State of Oregon
Department of Environmental Quality Memorandum

Date: November 15, 2005

To: Union Station-Horse Barn (aka Station Place Redevelopment) file

From: Dan Hafley, Cleanup & Lower Willamette Section

Subject: No Further Action Proposal
Union Station-Horse Barn, Lots 1, 3, and 7
ECSI# 2407

PURPOSE

This memo provides a brief summary of investigation and cleanup action conducted on portions of the Union Station-Horse Barn (aka Station Place Redevelopment) site. The site is comprised of six lots (1, 2, 3, 4, 5, and 7) occupying 7.1 acres at the northeast corner of NW Lovejoy and NW 9th in downtown Portland (site location and layout maps are included as Attachments 1 and 2). The Portland Development Commission (PDC) signed a Letter Agreement with the Oregon Department of Environmental Quality (DEQ) on July 28, 1999 requesting technical assistance from Voluntary Cleanup Program (VCP) staff under DEQ's Independent Cleanup Pathway. In 2000, site contamination was determined to encompass both soil and groundwater, at which time the PDC requested full DEQ oversight of investigation and cleanup activities at the site. Multiple phases of site investigation and cleanup were subsequently completed with Voluntary Cleanup Program oversight. A no further action determination is proposed for Lots 1, 3, and 7 of the site which requires the approval of the DEQ Northwest Region Administrator. A public notice proposing to approve the completion of site remedial action is attached. Temporary capping of Lots 2, 4, and 5 has been completed pending site development (see Record of Decision discussion below).

ON-SITE REMEDY SELECTION

Following extensive investigation of soil and groundwater at the site, DEQ selected a remedial action for the site documented in a May 2003 Record of Decision (ROD). The ROD was approved by DEQ's Northwest Region Administrator for the on-site portion of the site to address volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals (lead and arsenic) in soil and/or groundwater exceeding risk-based concentrations. The on-site remedy outlined in the ROD consisted of the following:

- Capping all site lots (1 through 5, and 7) with 2 feet of clean fill. Where site development is to occur, asphalt or concrete may be substituted for a portion of the clean fill cover. A demarcation layer will be installed, where necessary, to mark the boundary between contaminated soil and clean fill.
- Installation of a vapor barrier and passive venting system to prevent the accumulation of organic vapors in buildings in the southwest portion of the site (Lots 1 and 2).
- Monitoring of groundwater at the site to confirm that significant off-site migration is not occurring. Implementation of contingency measures, if necessary.

- Temporary capping, installation of fencing, and application of erosion and runoff control measures in areas of the site where development was not expected to start within six months of the ROD. If development does not occur within 5 years of the ROD, capping of these areas will be performed.
- Placement of institutional controls on the site identifying site hazards, and requiring inspection and maintenance of the soil cap and vapor barrier. Institutional controls will also include a prohibition on site groundwater use. Institutional control protocols to be developed will include an Inspection and Maintenance Plan, Soil and Groundwater Management Plan, and Worker Notification and Protection Plan.
- The property owner shall provide access to areas outside of building footprints in the southwest site corner (Lots 1, 2, and 4), as necessary, for the implementation of remedial measures to address contamination that may be migrating from the site and impacting off-site receptors.

A remedy specific to the on-site portion of the site was selected at the request of the PDC to facilitate pending redevelopment. It was acknowledged at the time of the ROD that additional investigation was needed to confirm the nature and extent of off-site impacts to groundwater east and west of the site, some of which might be attributable to releases on the Union Station-Horse Barn site. This work was subsequently performed and is discussed below following discussion of on-site remedy work.

ON-SITE REMEDY IMPLEMENTATION

Following issuance of the ROD, an on-site Remedial Action Work Plan (RAWP, July 2003) was completed for the site by AMEC Earth & Environmental, Inc. (AMEC) and approved by DEQ. Site development was subsequently begun, commencing with demolition of site buildings and continuing with site pre-development grading. Some site monitoring wells were also abandoned. Pre-development work was completed to DEQ satisfaction and is documented in AMEC's August 2003 "Interim Remedial Action Closure Report for Infrastructure Improvements Construction". Implementation of remedial measures was subsequently performed on Lot 1, 3, and 7 as is discussed below.

A. Lots 7 and 3 Capping. Installation of the surface cap for Lot 7 was completed in 2003 concurrent with development of an at-grade paved parking lot over the entire lot. A closure report ("Lot 7 Closure Report") was submitted in August 2003 documenting installation of capping features consistent with the 2003 ROD and RAWP, and subsequently approved by DEQ. Capping of Lot 3 was completed in 2003 and 2004 concurrent with construction of a multi-story parking garage on the lot. Capping elements include hardscaping (concrete and asphalt) over the majority of the lot, with a few small areas of landscaping adjoining the structure where soil capping was performed. A closure report ("Lot 3 Closure Report") was initially submitted to DEQ in December 2004. A revised (based on DEQ comment) report was subsequently submitted in 2005 and approved by DEQ. The PDC has retained ownership of both lots.

B. Lot 1 Capping and Vapor Abatement and Monitoring. Capping of Lot 1, the most heavily impacted of the site lots, was completed concurrent with development of a high-rise residential tower on the Lot in 2004 and 2005. Cap materials consisted largely of concrete given that the high-rise covers the majority of Lot 1, but included soil in a few small landscaped areas adjoining the building. A passive vapor collection system and vapor barrier were also installed beneath the building slab to mitigate potential migration of vapors from residual groundwater contamination. Both were completed per the RAWP as is discussed in the Lot 1 Closure Report submitted to DEQ in August 2005, and approved in October 2005 following minor revisions.

As specified in the site Remedial Action Work Plan, two rounds of semi-annual vapor monitoring have been completed within the Lot 1 high-rise to confirm the effectiveness of the vapor collection/barrier system. Vapor sampling within and outside of the building was initially completed in December 2004 (see AMEC's "Semi-Annual Indoor Air Monitoring Report, December 2004"), and second round in August 2005 (report not yet submitted). No contaminants have been detected within the building that are expected to be the result of vapor migration from underlying groundwater. Two additional semi-annual and three annual monitoring tests are scheduled to be performed. Ownership of the lot was transferred from the PDC to the Housing Authority of Portland, the developer of the residential high-rise, in 2004.

C. Site-Wide Groundwater Monitoring. As specified in the ROD and RAWP, periodic groundwater monitoring has been occurring at the site since 2003 to confirm that the nature and extent of contamination as documented at the time of the ROD has not changed in a manner that would require modification of the site remedy. Semi-annual events were completed in June 2003, January 2004, July 2004, and February 2005. Annual events are scheduled for February 2006, 2007, and 2008. There have been no significant changes noted in the nature and extent of on-site groundwater contamination as the result of the sampling. Groundwater contamination below the site consists largely of manufactured gas plant (MGP)-related contaminants, the most notable being benzene and naphthalene. High concentrations of volatile and semi-volatile organic compounds released off-site or in the southwest corner of the site show significant downgradient (east) attenuation, to the point that they are not detected in the Alluvial aquifer and are present in only one deeper Troutdale Gravel Aquifer (TGA) well at the east property boundary (see additional discussion below).

