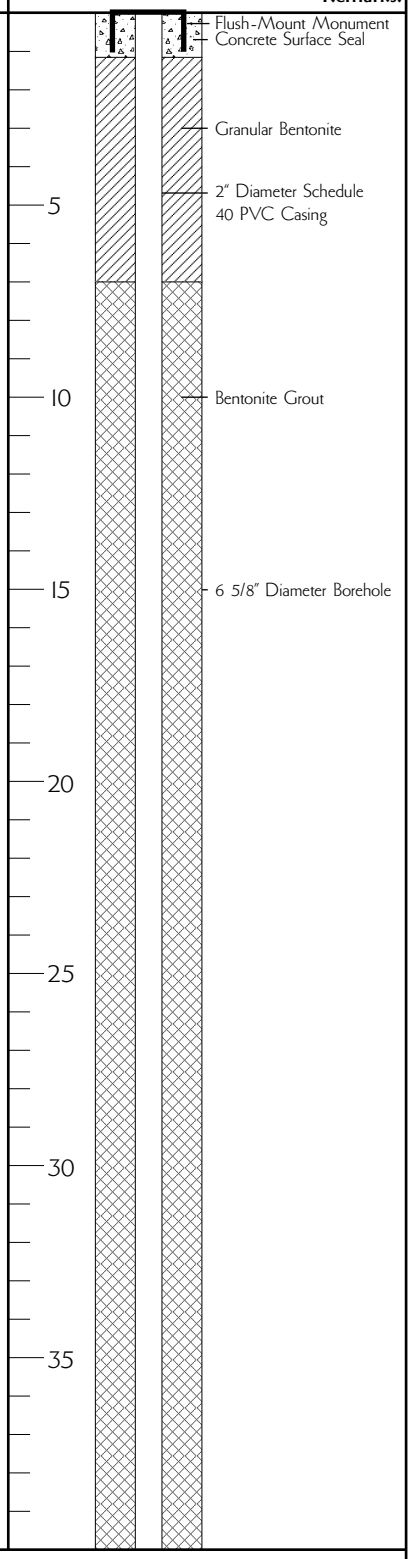
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-7**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/17/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/17/07
Drilling Equipment: Geoprobe 6620	Logged By: AKF
	Depth to Water (ATD): 46.11'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Remarks:
					Well installation only. No sampling or logging.
5					
10					
15					
20					
25					
30					
35					



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

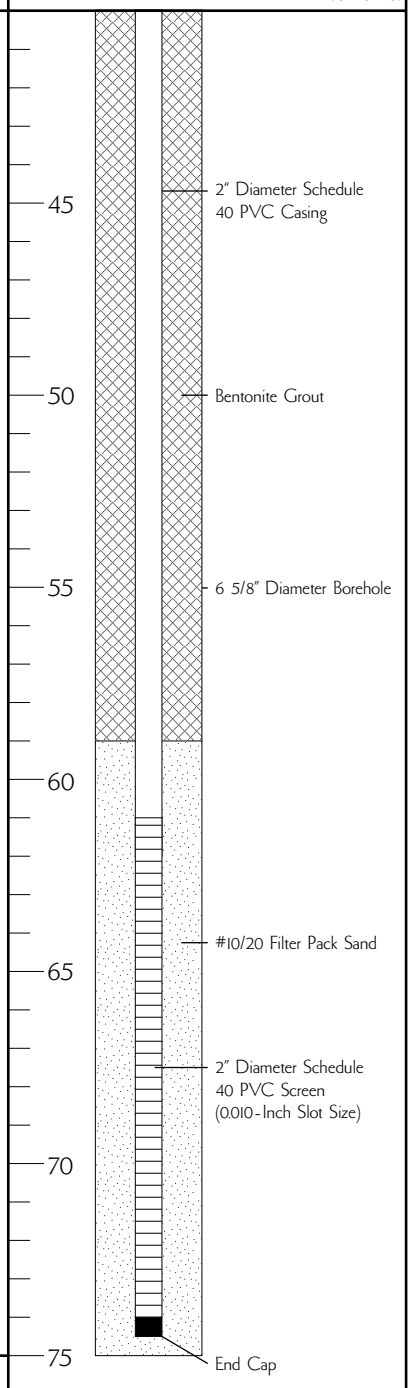
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-7**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/17/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/17/07
Drilling Equipment: Geoprobe 6620	Logged By: AKF
	Depth to Water (ATD): 46.11'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen		Remarks:
45						
50						
55						
60						
65						
70						
75					Monitoring Well Terminated at 75.0' BGS.	



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

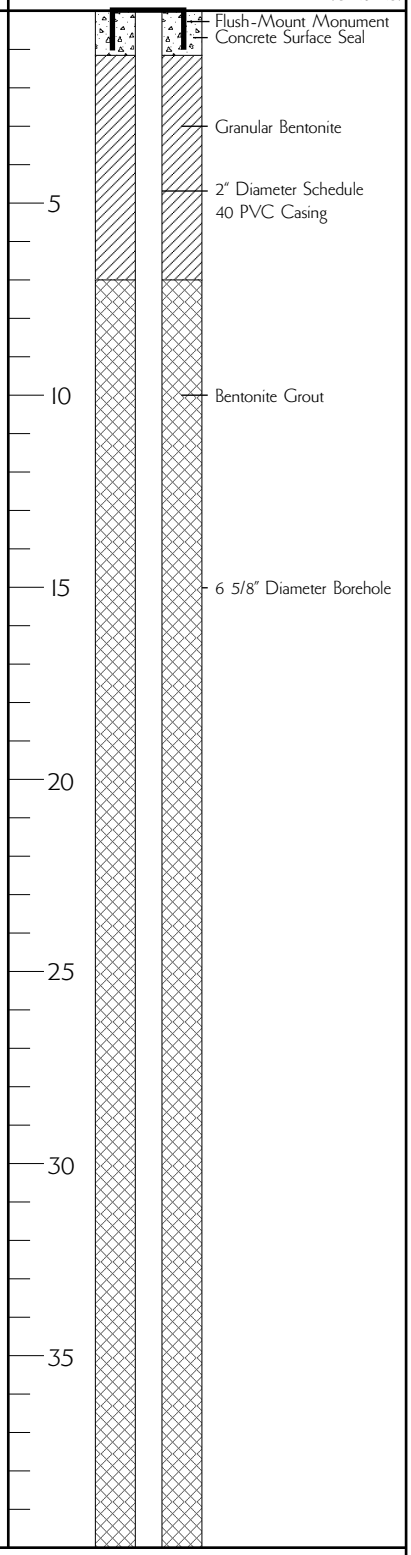
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-8**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/20/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/20/07
Drilling Equipment: Geoprobe 6620	Logged By: AKF
	Depth to Water (ATD): 39.76'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen		Remarks:
					Well installation only. No sampling or logging.	
5						
10						
15						
20						
25						
30						
35						



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

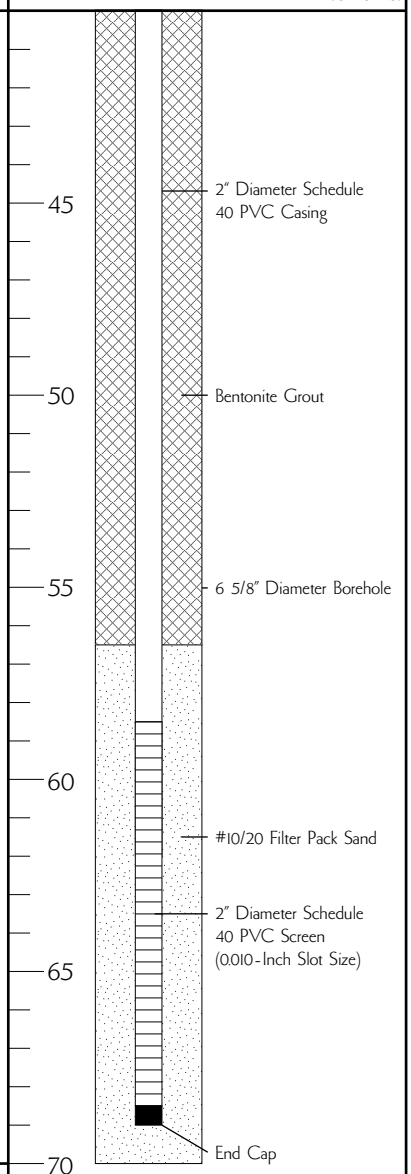
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-8**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/20/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/20/07
Drilling Equipment: Geoprobe 6620	Logged By: AKF
	Depth to Water (ATD): 39.76'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen		Remarks:
45						
50						
55						
60						
65						
70					Monitoring Well Terminated at 75.0' BGS.	
75						



Ash Creek Associates, Inc.
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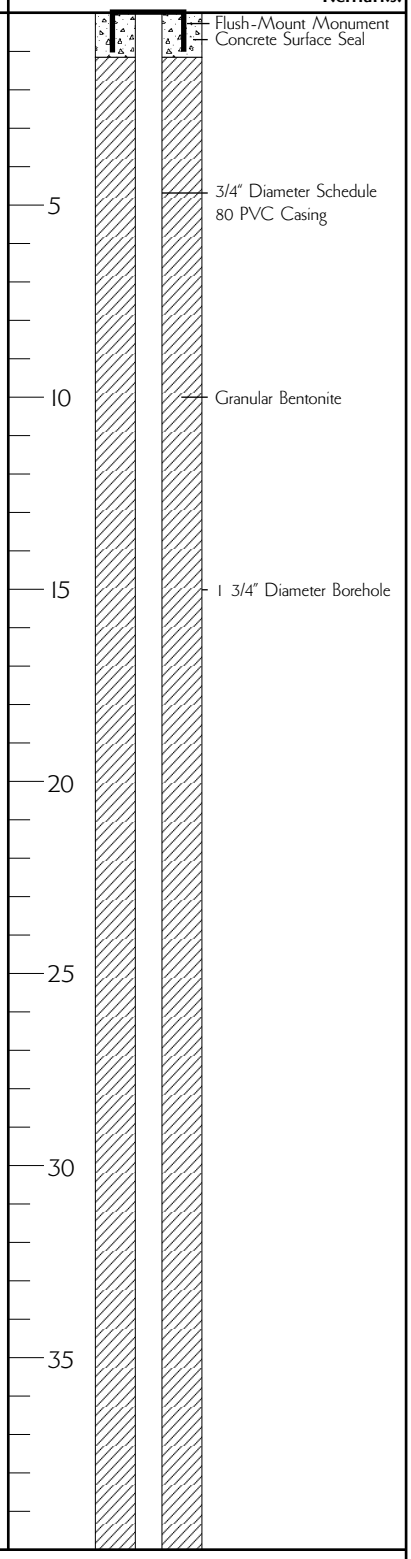
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-9**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 9/11/07
Drilling Method: Direct Push	Date Finished: 9/11/07
Drilling Equipment: Geoprobe	Logged By: JPF
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Remarks:
					Well installation only. No sampling or logging.
5					
10					
15					
20					
25					
30					
35					



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

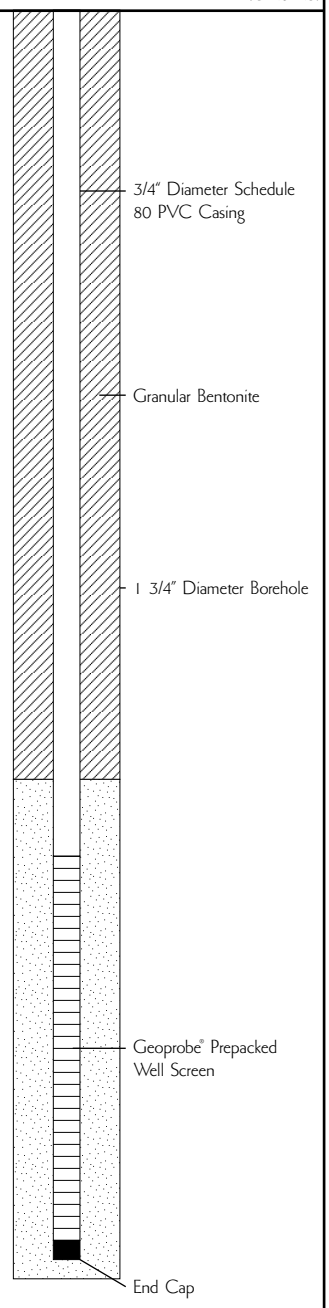
Log Of Exploration Number: **MW-9**

Project Number: **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear
Date Started: 9/11/07
Drilling Method: Direct Push
Date Finished: 9/11/07
Drilling Equipment: Geoprobe
Logged By: JPF
Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	
45					
50					
55					
60					
65					
70					
					Monitoring Well Terminated at 73.0' BGS.
75					

Remarks:



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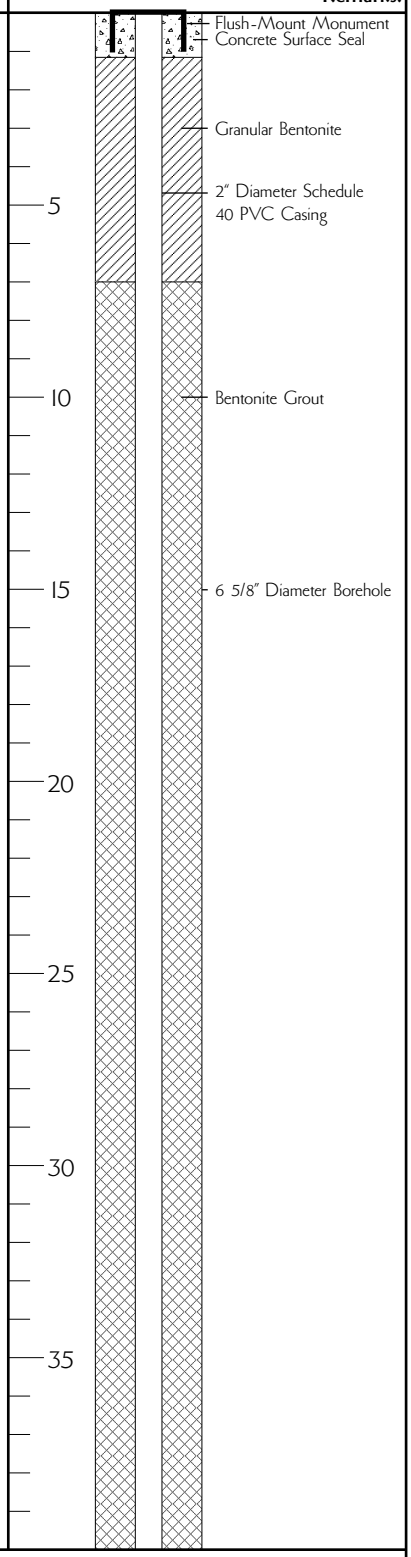
Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-10**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/15/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/15/07
Drilling Equipment: Geoprobe 6620	Logged By: AKF
	Depth to Water (ATD): 28.43'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Remarks:
					Well installation only. No sampling or logging.
5					
10					
15					
20					
25					
30					
35					



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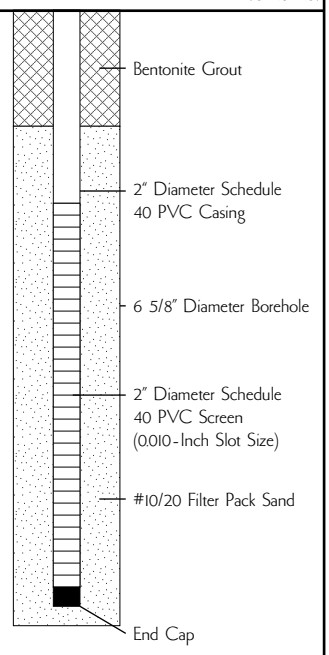
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **MW-10**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/15/07
Drilling Method: Hollow Stem Auger	Date Finished: 8/15/07
Drilling Equipment: Geoprobe 6620	Logged By: AKF
	Depth to Water (ATD): 28.43'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen		Remarks:
45						45
50						50
55						55
60						60
65						65
70						70
75					Monitoring Well Terminated at 75.0' BGS.	75



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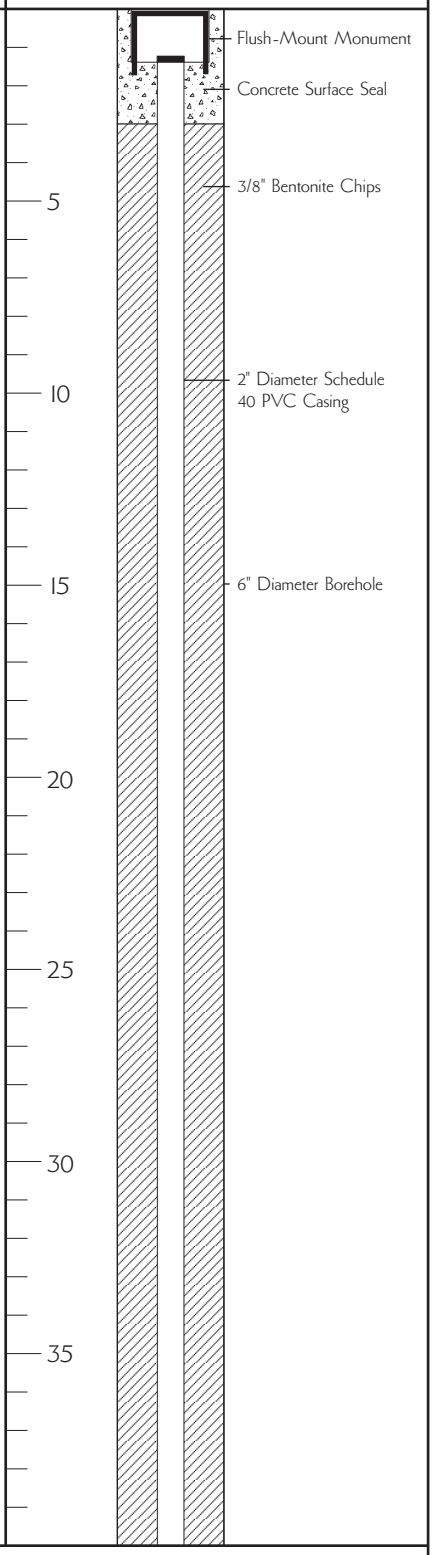
Remedial Investigation
Portland, Oregon

Well Number:	**MW-11**
Project Number:	**1073-09**
Logged By:	S. Simpkins
Date:	November 20, 2010
Site Conditions:	Sunny, 50º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	65.5'
Surface Elevation:	80'

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
5					
10					
15					
20					
25					
30					
35					

Well Construction Details and Notes:



Ash Creek Associates, Inc.
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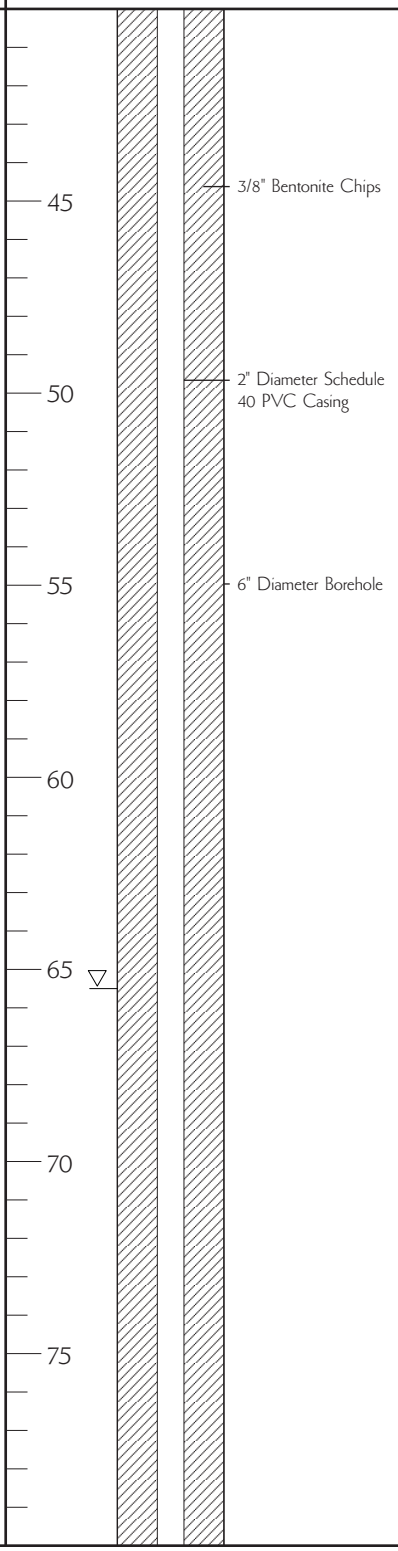
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-11**
Project Number:	**1073-09**
Logged By:	S. Simpkins
Date:	November 20, 2010
Site Conditions:	Sunny, 50º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	65.5'
Surface Elevation:	80'

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
45					
50					
55					
60					
65					
70					
75					

Well Construction Details and Notes:



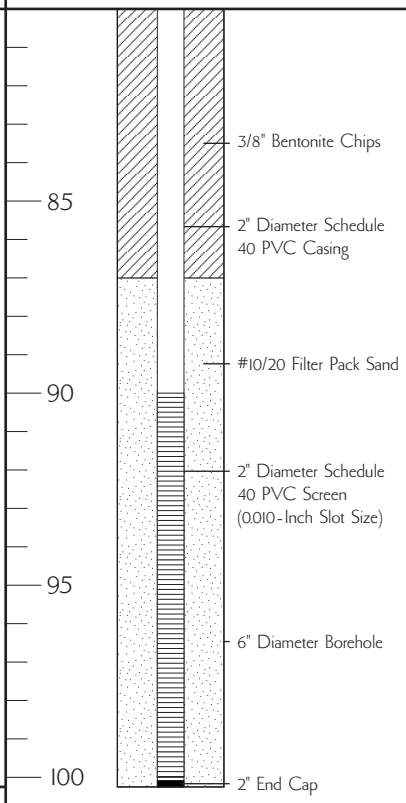
Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-11**
Project Number:	**1073-09**
Logged By:	S. Simpkins
Date:	November 20, 2010
Site Conditions:	Sunny, 50º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	65.5'
Surface Elevation:	80'

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
85					
90					
95					
100					Bottom of Boring at 100.25' BGS.
105					
110					
115					

Well Construction Details and Notes:



Ash Creek Associates, Inc.
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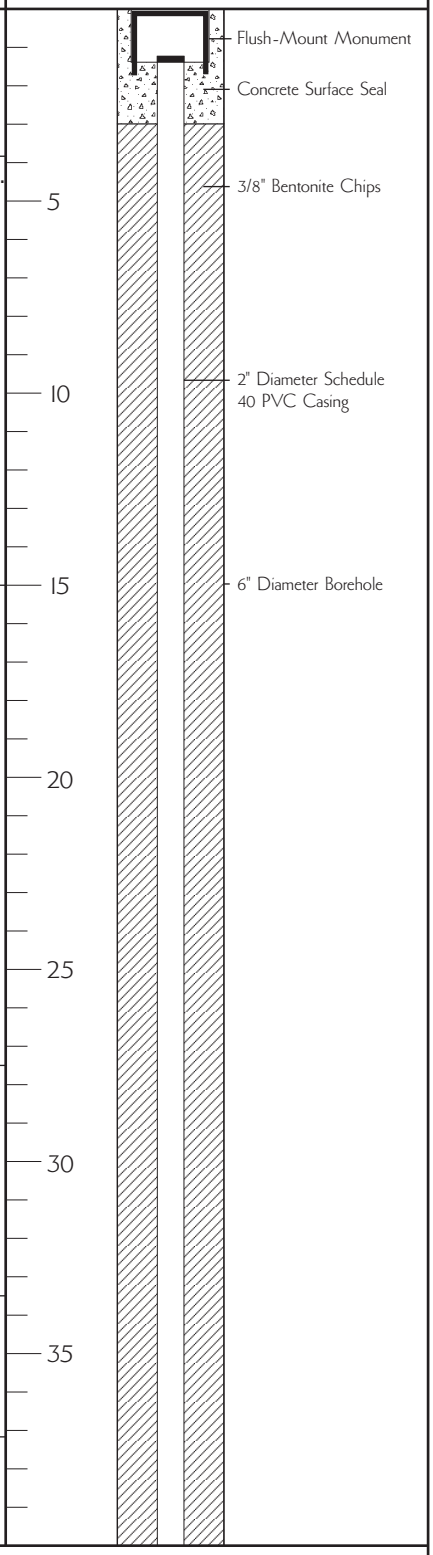
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-12**
Project Number:	**1073-09**
Logged By:	I. Maguire
Date:	October 23, 2010
Site Conditions:	Overcast, Showers
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Compact Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	NM
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Asphalt (3") over gravelly SAND; dark brown, moist, non-plastic, loose, (70% coarse sand, 30% fine to coarse gravel), occasional angular large cobbles.
					Becoming sandy SILT; brown, (85% coarse sand, 15% silt).
			<5	NS	
					SILT (ML); brown, moist, plastic, medium stiff, (95% silt, <5% sand).
5			<5	NS	
			<5	NS	
10			<5	NS	Same as above, fine silt at 10', becoming stiff.
			<5	NS	
15					
			<5	NS	Same as above, fine SILT; medium stiff to soft.
			<5	NS	
20			<5	NS	
			<5	NS	
25					
			<5	NS	
			<5	NS	Silty SAND (SP); brown, low plasticity, medium dense, (90% fine sand, 10% silt).
30					
					Same as above, becoming soft.
			<5	NS	
			<5	NS	
35					Silty SAND (SM); brown, low plasticity, soft to medium dense, (60% fine sand, 40% fine silt).
			<5	NS	Silty SAND (SP); brown, low plasticity, loose, (90% fine sand, 10% silt).

Well Construction Details and Notes:



Ash Creek Associates, Inc.
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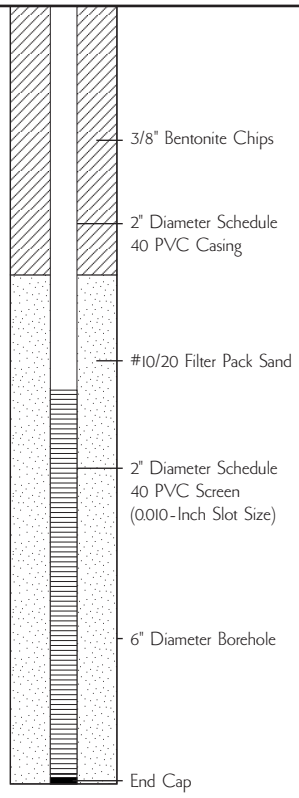
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-12**
Project Number:	**1073-09**
Logged By:	I. Maguire
Date:	October 23, 2010
Site Conditions:	Overcast, Showers
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Compact Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	NM
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					4-Inch silt lens; brown, slightly moist, medium stiff.
					Silty gravel (GM); brown, loose, poorly graded, non-plastic, (70% fine to coarse gravel, 30% silt).
45					Same as above, occasional small cobble.
			<5	NS	
50					
			<5	NS	
55					Sandy, silty gravel (GM); dark brown, poorly graded, non-plastic, (70% fine to coarse gravel, 20% silt, 10% coarse sand).
			<5	NS	Silty gravel (GM), gray, low plastic, medium stiff, fine to coarse gravel, sub-rounded, poorly graded, moist, (60% gravel, 40% silt).
			<5	NS	
60					Bottom of Boring at 60.0' BGS.
65					
70					
75					

Well Construction Details and Notes:



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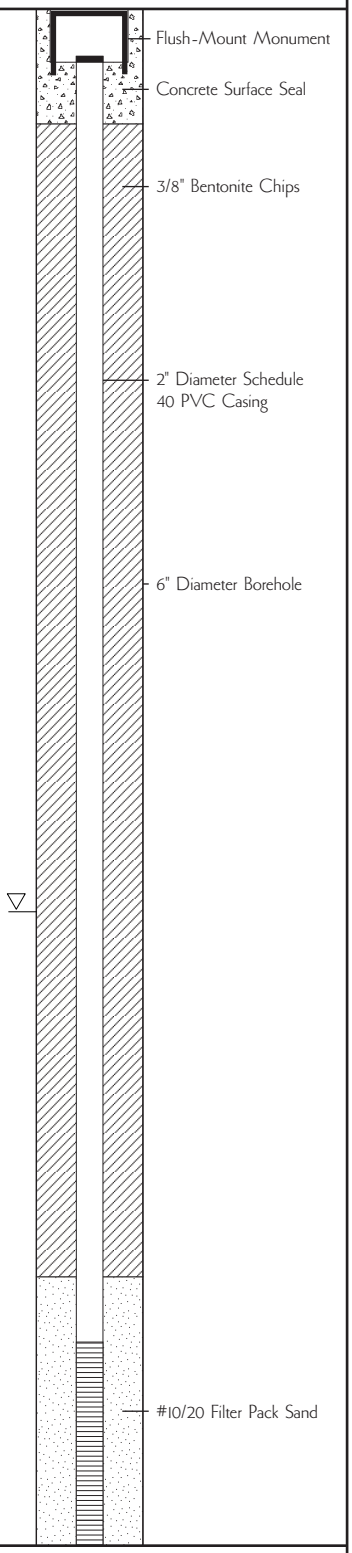
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-13**
Project Number:	**1073-09**
Logged By:	D. Urquhart
Date:	October 22, 2010
Site Conditions:	Cloudy, 50-60º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	23.5'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
			<5	NS	Asphalt (4") over gravel FILL, rounded, Woody debris.
			<5	NS	SILT (ML); brown (7.5YR 8/5), moist, low plasticity, medium stiff, (95% fine, <5% sand).
5			<5	NS	Gray mottling.
			<5	NS	
					4-Inch wet lens; soft.
10			<5	NS	
			<5	NS	
15			<5	NS	Silty SAND (SM); brown (7.5YR 8/5), moist, medium dense, poorly graded, (65% fine sand, 35% silt).
20			<5	NS	
25			<5	NS	Becomes wet.
			<5	NS	Silty gravel (GM); brown, wet, poorly graded, loose, (70% coarse gravel, 20% silt, 10% coarse sand),gravels are rounded to sub-rounded.
			<5	NS	SILT (ML); brown (7.5YR 8/5), moist, low plasticity, (95% fine sand, 5% sand).
30			<5	NS	SAND (SP); dark brown, wet, poorly graded, loose, (95% medium-fine sand, 5% fine).
					SILT (ML); brown (7.5YR 8/5), moist, low plasticity, (95% fine sand, 5% sand).
					Sandy gravel (GP); brown, wet, poorly graded, loose, (70% coarse gravel, 30% medium-fine sand).
35			<5	NS	Sandy gravel with silt (GP); brown, wet, poorly graded, loose, (69% coarse gravel, 30% medium-coarse sand, 10% fines), rounded to sub-rounded.
					Cobbly 3-4" diameter, rounded sub-rounded.
			<5	NS	

Well Construction Details and Notes:



Ash Creek Associates, Inc.
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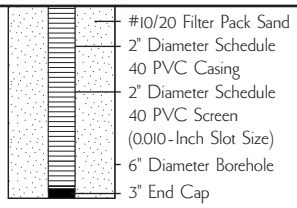
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-13**
Project Number:	**1073-09**
Logged By:	D. Urquhart
Date:	October 22, 2010
Site Conditions:	Cloudy, 50-60º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	23.5'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
			<5	NS	
			<5	NS	
45					Bottom of Boring at 45.0' BGS.
50					
55					
60					
65					
70					
75					

Well Construction Details and Notes:



Ash Creek Associates, Inc.
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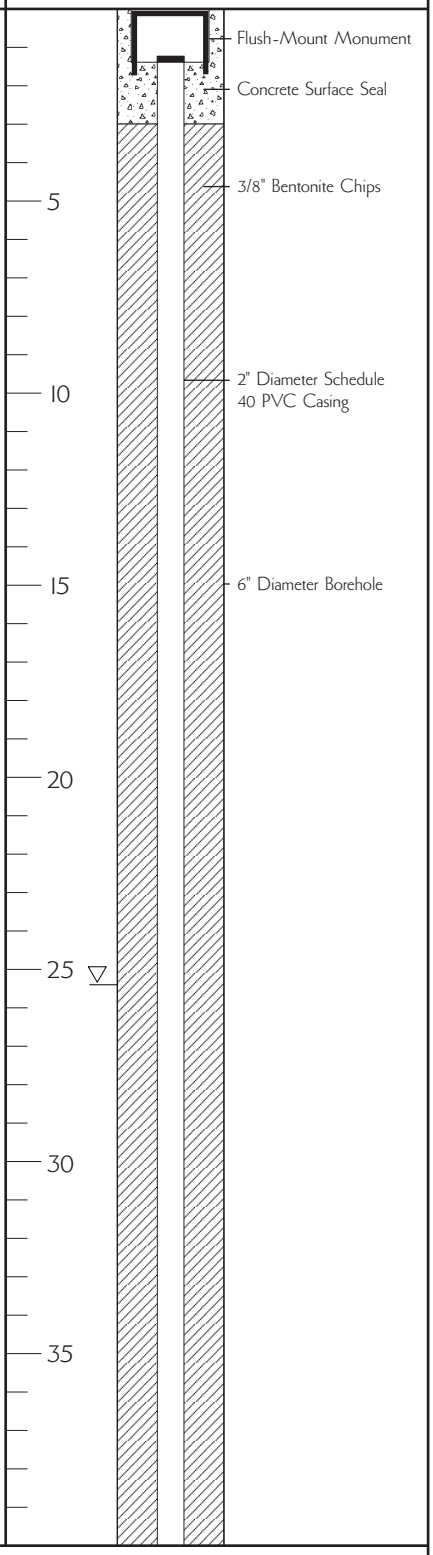
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-14**
Project Number:	**1073-09**
Logged By:	D. Urquhart/I. Maguire
Date:	October 29, 2010-November 1, 2010
Site Conditions:	Sunny, 50º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	25.40'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.

Well Construction Details and Notes:



Ash Creek Associates, Inc.
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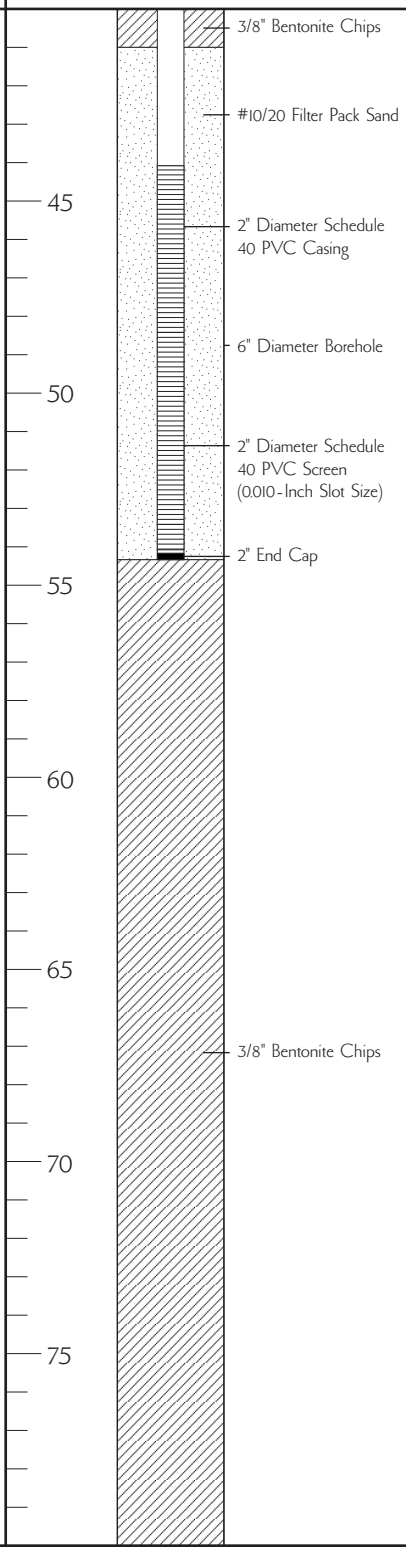
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-14**
Project Number:	**1073-09**
Logged By:	D. Urquhart/I. Maguire
Date:	October 29, 2010-November 1, 2010
Site Conditions:	Sunny, 50º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	25.40'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
45					
50					
55					
60					
65					
70					
75					

Well Construction Details and Notes:



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Remedial Investigation
Portland, Oregon

Well Number:	**MW-14**
Project Number:	**1073-09**
Logged By:	D. Urquhart/I. Maguire
Date:	October 29, 2010-November 1, 2010
Site Conditions:	Sunny, 50º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	25.40'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Well Construction Details and Notes:
					Soil not logged.	3/8" Bentonite Chips
					Loss of drill bit inhibited further advancement.	
85						85
					Bottom of Boring at 88.0' BGS.	
90						90
95						95
100						100
105						105
110						110
115						115

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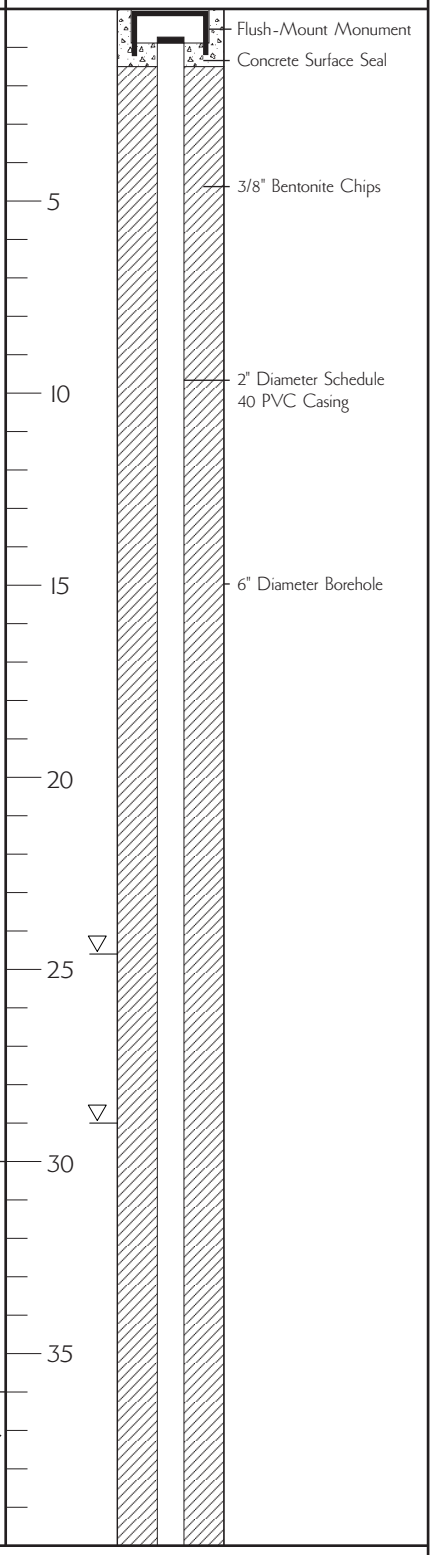
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-15**
Project Number:	**1073-09**
Logged By:	D. Urquhart/M. Whitson
Date:	October 25-27, 2010
Site Conditions:	Rain, 50-60º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	24.60'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
5					
10					
15					
20					
25					
30					SILT (ML); brown, wet, low plasticity, medium stiff, (>95% silt, <5% sand).
35					Silty SAND (SM); brown, poorly graded, medium dense, (85% fine sand, 15% fines). Silty GRAVEL (GM); brown, poorly graded, wet, loose, (80% coarse gravel, 20% fines), rounded to sub-rounded.

Well Construction Details and Notes:



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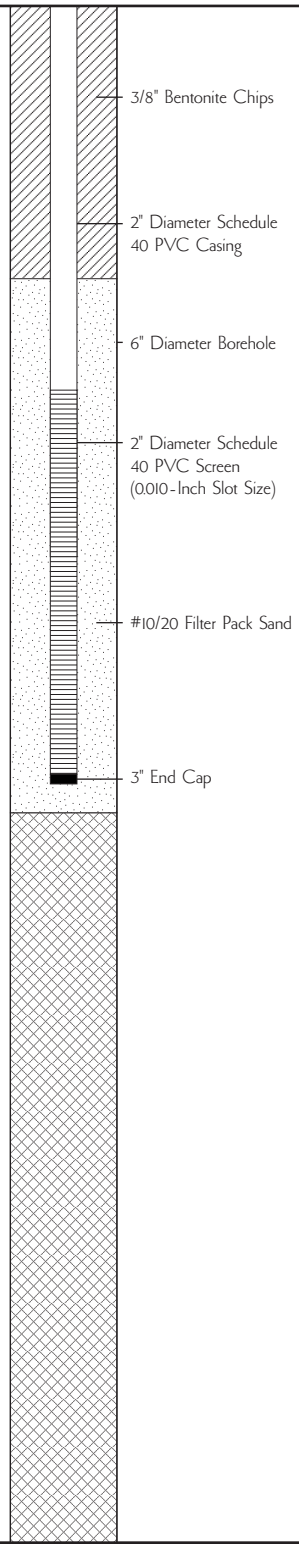
Portland, Oregon

Well Number:	**MW-15**
Project Number:	**1073-09**
Logged By:	D. Urquhart/M. Whitson
Date:	October 25-27, 2010
Site Conditions:	Rain, 50-60º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	24.60'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Silty GRAVEL (GM); brown, poorly graded, wet, loose, (80% coarse gravel, 20% fine), rounded to sub-rounded.
45					Becomes cobbly.
50					
55					Silty, sandy GRAVEL (GM); brown, wet, loose, poorly graded, (60% coarse gravel, 20% coarse sand, 20% fines), rounded to sub-rounded.
					Soil not logged.
60					
65					
70					
75					Silty GRAVEL (GM); dark gray, poorly graded, wet, dense, (60% coarse gravel, 40% silt), rounded to sub-rounded.