D. Fencing, Temporary Capping, Deed Restrictions, Access. The ROD contained a number of provisions regarding restriction of site access, temporary capping, the need for recording of deed restriction documents, and the providing of access on Lots 1, 2, and 4 to facilitate off-site investigation work as necessary. All have been adequately addressed as follows: All necessary fencing and temporary capping of undeveloped site lots has been performed, but does not apply to the NFAs proposed for Lots 1, 3, and 7 as they have been fully developed. Deed restriction (Easement and Equitable Servitude) documents have been drafted and preliminarily approved by DEQ. These will be recorded with the property deed following the NFA public notice and comment period and prior to issuance of the NFA. All deed restrictions will include a prohibition on groundwater use at the site as specified in the ROD. Access has been provided on Lots 1, 2, and 4 to perform the off-site investigation work.

OFF-SITE INVESTIGATION

At the time of ROD issuance in 2003, contamination at the site was confined to the shallow (Alluvial) aquifer, and the uppermost portion of the underlying Troutdale Gravel Aquifer (TGA). It was further determined that any off-site migration was likely limited in extent. At the request of DEQ additional investigation was performed adjacent to and off-site starting in 2003 to confirm these assumptions. Investigation included construction of additional Alluvial and TGA wells at the east property boundary and a TGA well off-site to the east along NW Naito Parkway (Naito), and collection of soil, groundwater, and storm water samples from west along NW 9th Avenue. The work performed and results of each are briefly discussed below.

A. Off-Site Contamination-East. At the request of DEQ, four additional wells (two Alluvial and two upper TGA) wells were installed at the east (downgradient) property boundary in May 2003 and sampled to confirm an absence of off-site impacts. Contaminants were not detected in the Alluvial wells (LA-1 and -2) and one TGA well (TGA-6), however, VOCs and PAHs were detected in TGA well TGA-7,

indicating that some off-site migration of contaminants within the uppermost TGA was occurring (see Attachment 3 for well locations and most recent sampling results, and Attachment 4 for tabulated historical groundwater sampling results). Migration was determined to be occurring at a depth of approximately 70 feet below ground surface (bgs) at the property boundary, and continuing east beneath rail lines of historic Union Station and adjoining undeveloped commercial property (Union Station-Parcel A North, ECSI# 1962). Sampling of an additional TGA well (TGA-8) installed along NW Naito in early 2005 has indicated that significant site-related groundwater contamination does not extent beyond NW Naito. No impacts are therefore expected to the Willamette River which is located a few hundred feet beyond (east) of NW Naito.

B. Off-Site Contamination–West. It was known at the time of ROD completion that contamination in the Alluvial aquifer along the west side of the site was being drawn into the abutting NW 9th Avenue by subgrade utilities – specifically a 27-inch City of Portland (COP) storm sewer located at approximately 17 feet bgs, slightly below the top of the water table aquifer. It was further known that the 27-inch sewer ran north along the west side of the site before connecting with the nearby Tanner Creek Sewer, and discharging to the Willamette River. Leaks in the line were surmised to be lowering the water table in the area and drawing shallow groundwater to the west.

To assess potential off-site impacts, additional soil, groundwater, and sewer sampling were completed, and documented in AMEC's February 2005 "Off-Site Assessment Report". Sampling included the screening of soil and collection of groundwater samples along the western site perimeter and within NW 9th adjacent to or within sewer backfill. Stormwater samples were also collected in March and May 2004 within the sewer at manhole access points located upstream, adjacent to, and downstream of the site (see Attachment 5 for all sampling locations). The sampling was performed to supplement low flow sampling that had previously been performed in the sewer by RETEC (2002) and Hart Crowser (1997), during which only low levels of contaminants were detected in the sewer. [RETEC's 2002 investigation was performed to assess potential impacts from the HSR site located immediately west of NW 9th, and included both high and low water sewer sampling events and video inspection of the 27-inch sewer between NW Lovejoy and NW Naito. During the inspection, groundwater was observed to be entering the sewer in a number of locations, and staining was observed at numerous pipe joints suggesting past infiltration of contaminants from the Horse Barn and Hoyt Street Railyards sites. Water samples collected during high and low flow conditions - October and December 2002 - identified some non-carcinogenic polynuclear aromatic hydrocarbons in samples adjacent to the sites, however contaminant concentrations were below risk-based screening levels and generally not present in "down-pipe" samples collected within the main Tanner Creek Sewer near NW Naito. Similar results were found during the 1997 Hart Crowser sampling event. See Attachment 8 for RETEC sampling locations and results.]

Soil contamination was noted, and groundwater contaminants were detected, in a number of the exploratory borings completed by AMEC in 2004. Sampling results and risk screening information is presented in Attachment 6. MGP contaminants such as benzene and naphthalene were detected near the southwest corner of the site at or below the water table, having migrated into this area from either the Horse Barn or the adjacent U.S. Postal Service (USPS, ECSI# 2183) site, the latter being the location of the former MGP facility that generated contaminants impacting a number of area properties. Contamination detected in groundwater farther north near NW Northrup is more diesel-like and appears to be residual contamination from Hoyt Street Railyards (HSR, ECSI# 1080), a cleanup site to the immediate west across NW 9th that has undergone remediation under DEQ's Northwest Region Site Response Program. In the stormwater sampling, low levels of TPH and TPH constituents associated with both MGP waste and diesel were detected in sections of the storm sewer adjacent to the site. Contaminant concentrations generally decreased in sewer water downstream of the MGP and diesel-impacted areas, and were not detected at the point where the 27-inch sewer discharges to Tanner Creek Sewer (near NW Naito) during either sampling event. This investigation work confirmed the results of the 2002 RETEC investigation completed for HSR.

RESIDUAL RISK ANALYSIS

A. On-Site. Selected remedies for Lots 1, 3, and 7 at the site have been implemented consistent with both the 2003 DEQ Record of Decision, and AMEC's RAWP approved by DEQ. Capping of all three lots with a combination of soil and hardscaping was completed concurrent with site development, as was installation of a vapor collection system and barrier below the Lot 1 building to mitigate any vapor migration from groundwater. Two semi-annual air monitoring events have been performed to date confirming the effectiveness of the Lot 1 vapor mitigation system; two additional semi-annual events are to be followed by three annual events. If contaminants are detected in the building exceeding DEQ risk-based screening values, the passive vapor collection system beneath the site building will be modified to an active system as specified in the RAWP. The need for such an action is considered unlikely. Two years of stipulated semi-annual groundwater monitoring have been completed; three annual events remain starting in February 2006. On-site risk at Lots 1, 3, and 7 appears to have been adequately addressed. Future groundwater and vapor monitoring requirements, and the need for periodic cap inspection will be memorialized in a deed restriction document.