Well Construction Details and Notes:



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Remedial Investigation
Portland, Oregon

Well Number:	**MW-15**
Project Number:	**1073-09**
Logged By:	D. Urquhart/M. Whitson
Date:	October 25-27, 2010
Site Conditions:	Rain, 50-60º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	24.60'
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Well Construction Details and Notes:
					Silty GRAVEL (GM); dark gray, poorly graded, wet, dense, (60% coarse gravel, 40% silt), rounded to sub-rounded.	3/8" Bentonite Chips
85						85
					Bottom of Boring at 88.0' BGS.	
90						90
95						95
100						100
105						105
110						110
115						115

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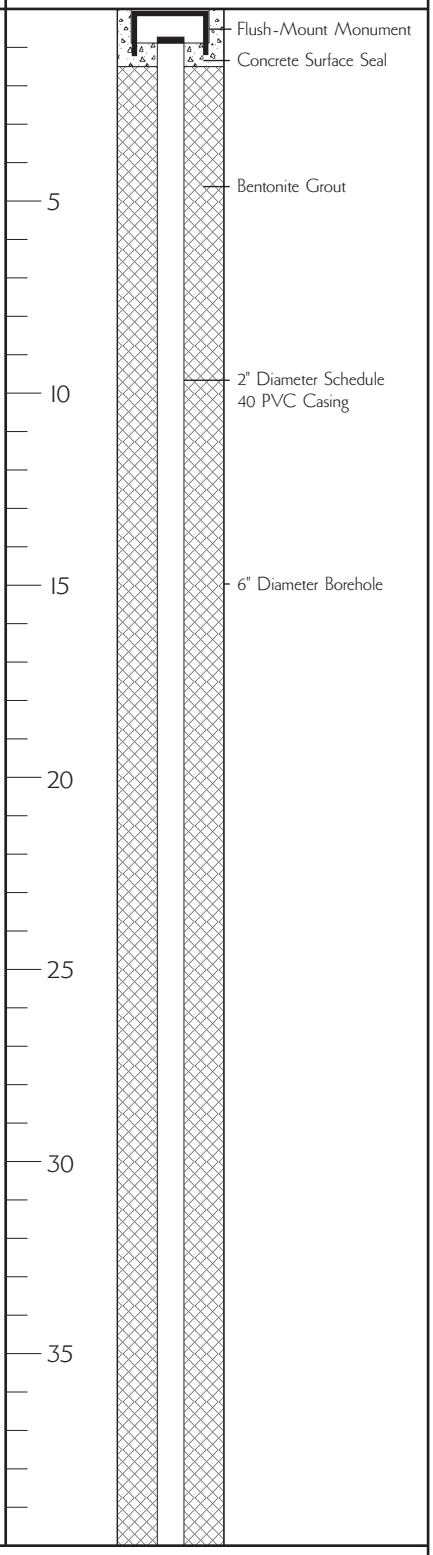
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number:	**MW-16**
Project Number:	**1073-09**
Logged By:	M. Whitson
Date:	October 28, 2010
Site Conditions:	--
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	--
Sampler Type:	--
Depth to Water (ATD):	--
Surface Elevation:	--

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
5					
10					
15					
20					
25					
30					
35					

Well Construction Details and Notes:



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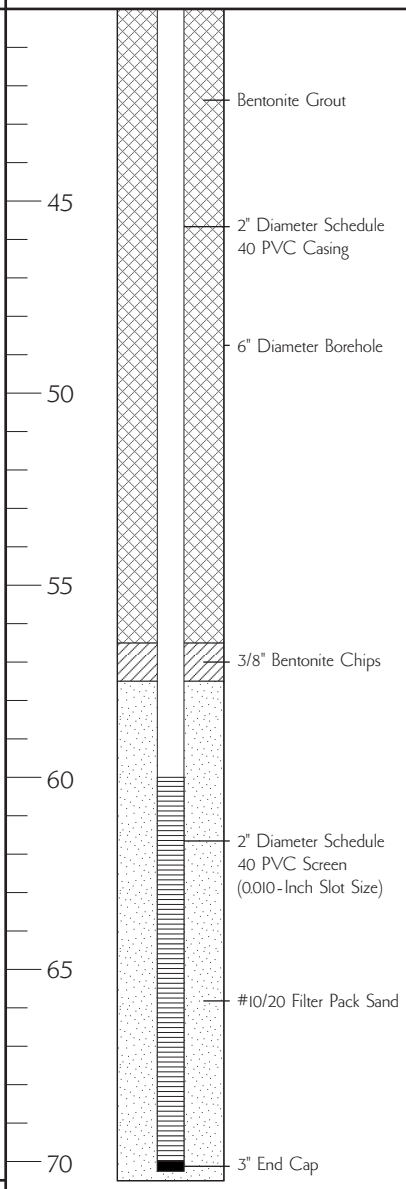
Tarr LLC
Remedial Investigation
Portland, Oregon

Well Number: **MW-16**
Project Number: **1073-09**
Logged By: M. Whitson
Date: October 28, 2010
Site Conditions: --
Drilling Contractor: Cascade Drilling
Drilling Equipment: --
Sampler Type: --
Depth to Water (ATD): --
Surface Elevation: --

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Soil not logged.
45					
50					
55					
60					
65					
70					Bottom of Boring at 88.0' BGS.
75					

Well Construction Details and Notes:



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Remedial Investigation
Portland, Oregon

Log Of Boring Number **B-1**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/22/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): 57.5'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel fill.	No staining over full depth of boring.
	B-1-2		5	ND	ND	ODOR = No SHEEN = No	SILT; brown, moist, gravelly, (stiff) with trace wood debris.	
5							No longer gravelly.	5
	B-1-7.5		6	ND	ND	ODOR = No SHEEN = No		
			12					
10								10
	B-1-12		14	ND	ND	ODOR = No SHEEN = No		
			16					
15							Becomes (medium stiff).	15
	B-1-18		10	ND	ND	ODOR = No SHEEN = No		
			68					
20	B-1-21						SAND; brown, moist, fine-grained, silty, (medium dense).	20
			15	ND	ND	ODOR = No SHEEN = No	SILT; brown, moist, (medium stiff).	
	B-1-23		101				Intermittent sand lenses 20 to 23.5 feet.	
25								25
	B-1-27.5		49	ND	ND	ODOR = No SHEEN = No		
			10					
30								30
	B-1-31.5		14	ND	ND	ODOR = No SHEEN = No	SAND; brown, moist, fine-grained, (medium dense).	
			48					
35							Silty from 35 to 36 feet.	35
	B-1-37.5		69	ND	ND	ODOR = No SHEEN = No		
			15					

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Log Of Boring Number **B-1**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/22/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): 57.5'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-1-42		<5		ND	ODOR = No SHEEN = No		
			51					
45	B-1-46		6		ND	ODOR = No SHEEN = No		45
			10					
50	B-1-52		<5		ND	ODOR = No SHEEN = No		50
	B-1-52.75		<5				3" silt lens.	
55			<5	ND	ND	ODOR = No SHEEN = No	Becomes wet.	55 ▽
	B-1-57		150					
	B-1-58.5							
60							Boring Terminated at 60.0' BGS.	60
65								65
70								70
75								75

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Log Of Boring Number **B-2**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/22/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-2-2		6	ND	ND	ODOR = No SHEEN = No	Asphalt concrete over gravel fill.	No staining over full depth of boring.
							Gray from 1.5 to 2 feet.	
			14		ND		Becomes brown. Gravelly from 2 to 5 feet.	
5	B-2-5.5						SILT; brown, moist, (stiff).	
			7	ND	ND	ODOR = No SHEEN = No		
	B-2-7.5		16		ND			
10							Boring Terminated at 10.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-3**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): 57.5'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-3-2		150 450	ND	ND	ODOR = Yes SHEEN = Slight	Asphalt concrete over gravel fill. SILT; brown, moist, (stiff).	No staining over full depth of boring.
5	B-3-5.5 B-3-7.5		63 19	ND	ND	ODOR = Slight SHEEN = No	6" of brick debris.	
10	B-3-11 B-3-13		37 33	ND	ND	ODOR = No SHEEN = No		
15	B-3-16		59	ND	ND	ODOR = No SHEEN = No	Becomes sandy.	
20	B-3-21 B-3-23		69 10	ND	ND	ODOR = No SHEEN = No	SAND; brown, moist, silty, fine-grained, (medium dense). 9" silt lens.	
25	B-3-27		21 19	ND	ND	ODOR = No SHEEN = No		
30			94 29	ND	ND	ODOR = No SHEEN = No		
35	B-3-36 B-3-37.5		23 13	ND	ND	ODOR = Slight SHEEN = No	SILT; brown, moist, sandy (medium stiff).	

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Log Of Boring Number **B-3**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): 57.5'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-3-41		79		ND	ODOR = Slight SHEEN = No	No longer silty.	
45								45
	B-3-47		59		ND	ODOR = Slight SHEEN = No	2" silt lens.	
50							SILT; brown, moist, fine-grained, (medium dense).	50
	B-3-52		69		ND	ODOR = No SHEEN = No		
			57		ND			
55							Silt lens from 55 to 56.5 feet.	55
	B-3-56		40		ND	ODOR = No SHEEN = No		
	B-3-58		99		ND		Wet after 57.5 feet.	▽
							3" silt lens, brown, moist, (stiff).	
60							Boring Terminated at 60.0' BGS.	60
65								65
70								70
75								75

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Log Of Boring Number **B-4**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/22/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel fill.	No staining over full depth of boring.
	B-4-2		<5			ODOR = No SHEEN = No	SILT; gray, moist, (stiff). Some wood debris.	
5	B-4-6.5		<5 6			ODOR = No SHEEN = No	Becomes brown.	
10							Boring Terminated at 10.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-5**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/19/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/19/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): 60.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
			11		ND	ODOR = Slight SHEEN = No	Asphalt concrete over gravel/sand fill.	No staining over full depth of boring.
	B-5-2.5		54	ND	ND		SILT; gray/brown, moist, sandy, (stiff). No sand.	
5	B-5-6.5		42	ND	ND	ODOR = No SHEEN = No	Becomes brown.	5
10	B-5-11 B-5-12.5		39 14	ND	ND ND	ODOR = No SHEEN = No		10
15	B-5-16.5		7	ND	ND	ODOR = No SHEEN = No	SAND; brown, moist, slightly silty, fine-grained, (medium dense).	15
20	B-5-22		6	ND	ND	ODOR = No SHEEN = No		20
25	B-5-27		20	ND	ND	ODOR = Slight SHEEN = No		25
30	B-5-31 B-5-33		36 8	ND ND	ND ND	ODOR = No SHEEN = No	1-5" silt lenses from 30 to 33.5 feet.	30
35	B-5-37		5	ND	ND	ODOR = No SHEEN = No	No longer silty.	35

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Log Of Boring Number **B-5**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/19/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/19/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): 60.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-5-42		7	ND	ND	ODOR = No SHEEN = No		
45	B-5-46		33		ND	ODOR = No SHEEN = No	Silty below 46 feet.	45
	B-5-48		18	ND	ND		6" silt lens; brown, moist, (medium stiff).	
50							Slightly silty below 50 feet.	50
	B-5-51.5		9	ND	ND	ODOR = No SHEEN = No		
	B-5-54		9		ND			
55	B-5-56		5	ND	ND	ODOR = No SHEEN = No		55
	B-5-58.5		<5		ND			
60							Wet below 60 feet.	60 ▽
	B-5-62		57	ND	ND	ODOR = No SHEEN = No		
	B-5-64		46		ND			
65	B-5-66.5		86		ND	ODOR = No SHEEN = No		65
							6" silt lens; brown, wet, (stiff).	
70	B-5-70.5		54		ND	ODOR = No SHEEN = No		70
	B-5-72.5		195		ND			
75							Silty below 75 feet.	75
	B-5-76.5		27		ND	ODOR = No SHEEN = No		
	B-5-79.5		32		ND		Very silty from 79 to 79.5 feet.	

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Log Of Boring Number **B-5**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/19/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/19/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): 60.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-5-82		<5		ND	ODOR = No SHEEN = No	Becomes slightly silty.	
			<5		ND			
85							Boring Terminated at 85.0' BGS.	85
90								90
95								95
100								100
105								105
110								110
115								115

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Log Of Boring Number **B-6**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/23/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
			112			ODOR = Slight SHEEN = Yes	Asphalt concrete over gravel fill.	
	B-6-3		12				SILT; brown/dark brown, moist, sandy, (stiff).	Rust-colored staining at 2 feet.
5	B-6-6		13			ODOR = No SHEEN = No	Becomes brown/gray/black and gravelly.	
	B-6-8		6				Becomes brown. Some wood debris 7.5 to 9 feet.	
10	B-6-11		8			ODOR = Slight SHEEN = No	Slightly sandy below 10 feet.	Rust-colored staining at 10 feet.
	B-6-13		19					
15	B-6-16		52			ODOR = Slight SHEEN = No		
	B-6-18		11				SAND; brown, moist, fine-grained, (medium dense).	Rust-colored staining at 18 feet.
20	B-5-21		7			ODOR = No SHEEN = No		
25	B-5-26.5		5 13			ODOR = No SHEEN = No		
30							Boring Terminated at 30.0' BGS.	
35								

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Log Of Boring Number **B-7**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/23/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel fill.	
	B-7-2		780		ND	ODOR = Strong SHEEN = Yes	SAND; brown, moist, fine-grained, silty, (dense).	
	B-7-3.5		299		ND		SILT; brown/gray, moist, sandy, (stiff).	Black staining at 2.5 feet.
5	B-6-6		20		ND	ODOR = No SHEEN = No	Becomes brown, no longer sandy.	
	B-6-7.5		8		ND			
10	B-6-11.5		8			ODOR = No SHEEN = Slight	Sandy lenses from 10 to 13 feet.	Intermittent rust-colored staining at 10 feet.
			<5					
15	B-7-16		11			ODOR = No SHEEN = No	SAND; brown, moist, fine-grained, (medium dense). Silt lens from 15.5 to 15.9 feet.	
20	B-7-21.5		5			ODOR = No SHEEN = No	Becomes slightly silty.	
25	B-7-26.5		10			ODOR = No SHEEN = No		
30							Boring Terminated at 30.0' BGS.	
35								

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Log Of Boring Number **B-8**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/13/06
Drilling Method: 4 Foot Sampler (Acetate Lined)
Date Finished: 7/13/06
Drilling Equipment: Jackhammer
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete.	
	B-8-2		8		ND	ODOR = No SHEEN = No	SILT; brown, moist, fine-grained, sandy, (medium stiff).	
	B-8-3.5		<5		ND		SAND; brown, moist, fine-grained, slightly silty from 2.5 to 4 feet.	
5	B-8-5.5		5		ND	ODOR = No SHEEN = No		
	B-8-7.5		6		ND			Rust staining at 7.5 feet.
							Boring Terminated at 8.0' BGS.	
10								
15								
20								
25								
30								
35								

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Log Of Boring Number **B-9**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/13/06
Drilling Method: 4 Foot Sampler (Acetate Lined)
Date Finished: 7/13/06
Drilling Equipment: Jackhammer
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-9-3 B-9-15		145	ND	ND	ODOR = No SHEEN = No	Concrete.	
							Gravel fill.	
			13		ND		SILT; gray/brown, moist, sandy, (medium dense).	Rust-colored staining at 2.5 feet.
5	B-9-5.5		5		ND	ODOR = No SHEEN = No	Glass, ceramic, asphalt, and debris dispersed from 4 to 4.8 feet.	
							Boring Terminated at 6.0' BGS.	
10								
15								
20								
25								
30								
35								

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Log Of Boring Number **B-10**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/12/06
Drilling Method: 4 Foot Sampler (Acetate Lined)
Date Finished: 7/12/06
Drilling Equipment: Jackhammer
Logged By: APS
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete.	No staining over full depth of boring.
							Gravel fill.	
5	B-10-5	X	<5		ND	ODOR = No SHEEN = No	SILT; brown, moist, clayey, (medium dense).	
							Boring Terminated at 6.0' BGS.	
10								
15								
20								
25								
30								
35								

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Log Of Boring Number **B-11**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/23/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel fill.	
	B-11-1.5		<5	ND	ND	ODOR = No SHEEN = No	SILT; brown, moist, (medium stiff). Intermittently sandy from 0.75 to 3.5 feet.	
			<5					
5	B-11-7.5 B-11-6		<5	ND	ND	ODOR = No SHEEN = No		Gray staining at 7.5 feet.
			<5					
10	B-11-11.5		<5	ND	ND	ODOR = No SHEEN = No	Sandy after 12 feet.	
			8					
15							Boring Terminated at 15.0' BGS.	
20								
25								
30								
35								

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Log Of Boring Number **B-12**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/10/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-12-15		<5			ODOR = No SHEEN = No	Concrete.	No staining over full depth of boring.
							SAND; brown, moist, medium-grained, (medium dense).	
5	B-12-5		<5			ODOR = No SHEEN = No	SILT; brown, moist, (medium stiff). Very sandy to 8.2 feet.	
	B-12-9		<5			ODOR = No SHEEN = No	SAND; brown, moist, medium-grained, gravelly, (medium dense).	
10	B-12-10		<5					
							Sandy from 12.5 to 13.5 feet.	
	B-12-14		<5			ODOR = No SHEEN = No		
15								
	B-12-17		5			ODOR = No SHEEN = No	Very sandy after 17 feet.	
20							Boring Terminated at 20.0' BGS.	
25								
30								
35								

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Log Of Boring Number **B-13**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/10/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete over gravel fill.	No staining over full depth of boring.
	B-13-3		<5			ODOR = No SHEEN = No	SAND; brown, moist, medium-grained, (medium dense).	
5	B-13-5		8			ODOR = No SHEEN = No	SILT; brown, moist, slightly sandy, (medium stiff).	
							Trace sand.	
10	B-13-9.5		16			ODOR = No SHEEN = No		
	B-13-13.5		5			ODOR = No SHEEN = No	Sandy and gravelly from 12.75 to 13.25 feet. Very sandy below 13.25 feet.	
15	B-13-17		<5			ODOR = No SHEEN = No		
20							Boring Terminated at 20.0' BGS.	
25								
30								
35								

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Log Of Boring Number **B-14**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 6/10/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 6/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-14-2.5		15			ODOR = No SHEEN = No	Concrete over gravel fill.	
							SAND; brown, moist, coarse-grained, (loose).	
							SILT; brown, moist, slightly sandy, (medium stiff).	
5	B-14-6		13			ODOR = No SHEEN = No	Very sandy (fine-grained) below 6.25 feet.	
10	B-14-10.5		15			ODOR = No SHEEN = No		2" of rust-colored staining at 10 feet.
15	B-14-16		5			ODOR = No SHEEN = No		
	B-14-17.5		9					
20							Boring Terminated at 20.0' BGS.	
25								
30								
35								

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Log Of Boring Number **B-15**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 6/10/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 6/10/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): 58.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete over gravel fill.	No staining over full depth of boring.
	B-15-2		6			ODOR = No SHEEN = No	SAND; brown, moist, coarse-grained, (loose).	
							SILT; brown, moist, sandy, (medium stiff).	
5							Trace fine-grained sand below 5 feet.	5
	B-15-7.5		11			ODOR = No SHEEN = No		
10							Very sandy below 10.5 feet.	10
	B-15-11.5		7			ODOR = No SHEEN = No		
15							3" silt lens.	15
	B-15-16		11			ODOR = No SHEEN = No		
20			24			ODOR = No SHEEN = No		20
	B-15-20-25							
25							SAND; brown, moist, silty, fine-grained, (medium dense).	25
	B-15-26.5		18			ODOR = No SHEEN = No		
30							3" very silty sand lens at 30 feet.	30
	B-15-31.5		15			ODOR = No SHEEN = No		
35								35
	B-15-37		20			ODOR = No SHEEN = No		

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Log Of Boring Number **B-15**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 6/10/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 6/10/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): 58.0'

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-15-41.5		20			ODOR = No SHEEN = No		
45								45
	B-15-46		8			ODOR = No SHEEN = No		
50								50
	B-15-51.5		21			ODOR = No SHEEN = No	4" silt lens.	
55								55
	B-15-56		17			ODOR = No SHEEN = No		
	B-15-58		45				Becomes wet. 5" silt lens at 58.3.	▽
60								60
							Boring Terminated at 60.0' BGS.	
65								65
70								70
75								75

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Log Of Boring Number **B-16**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/11/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/11/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-16-1.5		9			ODOR = No SHEEN = No	Concrete over gravel fill over medium-grained SAND. SILT; brown, moist, (medium stiff).	No staining over full depth of boring.
5	B-16-5		14			ODOR = No SHEEN = No	Becomes (stiff).	
							Very sandy and (medium stiff) from 8 to 12 feet.	
10	B-16-10.5		<5			ODOR = No SHEEN = No		
15	B-16-14		7			ODOR = No SHEEN = No		
							Boring Terminated at 16.0' BGS.	
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Log Of Boring Number **B-17**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/11/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/11/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-17-2		9			ODOR = No SHEEN = No	Concrete over gravel fill over medium- to coarse-grained SAND.	No staining over full depth of boring.
5	B-17-5		11			ODOR = No SHEEN = No	SILT; brown, moist, (medium stiff).	
10	B-17-9		17			ODOR = No SHEEN = No		
15	B-17-13.5		7			ODOR = No SHEEN = No	Boring Terminated at 16.0' BGS.	
20								
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Log Of Boring Number **B-18**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/11/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/11/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete over gravel fill.	No staining over full depth of boring.
	B-18-1.5		<5			ODOR = No SHEEN = No	SILT; brown, moist, trace sand, (medium stiff).	
5	B-18-5.5		5			ODOR = No SHEEN = No	Slightly sandy from 4 to 9.5 feet.	
10	B-18-10		<5			ODOR = No SHEEN = No	SAND; brown, moist, fine-grained, very silty, (medium dense).	
							Boring Terminated at 12.0' BGS.	
15								
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Log Of Boring Number **B-19**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/11/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/11/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-19-1		8			ODOR = No SHEEN = No	Concrete over gravel fill.	No staining over full depth of boring.
							SILT; brown, moist, slightly sandy (fine-grained), (medium stiff).	
5	B-19-4.75		<5			ODOR = No SHEEN = No	Trace sand below 4 feet.	
							Sandy from 8 to 10 feet.	
10	B-19-10		<5			ODOR = No SHEEN = No		
							Boring Terminated at 12.0' BGS.	
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Log Of Boring Number **B-20**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 6/10/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 6/10/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-20-1.5		22			ODOR = No SHEEN = No	Concrete over medium-grained SAND.	No staining over full depth of boring.
	B-20-3.5		15			ODOR = No SHEEN = No	SILT; brown, moist, slightly sandy, fine-grained, (stiff to medium stiff).	
5	B-20-6.5		15			ODOR = No SHEEN = No	Very sandy after 6.3 feet.	
10	B-20-11.5		13			ODOR = No SHEEN = No		
15	B-20-16		10			ODOR = No SHEEN = No		
20	B-20-21.5		<5			ODOR = No SHEEN = No	SAND; brown, moist, very silty, fine-grained, (medium dense).	
25	B-14-20-26.5		11			ODOR = No SHEEN = No		
30							Boring Terminated at 30.0' BGS.	
35								