B. Off-Site Groundwater-East. Expanded groundwater monitoring completed at the request of DEQ has shown that contamination has migrated east beyond the property (via natural groundwater flow) onto adjoining commercial property to the east, but is not present at significant concentrations beyond NW Naito. Off-site, contamination is present in only the uppermost portion of the TGA at a depth approximately 60 feet bgs near the property boundary and 120 bgs near NW Naito. Maximum concentrations of benzene and naphthalene at the eastern property boundary are 1080 ug/l and 363 ug/l, respectively. Only naphthalene has been detected at NW Naito at 1.32 ug/l. Based on factors including the age of the release (70+ years), type of contaminants, and groundwater modeling work performed by AMEC for the site risk assessment, it is DEQ's expectation that the plume is unlikely to expand beyond its current boundaries. No impacts to the Willamette River lying east of NW Naito are therefore expected. It has already been determined through beneficial water use determinations completed for both the subject and adjoining Union Station-Parcel A North sites that that there is no current or reasonably likely use of shallow (Alluvial) groundwater beyond recharge to the Willamette River. Use of TGA groundwater for drinking purposes has also been ruled out. Use of deeper (TGA) groundwater is possible but considered unlikely given a number of factors including the general absence of such use in the area at present, and the expectation that pending development will preclude such use. DEQ will nevertheless require that a deed restriction be recorded for the off-site properties prohibiting groundwater use as is stipulated in the ROD for the subject site.

C. Off-Site Groundwater-West. Off-Site contamination extends a short distance to the west (beneath NW 9th Avenue) within the uppermost portion of the Alluvial aquifer, present at approximately 17' bgs. The source of the contamination is likely a combination of waste material discharged onto the Horse Barn site from the MGP facility located on the adjacent USPS site, and perhaps direct releases emanating from the USPS site. Off-site contamination has migrated via shallow groundwater around and into a 27" storm drain located beneath NW 9th. Levels of contaminants detected in soil and groundwater are generally below risk-based concentrations for excavation worker exposure - the only exposure scenario considered likely for contamination beneath the street. Some contaminated groundwater appears to be discharging to the 27-inch storm drain, however contaminant levels within the line were generally below DEQ aquatic Screening Level Values (SLVs, see DEQ's "Guidance for Ecological Risk Assessment", December 2001) during the 2004 sampling event, and no contaminants were detected in the sewer downgradient of the site. Based on this information, off-site migration does not appear to pose a significant human or ecological health risk.

It should also be noted that a number of actions were completed by the PDC to minimize potential migration of groundwater contaminants from the Horse Barn site to the 27-inch COP storm line as follows:

- As part of Horse Barn infrastructure development, a storm lateral was installed near NW Marshall connecting to the 27-inch COP sewer. During excavation for the line, significant contamination was encountered at the top of the water table. At the request of DEQ, a large quantity of controlled density fill (CDF) was placed where the lateral connected to the main line, and in around the lateral extending east into the subject site.
- The placement of CDF "plugs" in and surrounding a number of abandoned service laterals (emanating from the Horse Barn site) that were originally observed during video survey of the storm sewer by RETEC in 2002.
- Placement of CDF around the 27-inch line during improvements made near the intersection of NW Lovejoy and NW 9th Avenue.

DEQ CONCLUSIONS

DEQ has concluded that no further action appears to be necessary with regards to Sites 1, 3, and 7 at the Union Station-Horse Barn (aka Station Place Redevelopment) site. Engineering controls specified in the ROD have been implemented on these lots; Site 1 vapor monitoring and site-wide groundwater monitoring will continue through 2009 and 2008, respectively, to ensure that protectiveness has been achieved. An Easement and Equitable Servitude (EES) will be recorded with the property deed for each lot prior to DEQ issuance of no further action (NFA) letters. The EES documents (specific to the controls at each lot) will outline the nature and extent of remaining contamination at the site, the nature of engineering controls, and any inspection, maintenance, and reporting requirements for the controls. A prohibition on groundwater use will also be noted.

Following management approval of this memo, notice of the proposed NFA determinations will be published in the Oregon Secretary of State's Bulletin and The Oregonian and a 30-day public comment period will be provided. If no comment is received, EES documents will be recorded after which NFA letters will be issued. ECSI will subsequently be updated to reflect the NFA determinations.

Given that contamination has been identified both around and within the 27-inch sewer, the City of Portland will be notified of DEQ's proposed NFA determination for the site.

Other, Abandoned Tanner Creek Sewer. Site investigation associated with the Union Station-Horse Barn site also revealed the presence of contamination within what has been referred to as the Abandoned Tanner Creek Sewer, a 60 x 90-inch brick-lined sewer that formerly connected to the Tanner Creek Sewer (and the Willamette River) and is located below the east side of NW 9th Avenue adjacent to the subject site. During utility work at the intersection of NW 9th and NW Marshall in 2004, the abandoned sewer was encountered within the uppermost portion of the water table. The sewer line was breached (and later repaired) to facilitate utility installation, during which MGP waste-contaminated water (including free product) was observed discharging from the sewer. Geophysical survey work performed as part of the Horse Barn off-site investigation was unable to confirm that the abandoned sewer does not extend beyond NW Front Avenue as surmised; impacts to the Willamette River from sewer contamination are considered unlikely but cannot be ruled out. The apparent source of the contamination is discharge of MGP waste to the sewer, most likely from the USPS site, following abandonment of the sewer in 1908. DEQ recommends that a separate ECSI file be created for the abandoned sewer and related contamination, and that DEQ Site Assessment staff consider whether investigation and/or cleanup

of contamination is appropriate. The apparent owner of the MGP (now USPS) site during the release was Portland Terminal Railroad.

List of References

AMEC, "*Comprehensive Soil Remedial Investigation Report*", September 2002.

AMEC, "*Comprehensive Groundwater Remedial Investigation and Combined Soil and Groundwater Risk Assessment Report*", December 2002.

AMEC, "*Interim Remedial Action Closure Report for Infrastructure Improvements Construction*", August 2003.

AMEC, "*Remedial Action Closure Report", Station Place Redevelopment Site, Lot 7*", August 2003.

AMEC, "*Semi-Annual Groundwater Monitoring Report*", multiple reports from 2003, 2004, and 2005.

AMEC, "*Off-Site Assessment Report",* February 2005.

AMEC, "*Semi-Annual Indoor Air Monitoring Report, December 2004*", April 2005.

AMEC, "*Remedial Action Closure Report", Station Place Redevelopment Site, Lot 3*", July 2005.

AMEC, "*Remedial Action Closure Report", Station Place Redevelopment Site, Lot 1*", October 2005.

DEQ, "*Guidance for Ecological Risk Assessment*", December 2001.

DEQ Voluntary Cleanup Program Northwest Region files (ECSI# 2407)

RETEC, "*Tanner Creek Sewer Investigation and Evaluation Report, Former Hoyt Street Railyard*", February 2, 2004.