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Log Of Boring Number **B-21**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/11/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/11/06
Drilling Equipment: Geoprobe 6620DT
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-21-2		8			ODOR = No SHEEN = No	Concrete over gravel fill over medium-grained SAND.	No staining over full depth of boring.
							SILT; brown, moist, (medium stiff).	
5	B-21-5.5		<5			ODOR = No SHEEN = No	SAND; brown, moist, very silty, (medium dense).	
10	B-21-9		<5			ODOR = No SHEEN = No		
							Boring Terminated at 12.0' BGS.	
15								
20								
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30								
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Log Of Boring Number **B-22**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/12/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/12/06
Drilling Equipment: Geoprobe 6620DT
Logged By: APS
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete (cored).	No staining over full depth of boring.
	B-22-3		5			ODOR = No SHEEN = No	SAND; gray, moist, medium-grained, (medium stiff).	
5							SILT; brown, moist, sandy, (medium stiff).	
	B-22-7		<5			ODOR = No SHEEN = No	Becomes very sandy.	
10	B-22-10		6			ODOR = No SHEEN = No		
							Boring Terminated at 12.0' BGS.	
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Log Of Boring Number **B-23**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/12/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/12/06
Drilling Equipment: Geoprobe 6620DT	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete (cored).	No staining over full depth of boring.
							SAND; gray, moist, (medium dense).	
	B-23-3		22			ODOR = No SHEEN = No	SILT; brown, moist, clayey, very sandy, (medium dense).	
5	B-23-7		13			ODOR = No SHEEN = No		
10	B-23-12		11			ODOR = No SHEEN = No		
15	B-23-15		11			ODOR = No SHEEN = No		
	B-23-18		8			ODOR = No SHEEN = No		
20							Boring Terminated at 20.0' BGS.	
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Log Of Boring Number **B-24**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/10/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-24-1		34			ODOR = Yes SHEEN = No	Concrete over gravel fill over medium-grained SAND.	No staining over full depth of boring.
							SILT; brown-gray, moist, (medium stiff). Brick debris at 1.0 foot.	
5	B-24-5.25		9			ODOR = No SHEEN = No		
10	B-24-9.25		<5			ODOR = No SHEEN = No		
							Boring Terminated at 12.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-25**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/10/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-25-1.5		564			ODOR = Yes SHEEN = No	Concrete over gravel fill over medium-grained SAND.	No staining over full depth of boring.
							SILT; brown, moist, (medium stiff).	
5	B-25-5		31			ODOR = No SHEEN = No	Trace sand from 4.0 to 4.5 feet.	
10	B-25-9		<5			ODOR = No SHEEN = No	Very sandy (fine-grained) below 8.0 feet.	
							Boring Terminated at 12.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-26**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/10/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-26-1.5		<5			ODOR = No SHEEN = No	Concrete over gravel fill over medium-grained SAND.	No staining over full depth of boring.
							SILT; brown, moist, with trace sand, (medium stiff).	
5	B-26-5		5			ODOR = No SHEEN = No		
	B-26-7		<5				Very sandy (fine-grained) below 7.0 feet.	
10	B-26-9		<5			ODOR = No SHEEN = No		
							Boring Terminated at 12.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-27**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 7/10/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)	Date Finished: 7/10/06
Drilling Equipment: Geoprobe 6620DT	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-27-1.5		33			ODOR = Yes SHEEN = No	Concrete over gravel fill over medium-grained SAND	No staining over full depth of boring.
							SILT; brown, moist, (medium stiff).	
5	B-27-5		24			ODOR = Yes SHEEN = No	Very sandy (fine-grained) below 4.3 feet.	
	B-27-8.8		18			ODOR = Yes SHEEN = No		
10								
	B-27-13.5		14			ODOR = Yes SHEEN = No		
15								Odor decreasing with depth
	B-27-17.5		9			ODOR = Yes SHEEN = No		
20	B-27-21		<5			ODOR = Yes SHEEN = No		
25	B-27-25.5		<5			ODOR = No SHEEN = No		
							Boring Terminated at 28.0' BGS.	
30								
35								

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Log Of Boring Number **B-28**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/13/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/13/06
Drilling Equipment: Jackhammer
Logged By: APS/KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete over gravel fill.	
	B-28-3		<5		ND	ODOR = No SHEEN = No	SILT; brown, moist, with trace gravel, (medium stiff).	
5			<5					
			<5		ND	ODOR = No SHEEN = No		Rust-colored staining.
							Boring Terminated at 8.0' BGS.	
10								
15								
20								
25								
30								
35								

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Log Of Boring Number **B-29**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/13/06
Drilling Method: 4 Foot Push Probe (Acetate Lined)
Date Finished: 7/13/06
Drilling Equipment: Jackhammer
Logged By: APS
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Concrete over gravel fill.	No staining over full depth of boring.
							SILT; brown, moist, (medium stiff).	
		☒	<5				Gravel, brick remnants, silt.	
5	B-29-6	☒	<5					
							Boring Terminated at 8.0' BGS.	
10								
15								
20								
25								
30								
35								

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Log Of Boring Number **B-30**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/22/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel.	No staining over full depth of boring.
			<5			ODOR = No SHEEN = No	SILT; gray, moist, (stiff).	
			<5				Becomes brown.	
5	B-30-4							
	B-30-7		<5			ODOR = No SHEEN = No	Becomes slightly sandy.	
			<5					
10							Boring Terminated at 10.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-31**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/22/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/22/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
			<5			ODOR = No SHEEN = No	Asphalt concrete over gravel and silt fill.	No staining over full depth of boring.
5	B-31-7		<5			ODOR = No SHEEN = No	SILT; brown, moist, (stiff).	
			<5					
10							Boring Terminated at 10.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-32**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 7/10/06
Drilling Method: Geoprobe 4 Foot Sampler
Date Finished: 7/10/06
Drilling Equipment: 6620DT
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-32-1.5		8			ODOR = No SHEEN = No	Asphalt concrete over gravel fill. SILT; brown, moist, (medium stiff).	No staining over full depth of boring.
5	B-32-5		<5			ODOR = No SHEEN = No		
							Very sandy (fine-grained) below 8.0 feet.	
10	B-32-9		<5			ODOR = No SHEEN = No		
	B-32-11		<5					
							Boring Terminated at 12.0' BGS.	
15								
20								
25								
30								
35								

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Log Of Boring Number **B-33**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/23/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-33-1.25		<5			ODOR = No	Asphalt concrete over gravel fill.	No staining over full depth of boring.
							SILT; brown, moist, (stiff).	
	B-33-3.5		<5			SHEEN = No	Sandy below 3.0 feet.	
5							Boring Terminated at 5.0' BGS.	5
10								10
15								15
20								20
25								25
30								30
35								35

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Log Of Boring Number **B-34**

Project Number **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/23/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)
Date Finished: 5/23/06
Drilling Equipment: Geoprobe 6600
Logged By: KKB
Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
	B-34-1		<5		ND	ODOR = No SHEEN = No	Asphalt concrete over gravel fill.	No staining over full depth of boring.
				ND			SILT; brown, moist, slightly sandy, (stiff).	
	B-34-3.5		<5		ND			
5							Boring Terminated at 5.0' BGS.	
10								
15								
20								
25								
30								
35								

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B-35

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/19/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/19/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel fill.	No staining over full depth of boring.
			<5			ODOR = No SHEEN = No	SILT; brown, moist, (medium stiff).	
			<5				Sandy below 3.0 feet.	
5							Boring Terminated at 5.0' BGS.	
10								
15								
20								
25								
30								
35								

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Log Of Boring Number **B-36**

Project Number **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/19/06
Drilling Method: 5 Foot Push Probe (Acetate Lined)	Date Finished: 5/19/06
Drilling Equipment: Geoprobe 6600	Logged By: KKB
	Depth to Water (ATD): --

Depth, feet	Sample ID	Sample	PID	Dye	UV	Odor/Sheen	Material Description	Remarks:
							Asphalt concrete over gravel fill.	No staining over full depth of boring.
	B-36-3.75 B-36-2		<5			ODOR = No SHEEN = No	SILT; brown, moist, with trace sand and gravel, (medium stiff).	
			<5					
5	B-36-6 B-36-7		<5			ODOR = No SHEEN = No	Sandy (fine-grained) below 5.5 feet.	
			<5					
10							Boring Terminated at 10.0' BGS.	
15								
20								
25								
30								
35								

B-37 and B-38 completed as vapor points. No soil logging or sampling

B-37 and B-38 later renamed to VP-1 and VP-4, respectively

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Log Of Exploration Number: **B-39**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/16/07
Drilling Method: Direct Push	Date Finished: 5/16/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 45.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					Asphalt concrete (4") over base rock.	No staining over full depth of boring.
	VS-39-1		<5	No	SILT with clay; brown, moist, (medium stiff).	
5						
			<5	No	Becoming sandy SILT; moist, (medium stiff).	
10						
15						
20						
25						
30						
35						

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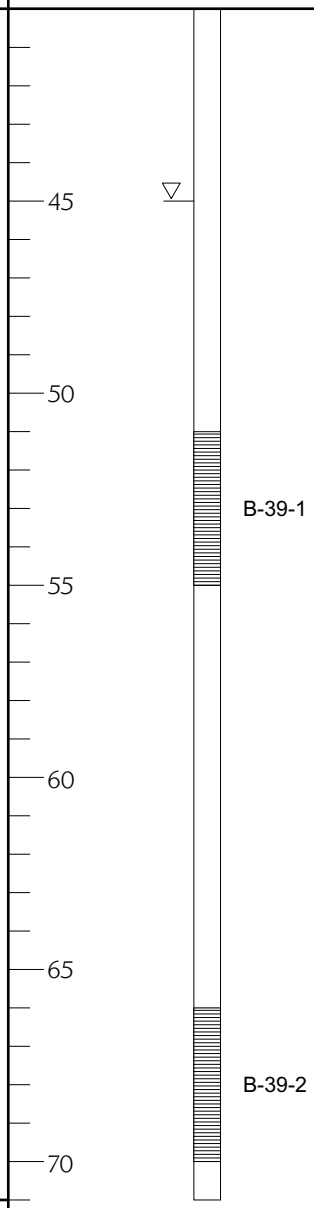
Log Of Exploration Number: **B-39**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/16/07
Drilling Method: Direct Push	Date Finished: 5/16/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 45.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					SAND with silt; wet at 45', (medium dense).	
45					As above.	
50						
55						
60						
65						
70					Boring Terminated at 71.0' BGS.	
75						



Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-40**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/16/07
Drilling Method: Direct Push	Date Finished: 5/16/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	VS-40-1				Soil vapor sample only.	
					Boring Terminated at 3.0' BGS.	
5						5
10						10
15						15
20						20
25						25
30						30
35						35

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-41**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 50.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	VS-41-1		<5	No	SAND with silt; brown, moist, medium-grained, (medium dense).	No staining over full depth of boring.
5			<5	No		
10						
15						
20						
25						
30						
35						

Ash Creek Associates, Inc. Environmental and Geotechnical Consultants	Tarr LLC Remedial Investigation Portland, Oregon	Log Of Exploration Number: **B-41** Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 50.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
45					SAND with silt; brown, medium-grained, (medium dense), poorly sorted.	
50					Becomes wet and (medium dense).	B-41-1
55						
60						B-41-2
65						
70						B-41-3
75						

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-41**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 50.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
						B-41-4
85					Boring Terminated at 85.0' BGS.	85
90						90
95						95
100						100
105						105
110						110
115						115

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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-42**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	VS-42-1				Soil vapor sample only.	
					Boring Terminated at 3.0' BGS.	
5						5
10						10
15						15
20						20
25						25
30						30
35						35

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-43**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	VS-43-1				Soil vapor sample only.	
					Boring Terminated at 3.0' BGS.	
5						5
10						10
15						15
20						20
25						25
30						30
35						35

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-44**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	VS-44-1				Soil vapor sample only.	
					Boring Terminated at 3.0' BGS.	
5						5
10						10
15						15
20						20
25						25
30						30
35						35

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-45**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/17/07
Drilling Method: Direct Push	Date Finished: 5/17/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	VS-44-1				Soil vapor sample only.	
					Boring Terminated at 3.0' BGS.	
5						5
10						10
15						15
20						20
25						25
30						30
35						35

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-46**
Project Number: **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear
Date Started: 5/18/07
Drilling Method: Direct Push
Date Finished: 5/18/07
Drilling Equipment: Geoprobe 6620
Logged By: APS
Depth to Water (ATD): 37.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
			<5	No	Asphalt, gravel, and base rock.	No staining over full depth of boring.
					Medium SAND; brown, moist, (medium dense), poorly sorted.	
5			<5	No		
10						
15			<5	No		
20						
25			<5	No		
30						
35			<5	No	Becomes wet.	

Ash Creek Associates, Inc.
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Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-46**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/18/07
Drilling Method: Direct Push	Date Finished: 5/18/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 37.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					Medium SAND; brown, moist, (medium dense), poorly sorted.	
			5	No		
45						B-46-1
50			<5	No		
55						B-46-2
60					GRAVEL with sand; dark gray, (dense), well sorted.	
65						
70						B-46-3
75					Boring Terminated at 75.0' BGS.	

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-47**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/21/07
Drilling Method: Direct Push	Date Finished: 5/21/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	B-47-1		<5	No	SILT with sand; brown, moist, (medium stiff).	No staining over full depth of boring.
5	B-47-2		5	No		
	B-47-3		13	No		
10	B-47-4		10	No		
	B-47-5		17	No	Medium SAND; brown, moist, (dense), poorly sorted.	
15	B-47-6		7	No		
20					Boring Terminated at 20.0' BGS.	
25						
30						
35						

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-48**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/21/07
Drilling Method: Direct Push	Date Finished: 5/21/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 30.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
			<5	No	Asphalt concrete (5") over base rock (2") over SILT with sand; brown, moist, (soft).	No staining over full depth of boring.
5			<5	No	Becomes (medium stiff).	
10						
15			<5	No	Grades to SAND; brown, moist, medium-grained, (medium dense), poorly sorted.	
20						
25			<5	No		
30			<5	No	Becomes wet.	
35						

B-48-1

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-48**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/21/07
Drilling Method: Direct Push	Date Finished: 5/21/07
Drilling Equipment: Geoprobe 6620	Logged By: APS
	Depth to Water (ATD): 30.0'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					No recovery.	
45					SAND; becoming gray and course, (medium stiff), well sorted.	
			<5	No	GRAVEL; wet, (dense).	
50						B-48-2
55			<5	No		
60						
65						B-48-3
70					Boring Terminated at 70.0' BGS.	
75						

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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-49**
Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/7/07
Drilling Method: Direct Push	Date Finished: 8/7/07
Drilling Equipment: Geoprobe 6600	Logged By: AKF
	Depth to Water (ATD): 25.7'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					Asphalt concrete over gravel fill.	
			<5	No	SAND; brown, moist, fine-grained, (medium dense).	Creosote odor. 2" of wood debris.
					SILT; dark brown, moist, stiff.	
					Becomes gravelly.	
					Becomes light brown to gray.	
5					Becomes orange-brown.	
			<5	No	Moisture increases.	
10					Becomes sandy.	Iron staining.
			<5	No	Becomes very stiff.	
15			<5	No	No sand.	
20					Becomes sandy.	
			<5	No	Becomes wet.	
25					No sand.	Gas-Tec= 0
			<5	No	GRAVEL; brown, wet, well sorted, (medium dense).	
					Becomes silty.	B-49-30
					SILT; light brown, wet, (medium stiff).	
					Becomes sandy.	
30					No sand.	
					Trace gravels.	
			<5	No	GRAVEL; gray, wet, sandy, well sorted, (medium dense).	
					SILT; brown, wet, sandy, (medium stiff).	
					No sand.	
35					GRAVEL; gray, wet, well sorted, (medium dense).	
			<5	No	1-Inch silt lens.	Gas-Tec= 0
					Becomes silty.	
						B-49-40

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-49**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/7/07
Drilling Method: Direct Push	Date Finished: 8/7/07
Drilling Equipment: Geoprobe 6600	Logged By: AKF
	Depth to Water (ATD): 25.7'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
			<5	No	GRAVEL; gray-brown, wet, poorly sorted, (medium dense).	
					Becomes silty.	
45			<5	No		Gas-Tec= 0
						B-49-48
					Boring Terminated at ~48.0' BGS.	
50						
55						
60						
65						
70						
75						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-50**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/7/07
Drilling Method: Direct Push	Date Finished: 8/7/07
Drilling Equipment: Geoprobe 6600	Logged By: AKF
	Depth to Water (ATD): 29.7'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
			<5	No	Asphalt concrete over gravel Fill.	
5					No recovery.	
10			<5	No	SILT; light brown, moist, (medium stiff). Becomes sandy.	Iron staining.
15			<5	No	Moisture increases.	
20			<5	No	Becomes dark brown.	
25			<5	No	Becomes wet with trace gravels.	Gas-Tec= 0 B-50-30
30			<5	No	SAND; brown, wet, silty, fine-grained, (medium dense). SILT; brown, wet, sandy, (medium stiff). No sand. Becomes slightly sandy with trace gravels.	
35					Poor recovery.	Gas-Tec= 0 B-50-40

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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-50**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/7/07
Drilling Method: Direct Push	Date Finished: 8/7/07
Drilling Equipment: Geoprobe 6600	Logged By: AKF
	Depth to Water (ATD): 29.7'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					SAND; brown, wet, fine- to medium-grained , (medium dense). Becomes silty.	
			<5	No	SILT; brown, wet, sandy, (medium stiff). Becomes very sandy. 1-Inch silt lens.	
45			<5	No	GRAVEL; brown-gray, wet, slightly silty, sandy, well sorted, (medium dense). No silt. 3-Inch silt lens.	Gas-Tec= 0.2 ppm B-50-50
50					Boring Terminated at 50.0' BGS.	
55						
60						
65						
70						
75						

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-51**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear	Date Started: 8/8/07
Drilling Method: Direct Push	Date Finished: 8/8/07
Drilling Equipment: Geoprobe 6600	Logged By: AKF
	Depth to Water (ATD): 33.8'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
					Wood bark bedding over gravel Fill.	No odor.
			<5	No	SILT; brown, moist, slightly sandy, (very stiff).	
						Iron staining (~21").
5			<5	No	Becomes (medium stiff).	Iron staining.
					Becomes (very stiff).	
			5	No		
10			<5	No	Becomes sandy and fine-grained.	
					No sand.	
					Sand.	
15			<5	No	No sand.	
					Becomes slightly sandy.	
20			<5	No		
25			<5	No		
30			<5	No	Becomes wet.	Gas-Tec= 0
					Sand content increases.	
					1-Inch silt lens.	B-51-34
					SAND; brown, wet, fine- to medium-grained, (medium dense)	
35					No recovery.	

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **B-51**
Project Number: **1073-00**

Boring Location: See Figure 2
Surface Elevation: Not Surveyed
Drilling Contractor: Boart Longyear
Date Started: 8/8/07
Drilling Method: Direct Push
Date Finished: 8/8/07
Drilling Equipment: Geoprobe 6600
Logged By: AKF
Depth to Water (ATD): 33.8'

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
			<5	No	Poor recovery. SAND; brown, wet, fine- to medium-grained, (medium dense).	Gas-Tec= 0 B-51-44
45						45
50			<5	No	GRAVEL; gray, wet, silty, trace gravels, well sorted, (medium dense). Gravel size increases.	50 Gas-Tec= 0 B-51-54
55			<5	No	Becomes sandy. Silt content increases.	55
60			<5	No	1-Inch silt lens. 0.5-Inch silt lenses (38", 39" and 40"). 1-Inch silt lens.	60 Gas-Tec= 0 B-51-64
65					Boring Terminated at 65.0' BGS.	65
70						70
75						75

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **SV-A**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/2/07
Drilling Method: Direct Push	Date Finished: 5/2/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	SV-A-1		<5	No	Sandy SILT; brown, moist, (medium stiff).	No staining over full depth of boring.
5	SV-A-2		<5	No		
					Boring Terminated at 6.5' BGS.	
10						
15						
20						
25						
30						
35						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **SV-B**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/2/07
Drilling Method: Direct Push	Date Finished: 5/2/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	SV-B-1		<5	No	Sandy SILT; brown, moist, (medium stiff).	No staining over full depth of boring.
	SV-B-2		<5	No		
5	SV-B-3		<5	No		
					Boring Terminated at 6.0' BGS.	
10						
15						
20						
25						
30						
35						

Ash Creek Associates, Inc.
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Tarr LLC
Remedial Investigation
Portland, Oregon

Log Of Exploration Number: **SV-C**

Project Number: **1073-00**

Boring Location: See Figure 2	Surface Elevation: Not Surveyed
Drilling Contractor: Geotech Explorations/Boart Longyear	Date Started: 5/2/07
Drilling Method: Direct Push	Date Finished: 5/2/07
Drilling Equipment: Geoprobe 540	Logged By: APS
	Depth to Water (ATD): --

Depth, feet	Sample ID/Interval	Recovery Length	PID	Sheen	Material Description	Remarks:
	SV-C-1		<5	No	Sandy SILT; brown, moist, medium stiff.	No staining over full depth of boring.
	SV-C-2		<5	No	Small chunks of burned wood.	
5	SV-C-3		<5	No		
					Boring Terminated at 6.5' BGS.	
10						
15						
20						
25						
30						
35						

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, and grain size, and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:
MAJOR CONSTITUENT with additional remarks; color, moisture, minor constituents, density/consistency.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits and push probe explorations is estimated based on visual observation and is presented parenthetically on test pit and push probe exploration logs.