List of Attachments

Attachment 1 – Site Location Map

Attachment 2 – Site Layout Map

Attachment 3 – Well Location and Analytical Results Map

Attachment 4 – Groundwater Analytical Results

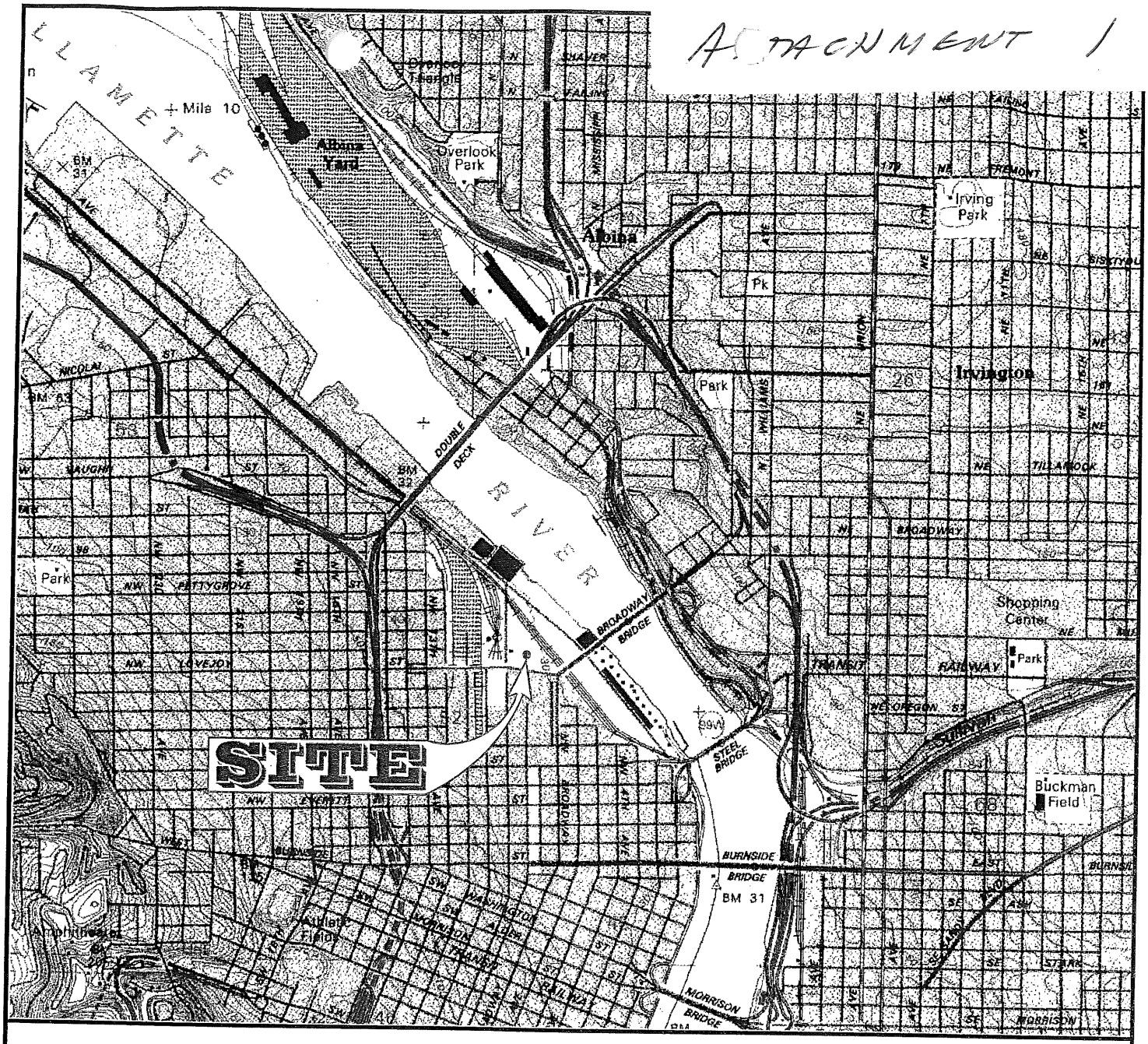
Attachment 5 – Off-Site (West) Sampling Locations Map

Attachment 6 – Off-Site (West) Soil and Groundwater Sampling Results and Risk Screening

Attachment 7 – Off-Site (West) Sewer Sampling Results and Risk Screening

Attachment 8 – RETEC 2002 Sewer Sampling Locations and Results

ATTACHMENT 1



ROAD CLASSIFICATION

Heavy–duty ——— Light–duty ———

Medium–duty ——— Unimproved dirt ======

U.S. Route State Route Interstate Route

PORTLAND, OR-WA

45122-E6-TF-024

1990

DMA 1475 II SW - SERIES V892

QUADRANGLE LOCATION

SCALE 1 : 24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

FIGURE 1

amec

7376 SW Durham Road
Portland, OR, U.S.A. 97224

W.O.	2-61M-10265-1
DESIGN	DH
DRAWN	DD
DATE	APRIL 2003
SCALE	1:24,000

STATION PLACE
N.W. 9th & LOVEJOY
PORTLAND, OREGON

SITE LOCATION MAP

AMEC DRAWING NO. K:\10000\10200\10265\DWG\SITE LOC 0703.DWG

ATTACHMENT 2

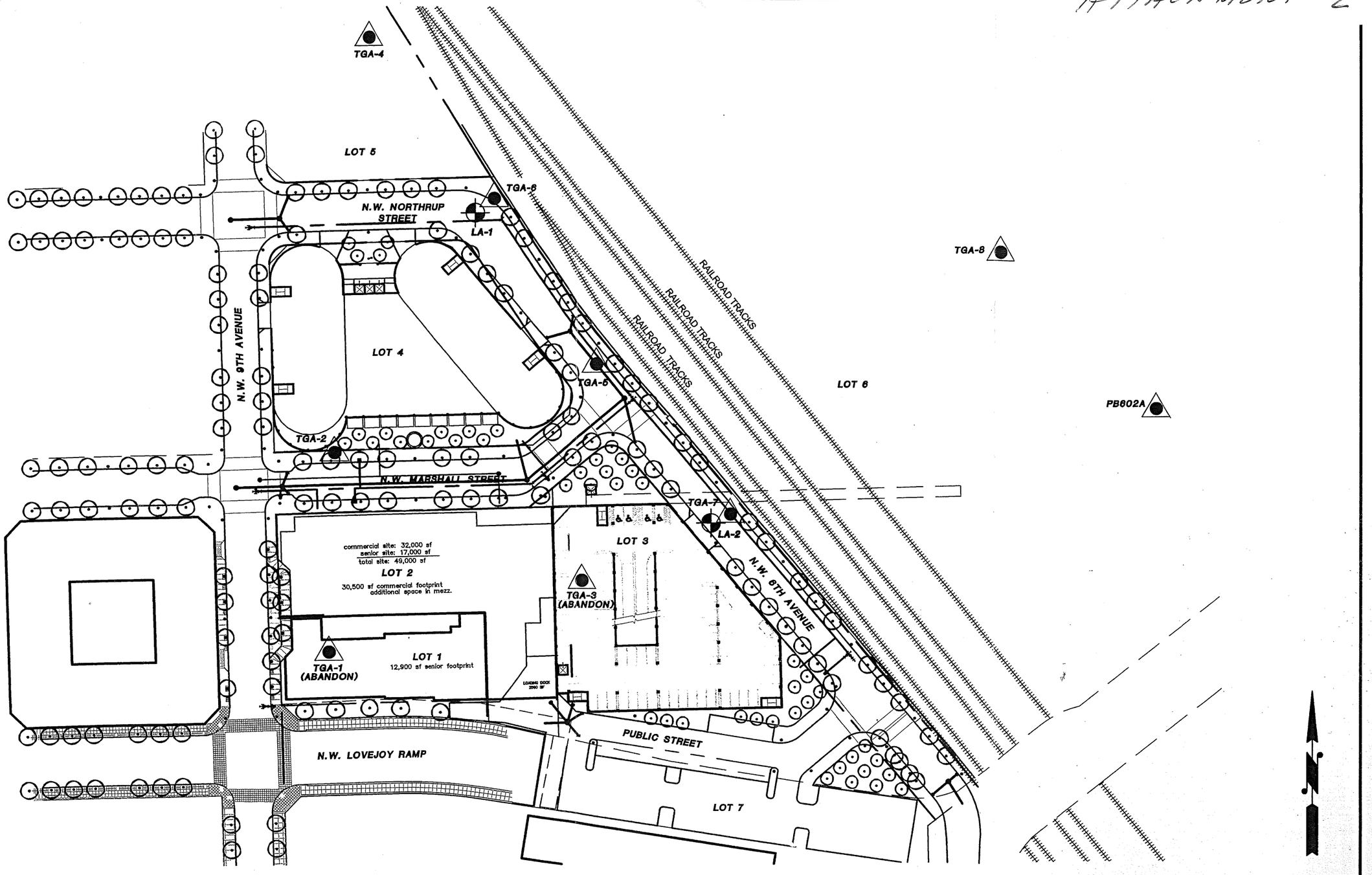


FIGURE 2

NOTE:
EXISTING SITE FEATURES FROM FIELD MEASUREMENTS BY AMEC EMPLOYEES. LOCATION OF THESE FEATURES ARE NOT FROM DATA GATHERED BY A REGISTERED LAND SURVEYOR AND SHOULD BE CONSIDERED APPROXIMATE.

amec
7376 SW Durham Road
Portland, OR, U.S.A. 97224

W.O.	2-61M-10265-1
DESIGN	DH
DRAWN	DD
DATE	JULY 2003
SCALE	1"=100'

STATION PLACE
N.W. 9th & LOVEJOY
PORTLAND, OREGON

SITE DEVELOPMENT PLAN

AMEC DRAWING NO. K: \ 10000 \ 10200 \ 10265 \ DWG \ Semi Annual GW Site Develop Plan Fig-2. DWG

ATTACHMENT 3

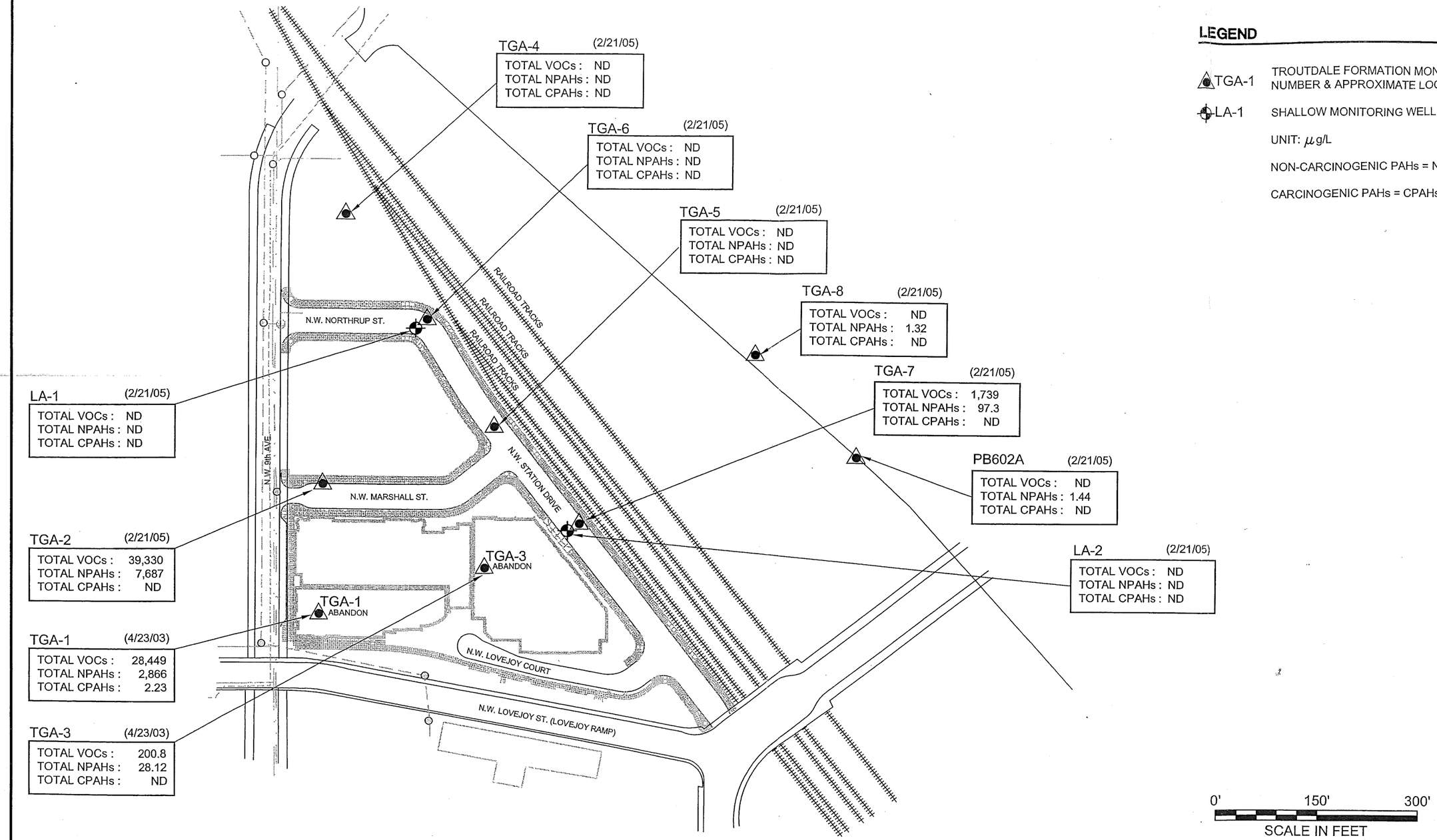


FIGURE 4

NOTE:
EXISTING SITE FEATURES FROM FIELD MEASUREMENTS BY AMEC EMPLOYEES. LOCATION OF THESE FEATURES ARE NOT FROM DATA GATHERED BY A REGISTERED LAND SURVEYOR AND SHOULD BE CONSIDERED APPROXIMATE.

amec
7376 S.W. Durham Road
Portland, OR, U.S.A. 97224

W.O.	3-61M-10265-A P-2
DESIGN	BL
DRAWN	DD
DATE	MARCH 2005
SCALE	1"=150'