SAND and GRAVEL Density	Standard Penetration Resistance in Blows/Foot
Very loose	0 - 4
Loose	4 - 10
Medium dense	10 - 30
Dense	30 - 50
Very dense	>50

SILT or CLAY Density	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Very soft	0 - 2	<0.125
Soft	2 - 4	0.125 - 0.25
Medium stiff	4 - 8	0.25 - 0.5
Stiff	8 - 15	0.5 - 1.0
Very Stiff	15 - 30	1.0 - 2.0
Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture.
Sl. Moist	Some perceptible moisture, probably below optimum.
Moist	Probably near optimum moisture content.
Wet	Much perceptible moisture, probably above optimum.

Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Sampling Symbols

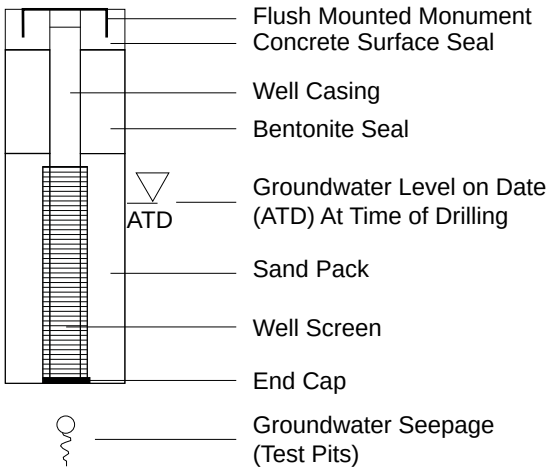
BORING AND PUSH-PROBE SYMBOLS

- Recovery
- No Recovery
- Temporarily Screened Interval
- PID — Photoionization Detector Reading
- W — Water Sample
- Sample Submitted for Chemical Analysis
- NS — No Sheen
- SS — Slight Sheen
- MS — Moderate Sheen
- HS — Heavy Sheen
- BF — Biogenic Film

TEST PIT SOIL SAMPLES

- Grab (Jar)
- Bag
- Shelby Tube

Groundwater Observations and Monitoring Well Construction



Key to Exploration Logs

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Ash Creek Associates, Inc. Environmental and Geotechnical Consultants	Project Number 1073-09	Figure
	September 2009	Key

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-60**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 23-24, 2010
Site Conditions: Sunny, 80s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 57.5'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
					Concrete surface (6") over gravel (3").	
					SILT (ML); brown, moist, low plasticity, medium stiff, (95% silt, <5% sand).	
			<5	NS		
5						5
10			<5	NS		10
					SAND with silt (SM); brown, moist, medium dense, (90% sand, 10% silt)	
			<5	NS		
15						15
20						20
			<5	NS		
25						25
			<5	NS		
30						30
			<5	NS		
35						35
			<5	NS		

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

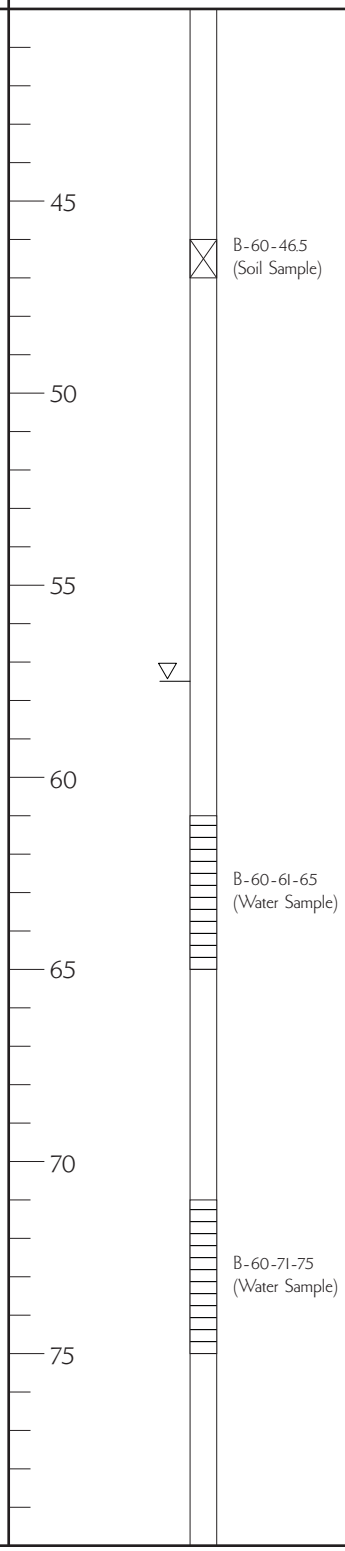
Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-60**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 23-24, 2010
Site Conditions: Sunny, 80s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 57.5'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
			<5	NS	
45			39	NS	
50			34	NS	
			10	NS	8-Inch lens of wet conditions, increased silt, orange mottling.
55			<5	NS	
			<5	NS	
					Becomes wet.
60					
65					
70					
75					

Boring Details and Notes:



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-60**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 23-24, 2010
Site Conditions: Sunny, 80s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 57.5'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
85					Part from water sampler jammed in liner.	B-60-81-85 (Water Sample)
90					GRAVEL (GP); gray to black, wet, poorly graded, subangular, (95% gravel, <5% sands).	B-60-91-95 (Water Sample)
95						
100						B-60-101-105 (Water Sample)
105						B-60-106-110 (Water Sample)
110					Bottom of Boring at 110.0' BGS.	
115						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-61**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 25, 2010
Site Conditions: Sunny, 90s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 60'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
					Concrete surface (5") over gravel (2"). No soil logging above gravel unit.	
5						5
10						10
15						15
20						20
25						25
30						30
35						35

Ash Creek Associates, Inc.
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Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-61**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 24-25, 2010
Site Conditions: Sunny, 90s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 60'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
45						45
50						50
55					Checked for water; moist.	55
60						60 ▽
						B-61-61-65 (Water Sample)
65						65
70						70
						B-61-71-75 (Water Sample)
75						75
					GRAVEL (GP); gray to black, wet, poorly graded, subangular, (90% gravel, <5% sand).	

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Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-61**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 25, 2010
Site Conditions: Sunny, 90s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 60'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
85						B-61-81-85 (Water Sample)
90						B-61-91-95 (Water Sample)
95					Bottom of Boring at 95.0' BGS.	
100						
105						
110						
115						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-62**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 25, 2010
Site Conditions: Sunny, 90s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 25'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
					Concrete surface (5") over gravel (2").	
					SILT (ML); brown, moist, low plasticity, medium stiff, (95% silt, <5% sands).	
5			<5	NS		5
10			<5	NS		10
			<5	NS		
15			<5	NS	Moisture increases.	15
			<5	NS		
20						20
			<5	NS	Sand content increases.	
25					SAND with silt (SM); brown, wet, medium dense, (90% sand, 10% silt).	25 ▽
30						30
						B-62-31-35 (Water Sample)
35						35

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-62**
Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 25, 2010
Site Conditions: Sunny, 90s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 25'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
45					GRAVEL (GP); gray to black, wet, poorly graded, subangular to rounded, (95% gravel; >5% fines).	B-62-41-45 (Water Sample)
					SAND with silt (SM); brown, wet, medium dense, (90% sand; 10% silt).	
50					GRAVEL (GP); gray to black, wet, poorly graded, subangular to subrounded, (95% gravel, >5% fines).	
55						B-62-51-55 (Water Sample)
60						B-62-58-62 (Water Sample)
					Boring Refusal at 62.0' BGS.	
65						
70						
75						

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Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number:	**B-63**
Project Number:	**1073-09**
Logged By:	S. Simpkins
Date:	August 26, 2010
Site Conditions:	Sunny, 70s
Drilling Contractor:	Cascade
Drilling Equipment:	Geoprobe 7730DT
Sampler Type:	5', 1.75" Geoprobe
Depth to Water (ATD):	30'
Surface Elevation:	–

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
					Asphalt (4") over crushed rock (2").	
					SILT (ML); brown, moist, low plasticity, medium stiff, (95% silt, <5% sand).	
5					Moisture increases.	5
			<5	NS		
10			<5	NS	Sand content increases (10% sand, 90% silt).	10
			<5	NS		
15			<5	NS		15
			<5	NS		
20						20
			<5	NS		
25						25
30					SAND with silt (SM); brown, wet, medium dense, (90% sand, 10% silt).	30
35						35
					GRAVEL (GP); gray to black, wet, poorly graded, subangular to rounded, (95% gravel, <5% fines).	

B-63-31-35
(Water Sample)

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Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-63**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 26, 2010
Site Conditions: Sunny, 70s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 30'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
45					No recovery because of gravels.	B-63-41-45 (Water Sample)
50						B-63-51-55 (Water Sample)
55					Bottom of Boring at 55.0' BGS.	
60						
65						
70						
75						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number:	**B-64**
Project Number:	**1073-09**
Logged By:	D. Urquhart
Date:	August 27, 2010
Site Conditions:	Partly Cloudy, 70s
Drilling Contractor:	Cascade
Drilling Equipment:	Geoprobe 7730DT
Sampler Type:	5', 1.75" Geoprobe
Depth to Water (ATD):	21'
Surface Elevation:	–

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
	Hand Auger				Asphalt (6") over gravel FILL.	
					Clayey SILT (ML); brown, moist, stiff, (95% coarse silt, <5% sand).	
5			<5	NS		5
			<5	NS		
10			<5	NS		10
15					Becomes medium stiff, less clayey.	15
			<5	NS		
					Becomes wet.	
20						20
			<5	NS	Becomes saturated.	▽
			<5	NS	Silty SAND (SM); brown, saturated, poorly graded, medium dense, (80% fine sand, 20% silt).	
25						25
						B-64-26-30 (Water Sample)
30						30
35					GRAVEL with sand (GP) ; multi-colored, saturated, poorly graded, coarse grained, (50% subangular to subrounded coarse gravel, 30% medium-coarse sand, 20% fine gravel).	35
					Becomes less sandy (80% gravel,20% sand).	B-64-36-40 (Water Sample)

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Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-64**

Project Number: **1073-09**
Logged By: D. Urquhart
Date: August 27, 2010
Site Conditions: Partly Cloudy, 70s
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 21'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
45					No recovery in gravel.	B-64-46-50 (Water Sample)
50						B-64-51-55 (Water Sample)
55					Boring Refusal at 55.0' BGS.	
60						
65						
70						
75						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-65**

Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 26, 2010
Site Conditions: Partly Cloudy, ~70º
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 25'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
					Asphalt and base rock (10").	
					SILT (ML); brown with orange mottling, moist, medium stiff.	
5			51	NS		
			28	NS		B-65-7-8' (Soil Sample)
10						
			20	NS		B-65-12.5-13.5' (Soil Sample)
15						
			28	NS	Silty SAND with silt (SM); brown, moist, poorly graded, medium dense, (80% sand, 20% silt).	B-65-17-18' (Soil Sample)
20						
			29	NS		B-65-22-23' (Soil Sample)
25					Becomes wet.	▽
					GRAVEL (GP); gray to black, wet, poorly graded, subangular to subrounded, (90% gravel, 10% fines).	
30						
						B-65-31-35 (Water Sample)
35						

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Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-65**
Project Number: **1073-09**
Logged By: S. Simpkins
Date: August 26, 2010
Site Conditions: Partly Cloudy, ~70º
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 21'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
45						45 B-65-41-44 (Water Sample) B-65-44-48 (Water Sample)
					Boring Refusal at 48.0' BGS.	
50						50
55						55
60						60
65						65
70						70
75						75

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-66**
Project Number: **1073-09**
Logged By: D. Urquhart
Date: August 27, 2010
Site Conditions: Mostly Cloudy, 60-70º
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 21.5'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
					Gravel (8").	
			<5		SILT with sand (ML-SM); dark gray, moist, low plasticity, medium stiff, (80% silt, 20% fine sand).	
5						5
			<5		3-Inch sand lens.	
					Wood debris.	
10					SILT (ML); dark grayish brown, moist, low plasticity, stiff, (95% silt, <5% sand), clayey.	10
			<5	NS	Becomes dark gray.	
			<5	NS		
15						15
					Becomes moist.	
					Becomes medium stiff, less clayey, coarse silt.	
			<5	NS		
			<5	NS		
20					Becomes wet.	20
					Silty SAND (SM); dark yellowish brown, wet, poorly graded, medium stiff, (80% fine sand, 20% silt).	▽
					Becomes saturated.	
25						25
30						30
					SAND with silt (SM-ML); dark yellowish brown, saturated, poorly graded, medium stiff, (90% fine sand, 10% silt).	B-66-31-35 (Water Sample)
35						35

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-66**
Project Number: **1073-09**
Logged By: D. Urquhart
Date: August 27, 2010
Site Conditions: Mostly Cloudy, 60-70º
Drilling Contractor: Cascade
Drilling Equipment: Geoprobe 7730DT
Sampler Type: 5', 1.75" Geoprobe
Depth to Water (ATD): 21.5'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes:
					GRAVEL with sand (GP); multicolored, saturated, poorly graded, coarse grained, (60% subangular to subrounded coarse gravel, 20% fine gravel, 20% medium-coarse sand).	B-66-41-45 (Water Sample)
45					No recovery in gravel.	45
50						50 B-66-48-52 (Water Sample)
					Boring Refusal at 52.0' BGS.	
55						55
60						60
65						65
70						70
75						75

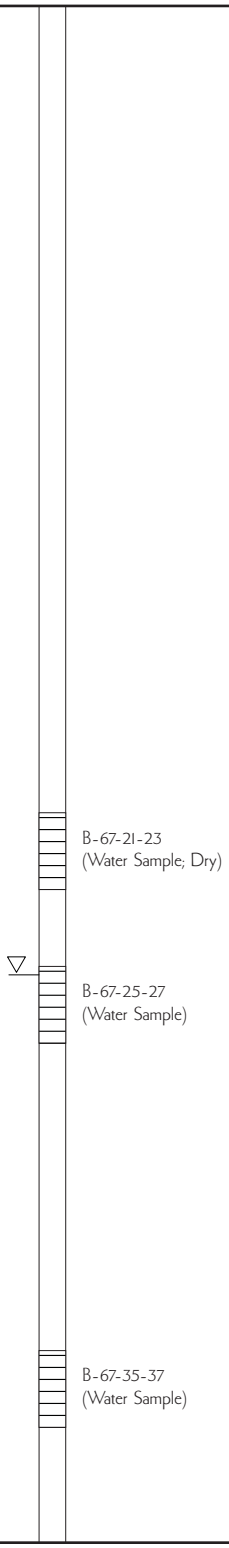
Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number:	**B-67**
Project Number:	**1073-09**
Logged By:	A. Reese
Date:	October 21-22, 2010
Site Conditions:	Overcast, 60º F
Drilling Contractor:	Cascade Drilling
Drilling Equipment:	Sonic
Sampler Type:	Sonic Core Barrel
Depth to Water (ATD):	25.22'
Surface Elevation:	–

Boring Details and Notes:

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description
					Gravel subgrade FILL; gray, dry, loose.
			<5		Gravel/concrete rubble to 2" diameter FILL; gray, loose, dry.
			<5		SILT (ML); gray, slightly moist, slightly clayey, stiff. Becomes pale brown (10YR 5/2).
5			8		
10					
			9		Becomes moist (apparent seepage in the 12-14' range).
15			10		Some gravel in the SILT matrix.
			15		
			20		
20			<5		Grades to very fine SAND.
25			8		Grades to fine SAND. Becomes moist to wet.
			<5		
30					Silty SAND (SM); brown (10YR 4/3), wet, fine to medium-grained, medium dense.
			<5		Interbedded silt/silty sand lenses to 12" thick.
35			<5		
					SANDY GRAVEL (GP); gray (10YR 5/1), wet, dense.



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Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-67**
Project Number: **1073-09**
Logged By: A. Reese/D. Urquhart
Date: October 21-22, 2010
Site Conditions: Overcast, 60º F
Drilling Contractor: Cascade Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic Core Barrel
Depth to Water (ATD): 25.22'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
			<5		Becomes clean gravel/cobbles, rounded, gray (10YR 6/1).	
45			<5			45
					Becomes interbedded sandy gravel and clean gravel/cobbles.	B-67-45-47 (Water Sample)
			<5			
			<5			
50						50
			<5			
55						55
						B-67-55-57 (Water Sample)
			<5		GRAVEL (GP) in dense clayey silt matrix; very dark gray (10YR 3/1), rounded, moist, very dense, (60% gravel, 40% clayey silt).	
60			<5			60
			<5		Same as above, limited matrix (90% gravel); light gray (10YR 5/1), dry.	
65			8		SAND (SP); dark yellowish brown (10YR 3/4), fine to medium-grained, slightly silty, medium dense.	65
			6			B-67-65-67 (Water Sample)
70						70
			<5	NS	Silty GRAVEL (GM); brown, wet, poorly graded, medium dense, (70% coarse gravel, sub-rounded-rounded,30% silt).	
			<5	NS	Silty SAND (SM); grayish brown, wet, poorly graded, medium dense, (40% silt, 60% coarse sand)	
75						75
			<5	NS	Gravely SILT (MR); grayish brown, wet, low plasticity, stiff, (60% silt, 40% coarse gravel), sub-rounded to round.	
			<5	NS	Gravely SILT (MR); grayish brown, wet, poorly graded, very dense, (70% gravely, 30% silt), rounded-sub-rounded.	
			<5	NS	Becomes angular to sub angular.	

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-67**
Project Number: **1073-09**
Logged By: D. Urquhart
Date: October 21-22, 2010
Site Conditions: Overcast, 60º F
Drilling Contractor: Cascade Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic Core Barrel
Depth to Water (ATD): 25.22'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
			<5	NS	Gravelly SILT (ML); grayish brown, wet, low plasticity, stiff, (60% silt, coarse gravel, rounded-sub-rounded).	
			<5	NS		
85						85
			<5	NS	SAND with silt (SP); dark gray, wet, poorly graded, medium dense, (20% fine, 90% fine sand).	
90			<5	NS		90
			<5	NS		
95			<5	NS		95
			<5	NS		B-67-95-97 (Water Sample)
					Boring Refusal at 98.0' BGS.	
100						100
105						105
110						110
115						115

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-68**
Project Number: **1073-09**
Logged By: S. Simpkins
Date: October 20, 2010
Site Conditions: Sunny, 50º F
Drilling Contractor: Cascade Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic Core Barrel
Depth to Water (ATD): 24'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
					Black, dry, asphalt.	
					SAND; light brown, dry, with angular gravel.	
					SILT (ML); brown, moist, slightly plastic.	
5			17	NS		5
			21	NS		
10					Moisture content increases.	10
			22	NS		
					Wet, perched.	
					SILT with sand (ML); brown, wet, slightly plastic, (85% silt, 15% sand).	
15			20	NS		15
					SAND with silt (SP); brown, moist, fine grained, (75% sand, 25% silt).	
20			19	NS		20
					Wet.	
25					SAND with silt (SP); brown, wet, fine grained, (85% sand, 15% silt).	25 ▽ B-68-25-27 (Water Sample)
30						30
					Silt content increases (75% sand, 25% silt).	
					SAND with silt (95% sand, 5% silt).	
35						35 B-68-35-37 (Water Sample)

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-68**
Project Number: **1073-09**
Logged By: S. Simpkins
Date: October 20, 2010
Site Conditions: Sunny, 50º F
Drilling Contractor: Cascade Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic Core Barrel
Depth to Water (ATD): 24'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
			<5		SAND (SW); gray, wet, well-graded, (95% coarse sand).	
					Gravel with sand (GP); gray, wet, poorly graded, (75% gravel, 25% sand).	
45						B-68-45-47 (Water Sample)
50						
55						B-68-55-57 (Water Sample)
60						
					SAND (SP) with gravel; brown, wet, poorly graded, (70% coarse sand, 30% gravel).	
65					GRAVEL (1-3" diameter) with sand (GP); brown, wet, poorly graded, (70% gravel, 30% sand), sub-rounded.	B-68-65-67 (Water Sample)
70					SAND (SW) with gravel; brown, wet, well-graded, (80% coarse sand, 20% gravel), sub-rounded (1-3" diameter).	
75						

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Reconnaissance Groundwater Sampling
Tarr, Inc.
Portland, Oregon

Boring Number: **B-68**
Project Number: **1073-09**
Logged By: S. Simpkins
Date: October 20, 2010
Site Conditions: Sunny, 50º F
Drilling Contractor: Cascade Drilling
Drilling Equipment: Sonic
Sampler Type: Sonic Core Barrel
Depth to Water (ATD): 24'
Surface Elevation: –

Depth, feet	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Lithologic Description	Boring Details and Notes
					GRAVEL with sand (GP); brown, wet, poorly graded, (75% gravel, 25% coarse sand).	
85						85
90					SAND (SW); gray to brown, wet, well-graded, (95% coarse sand, <5% fines).	90
95						95 B-68-95-97 (Water Sample)
					Boring Refusal at 97.0' BGS.	
100						100
105						105
110						110
115						115

Appendix C

Laboratory Data and Data Quality Review

Appendix C – Laboratory Data Quality Review

1.0 Introduction

This appendix documents the results of a quality assurance (QA) review of the following analytical data for samples collected for the ongoing Remedial Investigation (RI):

QA review for quarterly monitoring samples is completed and included within each quarterly groundwater monitoring report.