STATION PLACE
PORTLAND, OREGON

SEMI ANNUAL GROUNDWATER MONITORING ANALYTICAL RESULTS FOR TOTAL VOCS, TOTAL NPAHS AND TOTAL CPAHS

AMEC DRAWING NO. K: \ 10000 \ 10200 \ 10265 \ PHASE A-TASK 2 \ DWG \ 0305 Semi Annual GW Analytical Results Fig-4. DWG

Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA1@45'	TGA1@45'	TGA1@80'	TGA1@100'	TGA1	TGA1	TGA1	TGA1	TGA1	TGA1
Sample Date:	Tap Water	11/27/2000	11/27/2000	11/28/2000	11/28/2000	12/21/2000	03/08/2001	06/21/2001	09/10/2001	12/27/2001	03/22/2002
Chloromethane	1.5	50 U	50 U	5.0 U	5.0 U	5.0 U	100 U	50 U	100 U	100 U	100 U
1,1-Dichloroethene	7[a]	50 U	50 U	1.0 U	1.0 U	1.0 U	20 U	10 U	20 U	20 U	20 U
2-Butanone(MEK)	1,900	500 U	500 U	20 U	20 U	20 U	200 U	100 U	100 U	100 U	100 U
Benzene	5[a]	6900	6900	0.66 J	1.0 U	1560	1210	1730	3320	2720	10500
Trichloroethene	5[a]	50 U	50 U	1.0 U	1.0 U	1.0 U	20 U	10 U	20 U	20 U	20 U
Toluene	1000[a]	10000	10000	0.79 J	1.0 U	2390	1810	1300	2140	1840	7310
Tetrachloroethene	5[a]	50 U	50 U	1.0 U	1.0 U	1.0 U	20 U	10 U	20 U	20 U	20 U
Ethylbenzene	700[a]	4200	4200	3.10	1.0 U	1350	1400	321	587	612	1730
m,p-Xylene	1,400	7200	7400	2.70	2.0 U	2410	2530	598	934	846	2470
o-Xylene	1,400	2400	2500	1.86	1.0 U	876	889	257	458	391	911
Total Xylenes	10,000[a]	9600	9900	4.56	3.0 U	3286	3419	855	1392	1237	3381
Styrene	100[a]	1400	1400	1.0 U	1.0 U	462	363	108	135	20 U	305
Isopropylbenzene	660	67	70	1.0 U	0.55 J	34.5	100 U	20 U	40 U	40 U	40 U
n-Propylbenzene	61	52	53	1.0 U	1.0 U	23.2	37.8	10 U	20 U	20 U	20 U
1,3,5-Trimethylbenzene	12	340	340	1.0 U	1.0 U	153	254	34.8	56.8	39.2	100 U
1,2,4-Trimethylbenzene	12	750	760	0.66 J	1.0 U	361	545	80.9	144	87.2	211
4-Isopropyltoluene	NP	50 U	50 U	1.0 U	1.0 U	4.77	20 U	20 U	40 U	40 U	40 U
1,2-Dichlorobenzene	600[a]	50 U	50 U	1.0 U	1.0 U	1.0 U	20 U	10 U	20 U	20 U	20 U
Naphthalene	6.2	11000	12000	25 U	25 U	5660	7560	1440	2120	1360	2820

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
U = Not Detected. Number represents reporting limit.
NP = No PRG has been estimated by EPA.

Attachment 4

Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

le Name:	PRG	TGA1	TGA1	TGA1	TGA1	TGA2@45'	TGA2@70'	TGA2@100'	TGA2	TGA2	TGA2
le Date:	Tap Water	06/20/2002	08/28/2002	01/14/2003	04/23/2003	12/04/2000	12/04/2000	12/05/2000	12/27/2001	03/21/2002	06/20/2002
omethane	1.5	250 U	100 U	500 U	500 U	50 U	5.0 U	5.0 U	250 U	250 U	250 U
chloroethene	7[a]	50 U	100 U	100 U	100 U	50 U	1.0 U	1.0 U	1250 U	50 U	50 U
anone(MEK)	1,900	500 U	1000 U	1000 U	1000 U	500 U	20 U	20 U	500 U	500 U	500 U
ene	5[a]	8250	8190	12100	11600	39100	3.83	1.0 U	4710	8940	7770
oroethene	5[a]	50 U	100 U	100 U	100 U	50 U	1.0 U	1.0 U	50 U	50 U	50 U
ne	1000[a]	5850	5300	7550	6800	37300	10.7	2.59	4380	8760	7960
hloro ne	5[a]	50 U	100 U	100 U	100 U	50 U	1.0 U	1.0 U	50 U	50 U	50 U
enzene	700[a]	1470	1250	2140	1910	1240	3.93	1.0 U	1350	1500	1270
ylene	1,400	1890	1870	2800	2400	10200	15.5	2.24	2880	4820	4340
ne	1,400	731	686	1080	910	3250	4.77	1.0 U	954	1660	1470
Xylenes	10,000[a]	150 U	2556	3880	3310	13450	20.3	2.24	3834	6480	150 U
e	100[a]	178	200	222	148	4160	2.34	1.0 U	50 U	950	1030
pylbenzene	660	100 U	200 U	200 U	200 U	50 U	1.0 U	1.0 U	100 U	100 U	100 U
ylbenzene	61	50 U	100 U	100 U	100 U	50 U	1.0 U	1.0 U	50 U	50 U	50 U
Trimethylbenzene	12	85.5	100 U	112	100 U	422	2.09	1.0 U	130	248	230
Trimethylbenzene	12	218	216	249	231	858	3.53	1.0 U	237	429	472
ropyltoluene	NP	100 U	200 U	200 U	200 U	50 U	1.0 U	1.0 U	100 U	100 U	100 U
chlorobenzene	600[a]	50 U	100 U	100 U	100 U	50 U	1.0 U	1.0 U	50 U	50 U	50 U
halene	6.2	3350	3840	6390	4450	11400	69.7	25 U	3300	3780	6880

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
U = Not Detected. Number represents reporting limit.
NP = No PRG has been estimated by EPA.

Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA2	TGA2	TGA2	TGA2	TGA2	TGA2	TGA2 DUP	TGA3@45'	TGA3@70'	TGA3@100'
Sample Date:	Tap Water	08/29/2002	01/14/2003	06/17/2003	01/19/2004	07/23/2004	02/21/2005	02/21/2005	11/30/2000	11/30/2000	12/01/2000
Chloromethane	1.5	500 U	250 U	500 U	50 U	250 U	250 U	250 U	0.92 J	5.0 U	1.0 U
1,1-Dichloroethene	7[a]	100 U	50 U	100 U	10 U	50 U	50 U	50 U	1.0 U	1.0 U	1.0 U
2-Butanone(MEK)	1,900	1000 U	500 U	1000 U	100 U	500 U	500 U	500 U	20 U	20 U	20 U
Benzene	5[a]	7210	8400	8010	1390	4820	8820	8800	1.0 U	4.17	1.0 U
Trichloroethene	5[a]	100 U	50 U	100 U	10 U	50 U	50 U	50 U	1.0 U	1.0 U	1.0 U
Toluene	1000[a]	6030	8770	8810	51.4	379	8680	8820	1.0 U	0.64 J	1.58
Tetrachloroethene	5[a]	100 U	50 U	100 U	10 U	50 U	50 U	50 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700[a]	793	1890	1470	185	667	1400	1450	1.0 U	1.64	1.0
m,p-Xylene	1,400	2810	6250	4970	352	1380	4490	4730	2.0 U	1.23	0.49 J
o-Xylene	1,400	978	2050	1600	117	450	1370	1430	1.0 U	1.12	1.0 U
Total Xylenes	10,000[a]	3788.0	8300	6570.0	469	1830	5860	6160	3.0 U	2.35	0.49 J
Styrene	100[a]	622	1310	984	10 U	50 U	672	708	1.0 U	1.0 U	1.0 U
Isopropylbenzene	660	200 U	100 U	200 U	20 U	100 U	100 U	100 U	0.54 J	0.58 J	0.67 J
n-Propylbenzene	61	100 U	50 U	100 U	10 U	50 U	50 U	50 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	12	124	355	276	10 U	50 U	227	242	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	12	276	731	564	13.2	66.5	468	487	1.0 U	0.59	1.0 U
4-Isopropyltoluene	NP	200 U	100 U	200 U	20 U	100 U	100 U	100 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600[a]	100 U	50 U	100 U	10 U	50 U	50 U	50 U	1.0 U	1.0 U	0.49 J
Naphthalene	6.2	4250	8270	8360	178	1310	7570	8420	25 U	25 U	25 U

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
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Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA3	TGA3	TGA3	TGA3	TGA3	TGA3	TGA3-DUP	TGA3	TGA3	TGA3
Sample Date:	Tap Water	12/21/2000	03/08/2001	06/20/2001	09/10/2001	12/27/2001	06/19/2002	06/19/2002	08/29/2002	01/14/2003	04/23/2003
Chloromethane	1.5	0.92 J	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U	5.0 U
1,1-Dichloroethene	7[a]	1.0 U	2.0 U	25 U	25 U	25 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
2-Butanone(MEK)	1,900	20 U	20 U	10 U	10 U	10.0 U	10 U	10 U	100 U	10 U	10 U
Benzene	5[a]	1090	472	59.7	10.9	1.00 U	13.1	15.3	1080	51.4	94.5
Trichloroethene	5[a]	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Toluene	1000[a]	30.4	6.22	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	16.4	1.0 U	1.11
etrachloroethene	5[a]	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Ethylbenzene	700[a]	291	134	15.0	2.17	1.0 U	2.49	3.25	292	19.4	27.2
m,p-Xylene	1,400	187	79.8	10.2	2.00 U	2.0 U	2.0 U	2.0 U	73.4	2.0 U	2.0 U
o-Xylene	1,400	231	120	14.3	2.08	1.0 U	2.19	2.40	220.0	11.3	16.2
Total Xylenes	10,000[a]	418	200	24.5	2.08	3.0 U	3.0 U	3.0 U	293.4	11.3	16.2
Styrene	100[a]	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Isopropylbenzene	660	11.1	10 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U	2.0 U	2.0 U
n-Propylbenzene	61	3.81	2.12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	12	5.08	2.88	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	12	65.7	28.6	3.65	1.0 U	1.0 U	1.0 U	1.0 U	64.0	3.52	4.15
4-Isopropyltoluene	NP	2.23	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U	2.0 U	2.0 U
1,2-Dichlorobenzene	600[a]	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Naphthalene	6.2	994	395	54.3	6.30	2.0 U	7.21	10.7	769	32.6	57.6

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
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Table 3

Selected VOC Groundwater Analytical Results

Station Place Redevelopment Site

Portland, Oregon

(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA4@52'	TGA4@70'	TGA4@100'	TGA4	TGA4	TGA4	TGA4	TGA4	TGA4	TGA4
Sample Date:	Tap Water	02/21/2001	02/21/2001	02/22/2001	03/08/2001	06/20/2001	09/10/2001	12/27/2001	03/21/2002	06/19/2002	08/29/2002
Chloromethane	1.5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	7[a]	**2.23**	**2.19**	**2.02**	**2.22**	25 U	**1.35**	**1.31**	1.0 U	**1.81**	1.0 U
2-Butanone(MEK)	1,900	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5[a]	**4.15**	**2.97**	**2.90**	**4.47**	**3.38**	**2.17**	**2.10**	1.0 U	**2.43**	1.0 U
Toluene	1000[a]	1.0 U	1.0 U	1.0 U	**1.00**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5[a]	1.0 U	1.0 U	1.0 U	**1.84**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	1,400	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,400	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	10,000[a]	3.0 U	3.0 U	3.0 U	7.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Styrene	100[a]	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene	660	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
n-Propylbenzene	61	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Isopropyltoluene	NP	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	600[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	6.2	25 U	25 U	25 U	25 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)

[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)

U = Not Detected. Number represents reporting limit.

NP = No PRG has been estimated by EPA.

Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA4	TGA4	TGA4	TGA4	TGA5@70-76'	TGA5@88'	TGA5@109'	TGA5	TGA5	TGA5
Sample Date:	Tap Water	06/17/2003	01/22/2004	07/23/2004	02/21/2005	03/08/2001	03/09/2001	03/09/2001	03/26/2001	06/20/2001	09/10/2001
Chloromethane	1.5	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	7[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	25 U	25 U
2-Butanone(MEK)	1,900	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	1,400	2.0 U	2.0 U	2.00 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	1,400	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylenes	10,000[a]	3.0 U	3.0 U	3.00 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	1.0 U	1.0 U
Styrene	100[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene	660	2.0 U	2.0 U	2.00 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U
n-Propylbenzene	61	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	12	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	12	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Isopropyltoluene	NP	2.0 U	2.0 U	2.00 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	600[a]	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	6.2	2.0 U	2.0 U	2.00 U	2.0 U	25 U	25 U	25 U	2.95	2.0 U	2.0 U