Test America performed the soil/groundwater sample analyses and Air Toxics LTD performed the air sample analyses, both under subcontract to Ash Creek Associates, Inc. (Ash Creek). Copies of the analytical laboratory reports are also included in this appendix. The data are acceptable for use.

2.0 Analytical Methods

Chemical analyses on soil and groundwater samples consisted of volatile organic compounds (VOCs) by EPA Method 8260B. Chemical analyses on air samples consisted of VOCs by EPA Method Modified TO-15.

3.0 Quality Assurance Review

The following criteria were evaluated in the standard data quality review process:

Soil and ground water samples:

- Holding times;
- Method blanks;
- Surrogate recoveries;
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries; and
- Laboratory and duplicate relative percent difference (RPD).

Air samples:

- Holding times;
- Method blanks;
- Surrogate recoveries;
- LCS recoveries;

- Continuous calibration verification (CCV) recoveries; and
- Laboratory and duplicate RPD.

3.1 Laboratory Quality Control/Quality Assurance

The laboratory quality control/quality assurance (QC/QA) indicated the following:

PTJ0676 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits. As no detected compounds were flagged, no data were qualified in the table.

PTJ0994 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits. The sample containers for B-67 (97') contained headspace and the sample was flagged with "P-HS". The laboratory noted that these results should be used qualitatively because the sample may be biased low.

PTJ0744 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits. The sample containers for B-67 (65-67') and B-67 (45-47') contained headspace and the sample was flagged with "P-HS". The laboratory noted that these results should be used qualitatively because the samples may be biased low.

PTJ1064 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits. The sample containers for MW-14 (50') and MW-14 (60') contained headspace and the sample was flagged with "P-HS". The laboratory noted that these results should be used qualitatively because the samples may be biased low.

PTJ10791 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were generally within laboratory control limits. 1,1,-dichlorothene (1,1,-DCE) in the LCS was outside control limits. Other RPDs were within control limits. None of the QA variances were associated with the target analytes, so no data were qualified in the table because of the low recovery. The sample containers for MW-15 (88') contained headspace and the sample was flagged with "P-HS". The laboratory noted that these results should be used qualitatively because the samples may be biased low.

PTH0873 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits.

PTH0761 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits. Chloroethane was flagged with "C" for calibration verification recovery above the MCL but was not detected the data was therefore not impacted.

PTK0069 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS/LCSD recoveries were within laboratory control limits. RPDs were within control limits. As no detected compounds were flagged, no data were qualified in the table.

PTH0936 (Water)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate was within laboratory control limits. Vinyl chloride recovery was below the quality control limits in the LCS and MS therefore the non-detected compound was flagged with "UJ" to indicate the low bias results.

0705129 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. The CCV was within control limits. The LCS was within control limits. A laboratory duplicate was not run due to the small number of samples.

07054546 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. The CCV was within control limits. The LCS was within control limits. The laboratory duplicate was within control limits. The Freon tracer gas was detected at saturation levels. These data were not used in the risk assessment.

0705457 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. The CCV was within control limits. The LCS was within control limits. A laboratory duplicate was not run due to the small number of samples. The Freon tracer gas was detected at saturation levels. These data were not used in the risk assessment.

0905684R1 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. The CCV was within control limits. The LCS was within control limits, except for compounds 1,2,4-trichlorobenzene and hexachlorobutadiene. These compounds were not detected, so the data was not flagged. A laboratory duplicate was not run due to the small number of samples.

0909291 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. The CCV was within control limits. The LCS was within control limits, except for compounds Freon 113 and 2-propanol. These compounds were not detected so the data was not flagged. A laboratory duplicate was not run due to the small number of samples.

1005544B (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. MTBE and alpha-chlorotoluene exceeded the quality control limits in the CCV; therefore, those

non-detected compounds were flagged with "UJ" to indicate the low bias associated in the CCV. In addition, bromomethane exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged. The surrogate and RPDs were within control limits. Ethanol, acetone, and 2-proponal exceeded the instrument calibration range and were flagged with an "E."

1008553D (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. Bromomethane exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged. RPDs were within control limits. Ethanol, acetone, and 2-proponal exceeded the instrument calibration range and were flagged with an "E."

1008544D (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. Alpha-chlorotoluene exceeded the quality control limits in the CCV, so the non-detected compound was flagged with "UJ" to indicate the low bias associated in the CCV. In addition, bromomethane and 1, 2-dicloroethane exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged.

0907457 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. MTBE exceeded the quality control limits in the CCV, so the non-detected compound was flagged with "UJ" to indicate the low bias associated in the CCV. In addition, 1,2,4-trichlorobenzene and hexachlorobutadiene exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged. 2-propanol exceeded the instrument calibration range and was flagged with an "E."

1008553A (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. 2-butanone and 2-hexanone exceeded the quality control limits in the CCV; therefore, the non-detected compound was flagged with "UJ" and the detected compounds were flagged with "J" to indicate the low bias associated in the CCV. In addition, 1,1-dichlorethene exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged. Ethanol and acetone exceeded the instrument calibration range and was flagged with "E."

1005544A (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. Ethanol, 2-propanol, and 4-methyl-2-pentanone exceeded the quality control limits in the CCV, so the non-detected compound was flagged with "UJ" and the detected compounds were flagged with "J" to indicate the low bias associated in the CCV. Acetone and 2-propanol exceeded the instrument calibration range and were flagged with "E."

1008553E (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and CCV recoveries were within laboratory control limits. 1,2,4-trichlorobenzene exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged. Ethanol, acetone, and 2-propanol exceeded the instrument calibration range and were flagged with "E."

1005544C (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS recoveries were within laboratory control limits. 4-methyl-2-pentanone exceeded the quality control limits in the CCV, so the non-detected compound was flagged with "UJ" to indicate the low bias associated in the CCV. 2,2,4-trimethylpentane was flagged with "J" for an estimated value.

1005544E (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS recoveries were within laboratory control limits. Ethanol and 2-propoanl exceeded the quality control limits in the CCV, so the non-detected compound was flagged with "UJ" to indicate the low bias associated in the CCV.

0907297 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS recoveries were within laboratory control limits. 1,2-dichloroethane exceeded the quality control limits in the CCV, so the compound was flagged with "J" indicating an estimated value. Ethanol exceeded the instrument calibration range and was flagged with "E." RPDs were within control limits.

1008553B (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, CCV, and LCS, recoveries were within laboratory control limits. RPDs were within control limits.

1008553C (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, CCV, and LCS recoveries were within laboratory control limits. RPDs were within control limits. Ethanol exceeded the instrument calibration range and was flagged with "E."

0809137 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, CCV, and LCS recoveries were within laboratory control limits. RPDs were within control limits.

0809503A (Air)

Volatile Organic Compounds. Required holding times were met. Samples A-2 and VP-4 were received at the lab at ambient pressure. No method blank contamination was detected. The surrogates were within laboratory control limits. The CCV recoveries exceeded laboratory control limits for chloromethane in the TO-15 GC/MS SIM method and for bromomethane in the TO-15 GC/MS method. Chloromethane was flagged "J" indicating it was estimated but bromomethane was not detected and therefore not flagged. Bromomethane, Freon 113, and 1,1-DCE were above the laboratory control limits in the LCS but were not flagged in the data because the corresponding CCV recovery was in range. Ethanol, acetone, and 2-propanol were flagged with "E" indicating they exceed the instrument calibration range in several samples.

0809503B (Air)

Volatile Organic Compounds. Required holding times were met. Samples A-1, VP-4A, VP-2A, and VP-9 were received at the lab at ambient pressure. No method blank contamination was detected. The surrogates were within laboratory control limits. The CCV recoveries exceeded laboratory control limits for heptane and 1,2-DCA. Heptane was flagged with a "J" indicating it is estimated but 1,2-DCA was not detected. In addition, benzene exceeded the quality control limit in the LCS, but because the CCV recovery was in range the data was not flagged. Ethanol and acetone were flagged with "E" indicating they exceed the instrument calibration range in several samples.

0903664A (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. Samples A-2 and VP-4 were received at the lab at ambient pressure. The surrogate, CCV, and LCS recoveries were within laboratory control limits. RPDs for lab duplicates for VP-2 and VP-4 were within control limits except for acetone which was not detected in the VP-4 lab duplicate. Acetone was flagged with "J" indicating it is estimated because the detection was less than the reporting limit.

0907105AR1 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, CCV, and LCS recoveries were within laboratory control limits. RPDs for lab duplicates were within control limits except for acetone which was not detected in the VP-4 lab duplicate. Acetone was flagged with "J" indicating it is estimated because the detection was less than the reporting limit.

090366 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and CCV recoveries were within laboratory control limits. RPDs for lab duplicates were within control limits except for TCE which was detected in the A-2 lab duplicate but not the A-2 sample. LCS recoveries were within laboratory control limits except 1,2,4-trichlorobenzene but was not flagged in the data because the corresponding CCV recovery was in range. Ethanol and acetone were flagged with an "E" qualifier indicating they exceeded the calibration range. Ethanol was detected five times lower than the reporting limit in A-3 but since it exceeded the calibration range in the preceding sample the result may be biased high.

0903664B (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. CCV recoveries were within laboratory control limits except ethanol which was flagged "J" where detected (VP-12). LCS recoveries were within laboratory control limits except 1,2,4-trichlorobenzene but was not flagged in the data because the corresponding CCV recovery was in range. RPDs for lab duplicates were within control limits except for ethanol which was detected in the lab duplicate for VP-5 but not in the VP-5 sample. PCE was flagged with an "E" qualifier in the VP-5 lab duplicate indicating it exceeded the instrument calibration. 2-propanol was flagged with an "E" qualifier in several samples.

0904356 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and CCV recoveries were within laboratory control limits. RPDs were within control limits. Acetone was flagged with "J" indicating it is estimated because the detection was less than the reporting limit. LCS recoveries were within laboratory control limits except 1,2,4-trichlorobenzene but was not flagged in the data because the corresponding CCV recovery was in range.

0906577 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS recoveries were within laboratory control limits. CCV recoveries were within laboratory control limits except 2-hexanone but was not detected. RPDs for lab duplicates were within control limits except for Freon 12, Freon 11, chloromethane, 1,3,5-trimethylbenzene, cDCE, and 1,1,1-TCA which were detected in VP-5 but not in the VP-5 lab duplicate. Acetone was flagged with an "E" qualifier in VP-2A-0620 indicating it exceeded the calibration range.

0907105B (Air)

Volatile Organic Compounds. Required holding times were met. The chain-of-custody (COC) information for the Tote Composite of 2405 N. Albina sample and 2503 N. Albina sample did not match the entries on the sample tag. The information on the COC was used in the report. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. LCS and CCV recoveries were within laboratory control limits except chloromethane and bromomethane and were flagged with a "J" in several samples. RPDs for lab duplicates were within control limits. Ethanol was flagged with an "E" qualifier in VP-2A-0620 indicating it exceeded the calibration range.

0907105C (Air)

Volatile Organic Compounds. Required holding times were met. The COC information for the 2624 N. Borthwick sample did not match the sample tag entry. The information on the COC was used in the report. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. LCS and CCV recoveries were within laboratory control limits except chloromethane and bromomethane; chloromethane was flagged with a "J" in several samples but bromomethane was not detected. RPDs for lab duplicates were within control limits.

0903664C (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. CCV recoveries were within

laboratory control limits. LCS recoveries were within laboratory control limits except 1,2,4-trichlorobenzene but was not flagged in the data because the corresponding CCV recovery was in range. RPDs for A-2 lab duplicate were within control limits except for trichloroethene which was detected only in the lab duplicate. Ethanol was flagged with an "E" qualifier in 2403 N. Albina-Office and 2403 N. Albina Warehouse indicating it exceeded the calibration range.

0606435B (Air)-

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, LCS, and MS recoveries were within laboratory control limits. The data are considered acceptable.

0607446A (Air)-

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, LCS, and CCV recoveries were within laboratory control limits. The data are considered acceptable.

0909478 (Air)-

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate and LCS recoveries were within laboratory control limits. 1,2,4-trichlorobenzne exceeded the quality control limits in the CCV, so the non-detected compound was flagged with "UJ" to indicate the low bias associated in the CCV. 2-Propanol exceeded the quality control limits in the CCV, so the compound was flagged with "J" indicating an estimated value.

1003564 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. CCV recoveries were within laboratory control limits. LCS recoveries were within laboratory control limits except for ethanol and hexachlorobutadiene but were not flagged because the corresponding CCV recoveries were in range.

0912605 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. CCV recoveries were within laboratory control limits. LCS recoveries were within laboratory control limits except for ethanol and carbon tetrachloride but were not flagged because the corresponding CCV recoveries were in range.

10001588 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, LCS, and MS recoveries were within laboratory control limits. Acetone was flagged with an "E" qualifier indicating it exceeded the calibration range.

0607446A (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, LCS, and CCV recoveries were within laboratory control limits. The data are considered acceptable.

0606435B (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, LCS, and CCV recoveries were within laboratory control limits. The data are considered acceptable.

0911075 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate recoveries were within laboratory control limits. CCV recoveries were within laboratory control limits. LCS recoveries were within laboratory control limits except for ethanol, carbon tetrachloride, and 1,2,-dichlorethane but were not flagged because the corresponding CCV recoveries were in range.

0911576 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogates were within laboratory control limits. 1,2-dichloroethane exceeded the quality control limits in the CCV, so the compound was flagged with "J" indicating an estimated value. LCS recoveries were within laboratory control limits except for trans-1,3-dichloropropene but was not flagged because the corresponding CCV recovery was in range.

1012335 (Air)

Volatile Organic Compounds. Required holding times were met. No method blank contamination was detected. The surrogate, LCS, and CCV recoveries were within laboratory control limits. The data are considered acceptable. Ethanol was flagged with an "E" qualifier in 807 N. Russell-Main Floor, 816 N. Russell-Bar, 2503 N. Albina-Office, and 2503 N. Albina-Warehouse indicating it exceeded the calibration range.

Additional materials included on enclosed CD

Appendix D

OWRD Logs for Wells in Site Vicinity

STATE ENGINEER
Salem, Oregon

MULT 1009

Well Record

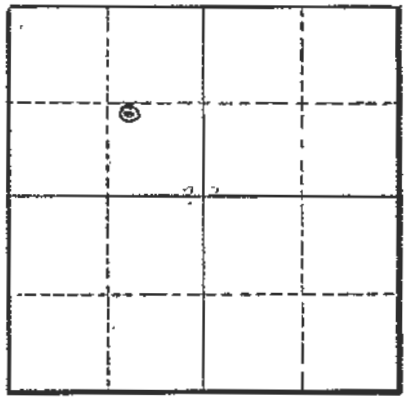
STATE WELL NO. 1N/1-27C(1)
COUNTY Multnomah
APPLICATION NO. GR-301

OWNER: Alvin K. Kaser
MAILING ADDRESS: Route 2, Box 119

LOCATION OF WELL: Owner's No. 1
CITY AND STATE: Troutdale, Oregon

NE ¼ NW ¼ Sec. 27 T. 1 ~~S.~~ N., R. 1 ~~W.~~ E., W.M.

Bearing and distance from section or subdivision corner 600' W. and 600' N. of SE cor. of NE¼ NW¼ of Sec. 27.



Altitude at well 40 feet Interpolated

TYPE OF WELL: Drilled Date Constructed 10-7-52

Depth drilled 238' Depth cased 238'

Section 27

CASING RECORD:

8 inch casing set from 0 to 141 feet

5 inch I.D. liner set from 141 to 238 feet

FINISH:

Perforated from 141 to 238 feet

AQUIFERS:

Gravels from 206 to 238 feet

WATER LEVEL:

31 feet below land surface

PUMPING EQUIPMENT: Type Pacific 4" (9 bowls) H.P. 15
Capacity 250 G.P.M.

WELL TESTS:

Drawdown	35 / 21	ft. after	hours	250 / 150	G.P.M.
Drawdown	40 / 52	ft. after	hours pumping	300 / 400	G.P.M.

USE OF WATER Irrigation 54 acres Temp. °F. , 19
SOURCE OF INFORMATION Registration Statement GR-301
DRILLER or DIGGER
ADDITIONAL DATA:
Log x Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

State Printing 89816

STATE ENGINEER
Salem, Oregon

State Well No. 1N/1-27
County Multnomah
Application No. GR-301

Well Log

Owner: Alvin K. Kaser Owner's No. 1

Driller: unknown Date Drilled 10-7-52

CHARACTER OF MATERIAL	(Feet below land surface) From	To	Thickness (feet)
Clay, sandy	0	9	9
Sand and gravel, hard cemented	9	30	21
Sand and gravel, pea, cemented (water at 35')	30	55	25
Gravel, soft, dirty, cemented	55	68	13
Gravel, cemented, hard streaks	68	120	52
Gravel, softer, less cemented (water bearing 20 gpm 130', 45 gpm 138')	120	138	18
Gravel, hard, cemented	138	208	70
Gravel and sand, cemented, coarse water bearing	208	235	27
Gravel, loose (water bearing)	235	237	2

ORIGINAL
File Original and Duplicate with the STATE ENGINEER, SALEM, OREGON

MULT 1010

RECEIVED FEB 14 1958 STATE ENGINEER SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

State Well No. 1N/1-27L(1)

State Permit No.

(1) OWNER:
Name Harry Williams
Address 832 No. Russell St.
Portland 12, Ore.

(2) LOCATION OF WELL:
County Multnomah Owner's number, if any—
¼ ¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner
Lots 17 & 18 - part of Lots 1-2, Block 52, Albina Add.

(3) TYPE OF WORK (check):
Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
For abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED: Threaded ☐ Welded ☒
6" Diam. from ft. to 83 ft. Gage
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS: Perforated? ☐ Yes ☐ No
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS: Well screen installed ☐ Yes ☐ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? ft.
Material used in seal—
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 55 ft. below land surface Date
Artesian pressure lbs. per square inch Date

Log Accepted by:
[Signed] H. Williams (Owner) Date 1-6, 19 58

(11) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test 30 gal./min. with 16 ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(12) WELL LOG: Diameter of well 6" inches.
Depth drilled 83 ft. Depth of completed well 83 ft.
Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Sandy clay	0	55
sand fine	55	70
Water gravel	70	83

Work started 19 . Completed 19

(13) PUMP:
Manufacturer's Name
Type: H.P.

Well Driller's Statement:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
NAME C. E. Hamblet (Person, firm, or corporation) (Type or print)
Address 6116 S.E. 52
Driller's well number 1X
[Signed] C. E. Hamblet (Well Driller)
License No. 13 Date Jan 6, 19 58

(USE ADDITIONAL SHEETS IF NECESSARY)

Appendix E

COPC Risk Screening and ProUCL Input and Output Calculations

Table 1
COPC Evaluation – Soil and Groundwater
Tarr Facility – Portland, Oregon

Chemicals of Interest	Soil (mg/kg)											Groundwater (µg/L)											Multiple Media		Chemicals of Potential Concern[1,2]
	Detection Frequency			Detection Limit Range		COPC Screening						Detection Frequency			Detection Limit Range		COPC Screening						Screening		
	Det.	/ Total	%	Min.	Max.	SL	Cij	Rij	COPC?	Rij/Rj	COPC?	Det.	/ Total	%	Min.	Max.	SL	Cij	Rij	COPC?	Rij/Rj	COPC?	SRij	COPC?	
Total Petroleum Hydrocarbons																									
Gasoline-Range Organics	16	/ 32	50%	4	20	7.4E+02	5.3E+05	7.2E+02	Yes	3.7E-01	Yes	3	/ 8	38%	250	250	1.0E+02	1.3E+03	1.3E+01	Yes	1.3E-05	No	7.3E+02	Yes	Gasoline-Range Organics
Diesel-Range Organics	8	/ 43	19%	2	320	3.9E+03	1.3E+06	3.3E+02	Yes	1.7E-01	Yes	0	/ 5	0%	250	630	9.0E+01	0.0E+00	--	No	--	No	--	No	Diesel-Range Organics
Residual-Range Organics	7	/ 43	16%	28	100,000	3.9E+03	1.6E+04	4.2E+00	Yes	2.2E-03	No	0	/ 5	0%	500	630	9.0E+01	0.0E+00	--	No	--	No	--	No	Residual-Range Organics
PCBs																									
PCBs	0	/ 1	0%	0.05	0.05	2.2E-01	N/A	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A	2.8E-02	N/A	--	No	--	No	--	No	
Metals																									
Silver	0	/ 1	0%	1	1	3.9E+02	0.0E+00	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A	1.8E+02	N/A	--	No	--	No	--	No	
Arsenic	1	/ 1	100%	0	0	3.9E-01	1.5E+00	3.8E+00	Yes	2.0E-03	No	N/A	/ N/A	N/A	N/A	N/A	3.8E-02	N/A	--	No	--	No	--	No	Arenic < backgound, not a COPC
Barium	1	/ 1	100%	0	0	1.5E+04	3.6E+01	2.4E-03	No	1.2E-06	No	N/A	/ N/A	N/A	N/A	N/A	7.3E+03	N/A	--	No	--	No	--	No	
Cadmium	1	/ 1	100%	0	0	3.9E+01	4.0E+00	1.0E-01	No	5.3E-05	No	N/A	/ N/A	N/A	N/A	N/A	1.8E+01	N/A	--	No	--	No	--	No	
Chromium	1	/ 1	100%	0	0	1.2E+05	6.0E+00	5.0E-05	No	2.6E-08	No	N/A	/ N/A	N/A	N/A	N/A	5.5E+04	N/A	--	No	--	No	--	No	
Mercury	0	/ 1	0%	0.1	0	2.3E+01	0.0E+00	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A	1.1E+01	N/A	--	No	--	No	--	No	
Lead	2	/ 2	100%	0.0	0	4.0E+02	2.0E+01	5.0E-02	No	2.6E-05	No	N/A	/ N/A	N/A	N/A	N/A	1.5E+01	N/A	--	No	--	No	--	No	
Selenium	0	/ 1	0%	0.1	0.5	3.9E+02	0.0E+00	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A	1.8E+02	N/A	--	No	--	No	--	No	
Volatile Organic Compounds																									
Acetone	7	/ 147	5%	0.028	83	6.1E+04	1.7E+02	2.8E-03	No	1.4E-06	No	2	/ 157	1%	20	25,000	2.2E+04	1.9E+02	8.7E-03	No	8.4E-09	No	--	No	
Benzene	1	/ 148	1%	0.0005	5.7	1.2E+00	5.1E-02	4.2E-02	No	2.2E-05	No	21	/ 157	13%	1	1,000	3.9E-01	2.7E+02	6.9E+02	Yes	6.6E-04	No	6.9E+02	Yes	Benzene
Bromobenzene	0	/ 147	0%	0.0022	6	3.0E+02	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	8.8E+01	0.0E+00	--	No	--	No	--	No	
Bromochloromethane	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	0.0E+00	0.0E+00	--	No	--	No	--	No	
Bromodichloromethane	0	/ 147	0%	0.0022	6	1.9E+00	0.0E+00	--	No	--	No	5	/ 157	3%	1	1,000	1.2E-01	3.8E+02	3.2E+03	No	3.0E-03	No	--	No	
Bromoform	0	/ 147	0%	0.0022	6	8.1E+01	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	7.2E+00	0.0E+00	--	No	--	No	--	No	
Bromomethane	0	/ 147	0%	0.0094	17	4.6E+01	0.0E+00	--	No	--	No	4	/ 157	3%	2	5,000	8.7E+00	2.6E+02	3.0E+01	No	2.9E-05	No	--	No	
2-Butanone (MEK)	3	/ 147	2%	0.014	57		1.6E+00	--	No	--	No	1	/ 157	1%	10	10,000		2.5E+01	--	No	--	No	--	No	
n-Butylbenzene	2	/ 147	1%	0.0047	16.6		4.4E+00	--	No	--	No	0	/ 157	0%	2	5,000		0.0E+00	--	No	--	No	--	No	
sec-Butylbenzene	3	/ 147	2%	0.0022	5.7		2.5E+00	--	No	--	No	2	/ 157	1%	1	1,000		7.8E-01	--	No	--	No	--	No	
tert-Butylbenzene	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	2	/ 157	1%	1	1,000		2.1E+00	--	No	--	No	--	No	
Carbon disulfide	0	/ 123	0%	0.0028	33	8.2E+02	0.0E+00	--	No	--	No	0	/ 149	0%	10	10,000	1.0E+03	0.0E+00	--	No	--	No	--	No	
Carbon tetrachloride	0	/ 147	0%	0.0022	6	6.3E-01	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	1.9E-01	0.0E+00	--	No	--	No	--	No	
Chlorobenzene	0	/ 147	0%	0.0019	6	5.3E+02	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	9.1E+01	0.0E+00	--	No	--	No	--	No	
Chloroethane	0	/ 147	0%	0.0027	6	1.5E+04	0.0E+00	--	No	--	No	30	/ 157	19%	1	1,000	2.1E+04	8.5E+01	4.0E-03	No	3.9E-09	No	--	No	
Chloroform	0	/ 147	0%	0.0022	6	4.1E-01	0.0E+00	--	No	--	No	25	/ 157	16%	1	1,000	1.9E-01	5.0E+01	2.6E+02	Yes	2.5E-04	No	--	No	Chloroform
Chloromethane	0	/ 147	0%	0.0094	29	3.0E+02	0.0E+00	--	No	--	No	0	/ 157	0%	2	5,000	1.9E+02	0.0E+00	--	No	--	No	--	No	
2-Chlorotoluene	0	/ 147	0%	0.0022	6	0.0E+00	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
4-Chlorotoluene	0	/ 147	0%	0.0022	6	0.0E+00	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
1,2-Dibromo-3-Chloropropane	0	/ 147	0%	0.0024	29	5.4E-03	0.0E+00	--	No	--	No	0	/ 157	0%	1	5,000	3.2E-04	0.0E+00	--	No	--	No	--	No	
Dibromochloromethane	0	/ 147	0%	0.0022	6	7.6E+00	0.0E+00	--	No	--	No	0	/ 157	0%	1	5,000	6.8E-01	0.0E+00	--	No	--	No	--	No	
1,2-Dibromoethane	0	/ 148	0%	0.0022	6	1.4E-01	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	6.3E-03	0.0E+00	--	No	--	No	--	No	
Dibromomethane	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	0.0E+00	0.0E+00	--	No	--	No	--	No	
1,2-Dichlorobenzene	0	/ 147	0%	0.0022	6	2.2E+03	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	3.7E+02	0.0E+00	--	No	--	No	--	No	
1,3-Dichlorobenzene	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	0.0E+00	0.0E+00	--	No	--	No	--	No	
1,4-Dichlorobenzene	0	/ 147	0%	0.0022	6	1.7E+01	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	4.2E-01	0.0E+00	--	No	--	No	--	No	
Dichlorodifluoromethane	3	/ 147	2%	0.0022	16.6	1.8E+02	8.4E-01	4.7E-03	No	2.4E-06	No	1	/ 157	1%	4	5,000	3.9E+02	2.5E+01	6.4E-02	No	6.2E-08	No	--	No	
1,1-Dichloroethane	3	/ 147	2%	0.0019	5.7	5.9E+00	1.0E-01	1.7E-02	No	8.7E-06	No	84	/ 157	54%	1	1,000	2.3E+00	2.5E+02	1.1E+02	Yes	1.0E-04	No	1.1E+02	Yes	1,1-Dichloroethane
1,2-Dichloroethane	0	/ 148	0%	0.0012	6	5.9E-01	0.0E+00	--	No	--	No	3	/ 157	2%	1	1,000	1.4E-01	3.4E+01	2.4E+02	No	2.3E-04	No	--	No	
1,1-Dichloroethene	0	/ 147	0%	0.0022	6	6.8E+02	0.0E+00	--	No	--	No	45	/ 168	27%	1	1,000	3.4E+02	3.0E+02	8.8E-01	No	8.5E-07	No	--	No	
cis-1,2-Dichloroethene	46	/ 147	31%	0.0022	5.7	7.8E+02	6.9E+00	8.9E-03	No	4.6E-06	No	154	/ 168	92%	1	100	3.6E+02	1.3E+04	3.5E+01	Yes	3.4E-05	No	3.5E+01	Yes	cis-1,2-Dichloroethene
trans-1,2-Dichloroethene	0	/ 147	0%	0.0022	6	2.0E+02	0.0E+00	--	No	--	No	45	/ 168	27%	1	1,000	1.1E+02	1.7E+02	1.5E+00	Yes	1.4E-06	No	--	No	trans-1,2-Dichloroethene
1,2-Dichloropropane	0	/ 147	0%	0.0022	6	8.9E-01	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	3.9E-01	0.0E+00	--	No	--	No	--	No	
1,3-Dichloropropane	0	/ 147	0%	0.0022	6	1.6E+03	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	7.3E+02	0.0E+00	--	No	--	No	--	No	
2,2-Dichloropropane	2	/ 147	1%	0.0022	3.3		5.7E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
1,1-Dichloropropene	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
cis-1,3-Dichloropropene	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
trans-1,3-Dichloropropene	0	/ 147	0%	0.0012	6		0.0E+00	--	No	--	No	1	/ 157	1%	1	1,000		2.0E+00	--	No	--	No	--	No	
Ethylbenzene	13	/ 148	9%	0.0027	1.3	1.2E+01	3.6E+01	3.0E+00	Yes	1.6E-03	No	2	/ 157	1%	1	1,000	1.4E+00	1.7E+01	1.2E+01	No	1.2E-05	No	1.5E+01	Yes	Ethylbenzene
Hexachlorobutadiene	0	/ 147	0%	0.0047	13	6.2E+00	0.0E+00	--	No	--	No	0	/ 157	0%	2	4,000	8.6E-01	0.0E+00	--	No	--	No	--	No	
2-Hexanone	0	/ 147	0%	0.011	57		0.0E+00	--	No	--	No	0	/ 157	0%	10	10,000		0.0E+00	--	No	--	No	--	No	
Isopropylbenzene (cumene)	7	/ 148	5%	0.0022	6.6		1.2E+01	--	No	--	No	3	/ 157	2%	2	2,000		9.0E+00	--	No	--	No	--	No	
p-Isopropyltoluene[3]	3	/ 146	2%	0.0022	6.6		2.9E+00	--	No	--	No	0	/ 157	0%	2	2,000		0.0E+00	--	No	--	No	--	No	
4-Methyl-2-pentanone (MIBK)	0	/ 147	0%	0.011	57		0.0E+00	--	No	--	No	3	/ 157	2%	5	5,000		6.9E+01	--	No	--	No	--	No	
Methyl tert-butyl ether	7	/ 148	5%	0.00094	29	7.4E+01	3.4E-03	4.6E-05	No	2.4E-08	No	42	/ 156	27%	0	1,000	1.2E+01	2.5E+02	2.1E+01	Yes	2.0E-05	No	2.1E+01	Yes	Methyl tert-butyl ether
Methylene Chloride	3	/ 147	2%	0.0032	57	2.0E+01	1.9E+00	9.5E-02	No	4.9E-05	No	19	/ 157	12%	5	5,000	4.4E+00	1.0E+03	2.3E+02	Yes	2.2E-04	No	2.3E+02	Yes	Methylene Chloride
Naphthalene	5	/ 148	3%	0.0045	6.6	4.6E+00	6.5E+00	1.4E+00	No	7.3E-04	No	1	/ 157	1%	2	2,000	1.4E-01	4.0E+00	2.9E+01	No	2.7E-05	No	--	No	
n-Propylbenzene	8	/ 148	5%	0.0022	3.3	3.4E+03	2.8E+01	8.2E-03	No	4.2E-06	No	1	/ 157	1%	1	1,000	1.3E+03	2.7E-01	2.1E-04	No	2.0E-10	No	8.4E-03	No	
Styrene	2	/ 147	1%	0.00094	5.7	7.9E+03	7.2E+00	9.1E-04	No	4.7E-07	No	0	/ 157	0%	1	1,000	1.6E+03	0.0E+00	--	No	--	No	--	No	
1,1,1,2-Tetrachloroethane	0	/ 147	0%	0.0022	6	1.9E+00	0.0E+00	--	No	--	No	2	/ 157	1%	1	1,000	5.2E-01	1.4E+01	2.7E+01	No	2.6E-05	No	--	No	

Please refer to notes at end of table.

Table 1
COPC Evaluation – Soil and Groundwater
Tarr Facility – Portland, Oregon

Chemicals of Interest	Soil (mg/kg)											Groundwater (µg/L)										Multiple Media		Chemicals of Potential Concern[1,2]
	Detection Frequency			Detection Limit Range		COPC Screening						Detection Frequency			Detection Limit Range		COPC Screening					Screening		
	Det.	/ Total	%	Min.	Max.	SL	Cij	Rij	COPC?	Rij/Rj	COPC?	Det.	/ Total	%	Min.	Max.	SL	Cij	Rij	COPC?	Rij/Rj	COPC?	SRij	COPC?	
Volatile Organic Compounds (continued)																									
1,1,2,2-Tetrachloroethane	0	/ 147	0%	0.0022	6	5.6E-01	0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000	6.7E-02	0.0E+00	--	No	--	No	--	No	
Tetrachloroethene (PCE)	133	/ 147	90%	0.089	6	1.1E+00	2.4E+02	2.2E+02	Yes	1.1E-01	Yes	163	/ 168	97%	1	2	9.3E-02	6.2E+04	6.7E+05	Yes	6.4E-01	Yes	6.7E+05	Yes	Tetrachloroethene (PCE)
Toluene	22	/ 148	15%	0.0014	1	5.8E+03	2.9E+02	5.0E-02	No	2.6E-05	No	6	/ 157	4%	1	1,000	2.3E+03	5.2E+02	2.3E-01	No	2.2E-07	No	2.8E-01	No	
1,2,3-Trichlorobenzene	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
1,2,4-Trichlorobenzene	3	/ 147	2%	0.0022	5.7		4.7E-01	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
1,1,1-Trichloroethane	10	/ 147	7%	0.0023	5.7	5.3E+04	4.0E-01	7.6E-06	No	3.9E-09	No	94	/ 157	60%	1	1,000	9.1E+03	6.3E+02	6.9E-02	No	6.6E-08	No	6.9E-02	No	
1,1,2-Trichloroethane	2	/ 147	1%	0.0012	5.7	2.7E+00	1.4E+00	5.1E-01	No	2.6E-04	No	6	/ 157	4%	1	1,000	2.3E-01	1.2E+02	5.2E+02	No	5.0E-04	No	--	No	
Trichloroethene (TCE)	75	/ 147	51%	0.0023	5.7	1.3E-01	7.6E+01	5.9E+02	Yes	3.0E-01	Yes	164	/ 168	98%	1	1	3.9E-02	1.3E+04	3.4E+05	Yes	3.3E-01	Yes	3.4E+05	Yes	Trichloroethene (TCE)
Trichlorofluoromethane	1	/ 147	1%	0.0022	5.7	7.6E+03	7.0E-02	9.3E-06	No	4.8E-09	No	1	/ 157	1%	1	1,000	1.3E+03	1.0E+00	7.7E-04	No	7.4E-10	No	--	No	
1,2,3-Trichloropropane	0	/ 147	0%	0.0022	6		0.0E+00	--	No	--	No	0	/ 157	0%	1	1,000		0.0E+00	--	No	--	No	--	No	
1,2,4-Trimethylbenzene	13	/ 148	9%	0.0022	1.3	1.1E+02	8.6E+01	7.8E-01	No	4.0E-04	No	2	/ 157	1%	1	1,000	1.5E+01	3.0E+00	2.0E-01	No	1.9E-07	No	9.8E-01	No	
1,3,5-Trimethylbenzene	10	/ 148	7%	0.0022	1.9	9.4E+01	4.7E+01	5.0E-01	No	2.6E-04	No	1	/ 157	1%	1	1,000	1.2E+01	4.5E-01	3.8E-02	No	3.6E-08	No	5.3E-01	No	
Vinyl chloride	2	/ 147	1%	0.0022	5.7	3.4E-01	3.2E-01	9.5E-01	No	4.9E-04	No	38	/ 168	23%	1	1,000	2.5E-02	5.6E+02	2.2E+04	Yes	2.1E-02	No	2.2E+04	Yes	Vinyl chloride
o-Xylene	8	/ 102	8%	0.0022	0.5		1.6E+01	--	No	--	No	3	/ 149	2%	1	1,000		3.4E-01	--	No	--	No	--	No	
m,p-Xylene	15	/ 102	15%	0.0047	1.0		4.7E+01	--	No	--	No	2	/ 149	1%	2	2,000		2.0E+02	--	No	--	No	--	No	
Xylenes, Total	9	/ 78	12%	0.0082	4	1.4E+03	2.1E+02	1.5E-01	No	7.8E-05	No	3	/ 4	75%	14	14	2.0E+02	6.4E+01	3.2E-01	No	3.1E-07	No	4.7E-01	No	
Polycyclic Aromatic Hydrocarbons																									
Acenaphthene	3	/ 11	27%	0.016	0.43	4.7E+03	7.0E-02	1.5E-05	No	7.7E-09	No	N/A	/ N/A	N/A	N/A	N/A	2.2E+03	N/A	--	No	--	No	--	No	
Acenaphthylene	3	/ 11	27%	0.017	0.43		1.2E-01	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A	0.0E+00	N/A	--	No	--	No	--	No	
Anthracene	3	/ 11	27%	0.017	0.43	2.3E+04	2.2E-02	9.7E-07	No	5.0E-10	No	N/A	/ N/A	N/A	N/A	N/A	1.1E+04	N/A	--	No	--	No	--	No	
Benzo(a)anthracene	4	/ 11	36%	0.017	0.32	1.5E-01	5.5E-01	3.6E+00	Yes	1.9E-03	No	N/A	/ N/A	N/A	N/A	N/A	2.9E-02	N/A	--	No	--	No	--	No	Benzo(a)anthracene
Benzo(a)pyrene	4	/ 11	36%	0.017	0.32	1.5E-02	8.2E-01	5.4E+01	Yes	2.8E-02	Yes	N/A	/ N/A	N/A	N/A	N/A	2.9E-03	N/A	--	No	--	No	--	No	Benzo(a)pyrene
Benzo(b)fluoranthene	4	/ 11	36%	0.017	0.32	1.5E-01	7.3E-01	4.8E+00	Yes	2.5E-03	No	N/A	/ N/A	N/A	N/A	N/A	2.9E-02	N/A	--	No	--	No	--	No	Benzo(b)fluoranthene
Benzo(g,h,i)perylene	4	/ 11	36%	0.017	0.32		7.7E-01	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A		N/A	--	No	--	No	--	No	
Benzo(k)fluoranthene	4	/ 11	36%	0.017	0.32	1.5E+00	5.0E-01	3.3E-01	No	1.7E-04	No	N/A	/ N/A	N/A	N/A	N/A	2.9E-01	N/A	--	No	--	No	--	No	
Chrysene	4	/ 11	36%	0.017	0.32	1.5E+01	7.9E-01	5.3E-02	No	2.7E-05	No	N/A	/ N/A	N/A	N/A	N/A	2.9E+00	N/A	--	No	--	No	--	No	
Dibenz(a,h)anthracene	3	/ 11	27%	0.017	0.43	1.5E-02	4.2E-02	2.8E+00	Yes	1.4E-03	No	N/A	/ N/A	N/A	N/A	N/A	2.9E-03	N/A	--	No	--	No	--	No	Dibenz(a,h)anthracene
Fluoranthene	5	/ 11	45%	0.017	0.32	2.3E+03	1.2E+00	5.2E-04	No	2.7E-07	No	N/A	/ N/A	N/A	N/A	N/A	1.5E+03	N/A	--	No	--	No	--	No	
Fluorene	7	/ 11	64%	0.017	0.43	3.1E+03	6.7E-01	2.2E-04	No	1.1E-07	No	N/A	/ N/A	N/A	N/A	N/A	1.5E+03	N/A	--	No	--	No	--	No	
Indeno(1, 2, 3-cd)pyrene	4	/ 11	36%	0.017	0.32	1.5E-01	5.6E-01	3.7E+00	Yes	1.9E-03	No	N/A	/ N/A	N/A	N/A	N/A	2.9E-02	N/A	--	No	--	No	--	No	Indeno(1, 2, 3-cd)pyrene
Naphthalene	7	/ 11	64%	0.017	0.43	4.6E+00	2.4E+00	5.1E-01	No	2.6E-04	No	N/A	/ N/A	N/A	N/A	N/A	1.4E-01	N/A	--	No	--	No	--	No	
Phenanthrene	9	/ 11	82%	0.017	0.017		1.1E+00	--	No	--	No	N/A	/ N/A	N/A	N/A	N/A		N/A	--	No	--	No	--	No	
Pyrene	5	/ 11	45%	0.017	0.32	1.7E+03	1.2E+00	6.9E-04	No	3.6E-07	No	N/A	/ N/A	N/A	N/A	N/A	1.1E+03	N/A	--	No	--	No	--	No	
							Rj	1.9E+03										Rj	1.0E+06					
							Nij	42										Nij	29					
							1/Nij	2.4E-02										1/Nij	3.4E-02					

Abbreviations and Acronyms:
SL = Screening level.
Soil: Lower of DEQ RBC for Residential Direct Contact or Occupational Vapor Intrusion (November 2009). If RBC not available, EPA Regional Residential Screening Level (April 2009).
Groundwater: DEQ RBC for Residential Tapwater (October 2008). If RBC not available, EPA Regional Tapwater Screening Level (April 2009).
-- = Not applicable.
COPC = Chemicals of potential concern.
N/A = Not analyzed.

Variables:
Cij = Maximum detected concentration of compound i in medium j.
Rij = Risk ratio for compound i in medium j (Cij/SL); compound is a COPC if Rij is greater than 1.
Rj = Sum of risk ratios for medium j.
Nij = Number of compounds i detected in medium j.
Rij/Rj = Compound is a COPC if this ratio is greater than 1/Nij.
SRij = Summary risk ratio for compound i in all media (total Rij across all media); compound is a COPC if Srij is greater than 1.

Notes:
1. Chemical is retained as a COPC based on individual or multiple pathway concentration-risk screens (DEQ 2000; Section 2.3.2[3][a] and 2.3.2[3][b]).
2. Chemicals with frequency of detection of less than 5 percent were not retained as COPC per DEQ guidance (DEQ 2000; Section 2.3.2[1]).
3. Groundwater data collected through December 2009.

Table 2
COPC Evaluation – Soil Vapor
Tarr Facility – Portland, Oregon

Chemicals of Interest	Soil Vapor (µg/m^3)												Chemicals of Potential Concern[1,2]
	Detection Frequency				Detection Limit Range		COPC Screening						
	Det.	/	Total	%	Min.	Max.	SL	Cij	Rij	COPC?	Rij/Rj	COPC?	
Volatile Organic Compounds													
Freon 12	7	/	32	22%	9	7,100		3.1E+04	--	No	--	No	
Freon 114	7	/	32	22%	1	10,000		4.4E+04	--	No	--	No	
Chloromethane	7	/	32	22%	0	12,000	9.4E+01	5.2E+04	5.5E+02	Yes	1.4E-05	No	Chloromethane
Vinyl Chloride	7	/	38	18%	0	3,700	1.7E-01	1.6E+04	9.4E+04	Yes	2.4E-03	No	Vinyl Chloride
1,3-Butadiene	7	/	32	22%	0	3,200	8.1E+01	1.4E+04	1.7E+02	Yes	4.3E-06	No	1,3-Butadiene
Bromomethane	7	/	32	22%	1	5,600	5.2E+00	2.5E+04	4.8E+03	Yes	1.2E-04	No	Bromomethane
Chloroethane	7	/	32	22%	0	3,800	1.0E+04	1.7E+04	1.7E+00	Yes	4.2E-08	No	Chloroethane
Freon 11	10	/	32	31%	4	8,100	7.3E+02	3.6E+04	4.9E+01	Yes	1.2E-06	No	Freon 11
Ethanol	11	/	32	34%	5	11,000		4.8E+04	--	No	--	No	
Freon 113	8	/	32	25%	1	11,000	3.1E+04	4.9E+04	1.6E+00	Yes	3.9E-08	No	Freon 113
1,1-Dichloroethene	18	/	38	47%	0	5,700	2.1E+02	2.5E+04	1.2E+02	Yes	3.0E-06	No	1,1-Dichloroethene
Acetone	18	/	32	56%	7	14,000	3.2E+07	6.3E+04	2.0E-03	No	4.9E-11	No	
2-Propanol	10	/	32	31%	4	14,000		6.2E+04	--	No	--	No	
Carbon Disulfide	11	/	32	34%	5	4,500	7.3E+05	2.0E+04	2.7E-02	No	6.8E-10	No	
3-Chloropropene	7	/	28	25%	2	18,000		8.0E+04	--	No	--	No	
Methylene Chloride	9	/	32	28%	1	5,000	5.2E+00	2.2E+04	4.2E+03	Yes	1.1E-04	No	Methylene Chloride
Methyl tert-butyl ether	8	/	38	21%	1	5,200	9.4E+00	2.3E+04	2.4E+03	Yes	6.1E-05	No	Methyl tert-butyl ether
trans-1,2-Dichloroethene	8	/	38	21%	1	5,700	6.3E+01	2.5E+04	4.0E+02	Yes	9.9E-06	No	trans-1,2-Dichloroethene
Hexane	9	/	32	28%	1	5,100		2.2E+04	--	No	--	No	
1,1-Dichloroethane	9	/	38	24%	0	5,800	1.5E+00	2.6E+04	1.7E+04	Yes	4.3E-04	No	1,1-Dichloroethane
2-Butanone (Methyl Ethyl Ketone)	11	/	32	34%	2	4,200		1.9E+04	--	No	--	No	
cis-1,2-Dichloroethene	18	/	38	47%	0	1,200		1.9E+05	--	No	--	No	
Tetrahydrofuran	10	/	32	31%	2	4,200		1.6E+05	--	No	--	No	
Chloroform	13	/	32	41%	1	7,000	1.1E-01	3.1E+04	2.8E+05	Yes	7.0E-03	No	Chloroform
1,1,1-Trichloroethane	33	/	38	87%	5	7,800	5.2E+03	7.8E+04	1.5E+01	Yes	3.7E-07	No	1,1,1-Trichloroethane
Cyclohexane	10	/	32	31%	1	4,800	6.3E+06	2.2E+04	3.5E-03	No	8.7E-11	No	
Carbon Tetrachloride	9	/	32	28%	1	8,900	1.6E-01	4.0E+04	2.5E+05	Yes	6.2E-03	No	Carbon Tetrachloride
2,2,4-Trimethylpentane	8	/	28	29%	3	6,600		3.0E+04	--	No	--	No	
Benzene	10	/	38	26%	0	4,500	3.1E-01	2.0E+04	6.5E+04	Yes	1.6E-03	No	Benzene
1,2-Dichloroethane	9	/	38	24%	0	5,700	9.4E-02	2.6E+04	2.8E+05	Yes	6.9E-03	No	1,2-Dichloroethane
Heptane	10	/	32	31%	1	5,800	--	2.6E+04	--	No	--	No	
Trichloroethene	36	/	38	95%	0	0	2.7E-02	1.0E+06	3.7E+07	Yes	9.3E-01	Yes	Trichloroethene
1,2-Dichloropropane	9	/	32	28%	1	6,500	2.4E+02	2.9E+04	1.2E+02	Yes	3.0E-06	No	1,2-Dichloropropane
1,4-Dioxane	9	/	32	28%	1	20,000	3.2E-01	9.2E+04	2.9E+05	Yes	7.2E-03	No	1,4-Dioxane
Bromodichloromethane	10	/	32	31%	1	9,400	6.6E-02	4.2E+04	6.4E+05	Yes	1.6E-02	No	Bromodichloromethane
cis-1,3-Dichloropropene	9	/	32	28%	1	6,400	--	2.9E+04	--	No	--	No	
4-Methyl-2-pentanone	11	/	32	34%	1	5,800	--	2.6E+04	--	No	--	No	
Toluene	15	/	38	39%	1	5,300	5.2E+03	2.4E+04	4.6E+00	Yes	1.2E-07	No	Toluene
trans-1,3-Dichloropropene	9	/	32	28%	1	6,400	--	2.9E+04	--	No	--	No	
1,1,2-Trichloroethane	9	/	38	24%	0	7,700	1.5E-01	3.5E+04	2.3E+05	Yes	5.8E-03	No	1,1,2-Trichloroethane
Tetrachloroethene	38	/	38	100%	--	--	4.1E+02	1.1E+07	2.7E+04	Yes	6.7E-04	No	Tetrachloroethene
2-Hexanone	9	/	32	28%	3	23,000	--	1.0E+05	--	No	--	No	
Dibromochloromethane	9	/	32	28%	1	12,000	9.0E-02	5.4E+04	6.0E+05	Yes	1.5E-02	No	Dibromochloromethane
1,2-Dibromoethane (EDB)	9	/	32	28%	1	11,000	--	4.9E+04	--	No	--	No	
Chlorobenzene	9	/	32	28%	1	6,500	5.2E+01	2.9E+04	5.6E+02	Yes	1.4E-05	No	Chlorobenzene

Please refer to notes at end of table.

Table 2
COPC Evaluation – Soil Vapor
Tarr Facility – Portland, Oregon

Chemicals of Interest	Soil Vapor (µg/m^3)												Chemicals of Potential Concern[1,2]
	Detection Frequency				Detection Limit Range		COPC Screening						
	Det.	/	Total	%	Min.	Max.	SL	Cij	Rij	COPC?	Rij/Rj	COPC?	
Ethyl Benzene	12	/	38	32%	0	6,100	--	2.8E+04	--	No	--	No	
m,p-Xylene	13	/	38	34%	0	6,100	--	2.8E+04	--	No	--	No	
o-Xylene	12	/	38	32%	0	6,100	--	2.8E+04	--	No	--	No	
Styrene	10	/	32	31%	1	6,000	1.0E+03	2.7E+04	2.7E+01	Yes	6.7E-07	No	Styrene
Bromoform	9	/	32	28%	2	14,000	2.2E+00	6.6E+04	3.0E+04	Yes	7.5E-04	No	Bromoform
Cumene	9	/	32	28%	1	6,900	4.2E+05	3.1E+04	7.4E-02	No	1.8E-09	No	
1,1,2,2-Tetrachloroethane	9	/	38	24%	0	9,700	4.2E+01	4.4E+04	1.0E+03	Yes	2.6E-05	No	1,1,2,2-Tetrachloroethane
Propylbenzene	10	/	32	31%	1	6,900	--	3.1E+04	--	No	--	No	
4-Ethyltoluene	11	/	32	34%	1	6,900	--	3.1E+04	--	No	--	No	
1,3,5-Trimethylbenzene	10	/	32	31%	1	6,900	6.3E+00	3.1E+04	4.9E+03	Yes	1.2E-04	No	1,3,5-Trimethylbenzene
1,2,4-Trimethylbenzene	11	/	32	34%	1	6,900	7.3E+00	3.1E+04	4.2E+03	Yes	1.1E-04	No	1,2,4-Trimethylbenzene
1,3-Dichlorobenzene	9	/	32	28%	1	8,500	--	3.8E+04	--	No	--	No	
1,4-Dichlorobenzene	9	/	32	28%	1	8,500	2.2E-01	3.8E+04	1.7E+05	Yes	4.3E-03	No	1,4-Dichlorobenzene
alpha-Chlorotoluene	9	/	32	28%	1	7,300	--	3.3E+04	--	No	--	No	
1,2-Dichlorobenzene	9	/	32	28%	1	8,500	2.1E+02	3.8E+04	1.8E+02	Yes	4.5E-06	No	1,2-Dichlorobenzene
1,2,4-Trichlorobenzene	9	/	32	28%	5	42,000	--	1.9E+05	--	No	--	No	
Hexachlorobutadiene	9	/	32	28%	8	60,000	1.1E+02	2.7E+05	2.5E+03	Yes	6.1E-05	No	Hexachlorobutadiene
								Rj	4.0E+07				
								Nij	38				
								1/Nij	2.6E-02				

Abbreviations and Acronyms:
SL = Screening level.
Soil Vapor: DEQ Soil Vapor RBC for Residential Vapor Intrusion (September 2009). If no RBC available, EPA Regional Residential Air Screening Value adjusted with attenuation factor of 1,000 (December 2009).

COPC = Chemicals of potential concern.
N/A = Not analyzed.

Variables:
Cij = Maximum detected concentration of compound i in medium j.
Rij = Risk ratio for compound i in medium j (Cij/SL); compound is a COPC if Rij is greater than 1.
Rj = Sum of risk ratios for medium j.
Nij = Number of compounds i detected in medium j.
Rij/Rj = Compound is a COPC if this ratio is greater than 1/Nij.
SRij = Summary risk ratio for compound i in all media (total Rij across all media); compound is a COPC if Srij is greater than 1.

Notes:
1. Chemical is retained as a COPC based on individual or multiple pathway concentration-risk screens (DEQ 2000; Section 2.3.2[3][a] and 2.3.2[3][b]).
2. Chemicals with frequency of detection of less than 5 percent were not retained as COPCs per DEQ guidance (DEQ 2000; Section 2.3.2[1]).
3. Soil Vapor data collected through November 2009.

Additional materials included on enclosed CD

Appendix F

Non-Default RBDM Calculations

Additional materials included on enclosed CD

Appendix G

Ecological Screening Checklists

ATTACHMENT 1
Ecological Scoping Checklist

Site Name	Priestly/Tarr Remedial Investigation
Date of Site Visit	
Site Location	2429 North Borthwick
Site Visit Conducted by	

Part ❶

CONTAMINANTS OF INTEREST Types, Classes, Or Specific Hazardous Substances ‡ Known Or Suspected	Onsite	Adjacent to or in locality of the facility †
Petroleum hydrocarbons	X	
Petroleum VOCs	X	
Halogenated VOCs	X	X

‡ As defined by OAR 340-122-115(30) † As defined by OAR 340-122-115(34)

Part ❷

OBSERVED IMPACTS ASSOCIATED WITH THE SITE	Finding
Onsite vegetation (None, Limited, Extensive)	L
Vegetation in the locality of the site (None, Limited, Extensive)	L
Onsite wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other (None, Limited, Extensive)	N
Wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other in the locality of the site (None, Limited, Extensive)	N
Other readily observable impacts (None, Discuss below)	

Discussion:

Facility is entirely developed and paved. Vegetation is very limited, consisting of only a landscape box near the front entrance and a small strip of grass near the cardlock (see Figure 3 of RI Report). The Facility vicinity is also largely unvegetated including trees along the streets, and an occasional strip of vegetation at a property boundary.

No wildlife is typically observed at the Facility.

ATTACHMENT 1
Ecological Scoping Checklist (cont'd)

Part ❸

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding	
Terrestrial - Wooded		
Percentage of site that is wooded	0%	
Dominant vegetation type (**E**vergreen, **D**eciduous, **M**ixed)	NA	**P ***
Prominent tree size at breast height, i.e., four feet (<6", 6" to 12", >12")	NA	
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	NA	
Terrestrial - Scrub/Shrub/Grasses		
Percentage of site that is scrub/shrub	0%	
Dominant vegetation type (**S**crub, **Sh**rub, **G**rasses, **O**ther)	NA	**P**
Prominent height of vegetation (<2', 2' to 5', >5')	NA	
Density of vegetation (**D**ense, **P**atchy, **S**parse)	NA	**P**
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	None	
Terrestrial - Ruderal		
Percentage of site that is ruderal	0%	
Dominant vegetation type (**L**andscaped, **A**griculture, **B**are ground)	NA	**P**
Prominent height of vegetation (0', >0' to <2', 2' to 5', >5')	NA	
Density of vegetation (**D**ense, **P**atchy, **S**parse)	NA	**P**
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	None	
Aquatic - Non-flowing (lentic)		
Percentage of site that is covered by lakes or ponds	0%	
Type of water bodies (**L**akes, **P**onds, **V**ernal pools, **I**mpoundments, **Lag**oon, **R**eservoir, **C**anal)	NA	
Size (acres), average depth (feet), trophic status of water bodies	NA	
Source water (**R**iver, **St**ream, **G**roundwater, **I**ndustrial discharge, **Su**rface water runoff)	NA	
Water discharge point (**N**one, **R**iver, **St**ream, **G**roundwater, **W**etlands impoundment)	NA	
Nature of bottom (**M**uddy, **R**ocky, **S**and, **C**oncrete, **O**ther)	NA	**P**
Vegetation present (**S**ubmerged, **E**mergent, **F**loating)	NA	**P**
Obvious wetlands present (**Y**es / **N**o)	N	
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds, **M**ammals, **O**ther)	None	
Aquatic - Flowing (lotic)		
Percentage of site that is covered by rivers, streams (brooks, creeks), intermittent streams, dry wash, arroyo, ditches, or channel waterway	0%	
Type of water bodies (**R**ivers, **S**treams, **I**ntermittent Streams, **D**ry wash, **A**rroyo, **D**itches, **C**hannel waterway)	NA	
Size (acres), average depth (feet), approximate flow rate (cfs) of water bodies	NA	**P**
Bank environment (cover: **V**egetated, **B**are / slope: **S**teep, **G**radual / height (in feet))	NA	
Source water (**R**iver, **St**ream, **G**roundwater, **I**ndustrial discharge, **Su**rface water runoff)	NA	
Tidal influence (**Y**es / **N**o)	No	
Water discharge point (**N**one, **R**iver, **St**ream, **G**roundwater, **W**etlands impoundment)	NA	
Nature of bottom (**M**uddy, **R**ocky, **S**and, **C**oncrete, **O**ther)	NA	
Vegetation present (**S**ubmerged, **E**mergent, **F**loating)	NA	**P**
Obvious wetlands present (**Y**es / **N**o)	NA	
Evidence / observation of wildlife (**M**acroinvertebrates, **R**eptiles, **A**mphibians, **B**irds,	None	

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
Mammals, Other)	
Aquatic - Wetlands	
Obvious or designated wetlands present (Yes / No)	No
Wetlands suspected as site is/has (Adjacent to water body, in Floodplain, Standing water, Dark wet soils, Mud cracks, Debris line, Water marks)	NA
Vegetation present (Submerged, Emergent, Scrub/shrub, Wooded)	NA **P**
Size (acres) and depth (feet) of suspected wetlands	NA
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	NA
Water discharge point (None, River, Stream, Groundwater, Impoundment)	NA
Tidal influence (Yes / No)	NA
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	None

* **P**: Photographic documentation of these features is highly recommended.

Part ❹

ECOLOGICALLY IMPORTANT SPECIES / HABITATS OBSERVED
No terrestrial ecological habitat was observed. The Facility and immediate vicinity are developed
with industrial and commercial facilities.
The Willamette River is located 1,800 feet west of the Facility.

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surface waters?			X
AND			
Are ecologically important species or habitats present?	X		
AND			
Could hazardous substances reach these receptors via surface water?			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in surface waters. • Ability of hazardous substances to migrate to surface waters. • Terrestrial organisms may be dermally exposed to water-borne contaminants as a result of wading or swimming in contaminated waters. Aquatic receptors may be exposed through osmotic exchange, respiration or ventilation of surface waters. • Contaminants may be taken-up by terrestrial plants whose roots are in contact with surface waters. • Terrestrial receptors may ingest water-borne contaminants if contaminated surface waters are used as a drinking water source.			
Are hazardous substances present or potentially present in groundwater?	X		
AND			
Are ecologically important species or habitats present?	X		
AND			
Could hazardous substances reach these receptors via groundwater?			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in groundwater. • Ability of hazardous substances to migrate to groundwater. • Potential for hazardous substances to migrate via groundwater and discharge into habitats and/or surface waters. • Contaminants may be taken-up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone (~1m depth). • Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in sediments?		X	
AND			
Are ecologically important species or habitats present?			X
AND			
Could hazardous substances reach these receptors via contact with sediments?			X
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in sediment. • Ability of hazardous substances to leach or erode from surface soils and be carried into sediment via surface runoff. • Potential for contaminated groundwater to upwell through, and deposit contaminants in, sediments. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may be dermally exposed during dry periods. Aquatic receptors may be directly exposed to sediments or may be exposed through osmotic exchange, respiration or ventilation of sediment pore waters. • Terrestrial plants may be exposed to sediment in an area that is only periodically inundated with water. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may have direct access to sediments for the purposes of incidental ingestion. Aquatic receptors may regularly or incidentally ingest sediment while foraging.			
Are hazardous substances present or potentially present in prey or food items of ecologically important receptors?			X
AND			
Are ecologically important species or habitats present?			X
AND			
Could hazardous substances reach these receptors via consumption of food items?			X
When answering the above questions, consider the following: • Higher trophic level terrestrial and aquatic consumers and predators may be exposed through consumption of contaminated food sources. • In general, organic contaminants with log K_{ow} > 3.5 may accumulate in terrestrial mammals and those with a log K_{ow} > 5 may accumulate in aquatic vertebrates.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")

ATTACHMENT 2
Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
Are hazardous substances present or potentially present in surficial soils?	X		
AND			
Are ecologically important species or habitats present?		X	
AND			
Could hazardous substances reach these receptors via incidental ingestion of or dermal contact with surficial soils?		X	
When answering the above questions, consider the following: • Known or suspected presence of hazardous substances in surficial (~1m depth) soils. • Ability of hazardous substances to migrate to surficial soils. • Significant exposure via dermal contact would generally be limited to organic contaminants which are lipophilic and can cross epidermal barriers. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces by rain striking contaminated soils (i.e., rain splash). • Contaminants in bulk soil may partition into soil solution, making them available to roots. • Incidental ingestion of contaminated soil could occur while animals grub for food resident in the soil, feed on plant matter covered with contaminated soil or while grooming themselves clean of soil.			
Are hazardous substances present or potentially present in soils?	X		
AND			
Are ecologically important species or habitats present?		X	
AND			
Could hazardous substances reach these receptors via vapors or fugitive dust carried in surface air or confined in burrows?		X	
When answering the above questions, consider the following: • Volatility of the hazardous substance (volatile chemicals generally have Henry's Law constant > 10^{-5} atm-m^3/mol and molecular weight < 200 g/mol). • Exposure via inhalation is most important to organisms that burrow in contaminated soils, given the limited amounts of air present to dilute vapors and an absence of air movement to disperse gases. • Exposure via inhalation of fugitive dust is particularly applicable to ground-dwelling species that could be exposed to dust disturbed by their foraging or burrowing activities or by wind movement. • Foliar uptake of organic vapors would be limited to those contaminants with relatively high vapor pressures. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces.			

"Y" = yes; "N" = No, "U" = Unknown (counts as a "Y")