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
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Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5
Sample Date:	Tap Water	12/27/2001	03/21/2002	06/20/2002	08/29/2002	01/14/2003	06/17/2003	09/17/2003	01/19/2004	07/23/2004	02/21/2005
Chloromethane	1.5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U
1,1-Dichloroethene	7[a]	25 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
2-Butanone(MEK)	1,900	10 U	10 U	10 U	10 U	10 U	353	10 U	10 U	10.0 U	10 U
Benzene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Trichloroethene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Toluene	1000[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Tetrachloroethene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Ethylbenzene	700[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
m,p-Xylene	1,400	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U
o-Xylene	1,400	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Total Xylenes	10,000[a]	1.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.00 U	3.0 U
Styrene	100[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Isopropylbenzene	660	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U
n-Propylbenzene	61	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
1,3,5-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
1,2,4-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
4-Isopropyltoluene	NP	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U
1,2-Dichlorobenzene	600[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Naphthalene	6.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
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Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA6@149'	TGA6@169'	TGA6	TGA6	TGA6-DUP	TGA6	TGA6	TGA7@59'	TGA7@99'	TGA7
Sample Date:	Tap Water	05/21/2003	05/21/2003	06/17/2003	01/16/2004	01/16/2004	07/23/2004	02/21/2005	05/19/2003	05/20/2003	06/17/2003
Chloromethane	1.5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	2.0 U	1.0 U	5.0 U
1,1-Dichloroethene	7[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
2-Butanone(MEK)	1,900	10 U	10 U	10 U	10 U	10 U	10.0 U	10 U	20 U	10 U	50 U
Benzene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	**340**	1.0 U	**396**
Trichloroethene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
Toluene	1000[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	**3.48**	1.0 U	5.0 U
Tetrachloroethene	5[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
Ethylbenzene	700[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	**87.5**	1.0 U	**84.2**
m,p-Xylene	1,400	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U	**70.3**	1.0 U	**64.4**
o-Xylene	1,400	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	**86.6**	1.0 U	**94.8**
Total Xylenes	10,000[a]	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.00 U	3.0 U	**156.9**	2.0 U	**159.2**
Styrene	100[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
Isopropylbenzene	660	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U	**4.70**	2.0 U	10 U
n-Propylbenzene	61	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
1,3,5-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
1,2,4-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	**29.8**	1.0 U	**27.4**
4-Isopropyltoluene	NP	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	10 U	5.0 U	25 U
1,2-Dichlorobenzene	600[a]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	2.0 U	1.0 U	5.0 U
Naphthalene	6.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U	**42.9**	2.0 U	**31.5**

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
U = Not Detected. Number represents reporting limit.
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Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	TGA7-DUP	TGA7	TGA7	TGA7	TGA7	TGA-8	PB602A	PB602A	PB602A	PB602A
Sample Date:	Tap Water	06/17/2003	09/17/2003	01/16/2004	07/23/2004	02/21/2005	02/21/2005	11/26/2003	01/19/2004	07/23/2004	02/21/2005
Chloromethane	1.5	5.0 U	5.0 U	50 U	50.0 U	50 U	1.0 U	1.0 U	1.0 U	5.00 U	1.0 U
1,1-Dichloroethene	7[a]	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
2-Butanone(MEK)	1,900	50 U	50 U	100 U	100 U	100 U	10 U	10 U	10 U	10.0 U	10 U
Benzene	5[a]	**403**	**877**	**911**	**1080** U	**952**	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Trichloroethene	5[a]	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Toluene	1000[a]	5.0 U	5.95	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Tetrachloroethene	5[a]	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Ethylbenzene	700[a]	**86.6**	**101**	**211**	**292**	**185**	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
m,p-Xylene	1,400	**66.8**	**100**	**111**	**137**	**73.1**	1.0 U	1.0 U	1.0 U	2.00 U	1.0 U
o-Xylene	1,400	**99.2**	**158**	**140**	**119**	**136**	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Total Xylenes	10,000[a]	**166.0**	**258**	**251**	**256**	**209**	2.0 U	2.0 U	2.0 U	3.00 U	2.0 U
Styrene	100[a]	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Isopropylbenzene	660	10 U	10 U	20 U	20.0 U	20 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U
n-Propylbenzene	61	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
1,3,5-Trimethylbenzene	12	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
1,2,4-Trimethylbenzene	12	**29.0**	**38.8**	**54.9**	**53.4**	**50.4**	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
4-Isopropyltoluene	NP	25 U	25 U	20 U	20.0 U	20 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U
1,2-Dichlorobenzene	600[a]	5.0 U	5.0 U	10 U	10.0 U	10 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Naphthalene	6.2	**32.8**	**120**	**206**	**363**	**133**	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
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Table 3
Selected VOC Groundwater Analytical Results
Station Place Redevelopment Site
Portland, Oregon
(results in microgram per liter [µg/L])

Sample Name:	PRG	LA1@82-86'	LA1	LA1	LA1	LA1	LA2@49-53'	LA2	LA2	LA2	LA2
Sample Date:	Tap Water	04/24/2003	06/18/2003	01/16/2004	07/23/2004	02/21/2005	04/24/2003	06/18/2003	01/16/2004	07/23/2004	02/21/2005
Chloromethane	1.5	1.0 U	1.0 U	1.0 U	5.00 U	1.0 U	1.0 U	1.0 U	1.0 U	5.00 U	1.0 U
1,1-Dichloroethene	7[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
2-Butanone(MEK)	1,900	10 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U	10.0 U	10 U
Benzene	5[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Trichloroethene	5[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Toluene	1000[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Tetrachloroethene	5[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
thylbenzene	700[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
m,p-Xylene	1,400	1.0 U	1.0 U	1.0 U	2.00 U	1.0 U	1.0 U	1.0 U	1.0 U	2.00 U	1.0 U
o-Xylene	1,400	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Total Xylenes	10,000[a]	2.0 U	2.0 U	2.0 U	3.00 U	2.0 U	2.0 U	2.0 U	2.0 U	3.00 U	2.0 U
Styrene	100[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Isopropylbenzene	660	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U
n-Propylbenzene	61	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
1,3,5-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
1,2,4-Trimethylbenzene	12	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
4-Isopropyltoluene	NP	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U
1,2-Dichlorobenzene	600[a]	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.0 U
Naphthalene	6.2	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U	2.0 U	2.0 U	2.0 U	2.00 U	2.0 U

Notes: PRG - Region IX Preliminary Remedial Goals for Tap Water (11-01-00)
[a] Safe Drinking Water Act Maximum Contaminant Level (MCL) (March 2001)
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TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA1@45'	TGA1@45' (Dup)	TGA1@80'	TGA1@100'	TGA1	TGA1	TGA1	TGA1
Sample Date:	Tap Water	11/27/2000	11/27/2000	11/28/2000	11/28/2000	12/21/2000	03/08/2001	06/21/2001	09/10/2001
Naphthalene	6.2	15000	1800	4.4	1.0	7400	5500	2110	0.1 U
2-Methylnaphthalene	NP	2300	670	1.4	0.3	510	-	-	-
1-Methylnaphthalene	NP	1400	400	0.9	0.2	820	-	-	-
Acenaphthylene	NP	600	200	0.6	0.1	140	270	175	34.3
Acenaphthene	370	500 U	100 U	0.2	0.1 U	31	77.6	47.0	10.1
Fluorene	240	500 U	120	0.6	0.1	43	145	94.0	15.4
Phenanthrene	NP	1200	650	3.6	0.9	72	451	309	47.0
Anthracene	1,800	550	180	0.7	0.2	11	115	78.0	12.4
Fluoranthene	1,500	500 U	200	0.7	0.2	10 U	108	81.0	8.80
Pyrene	180	710	390	1.3	0.3	12	178	127	12.4
Benzo(a)anthracene	0.092	500 U	100	0.2	0.1 U	2.8	53.7	44.0	3.24
Chrysene	9.2	500 U	110	0.2	0.1 U	2.7	60.7	46.0	3.30
Benzo(b)fluoranthene	0.092	500 U	100	0.2	0.1 U	1.9	20.6	16.0	1.18
Benzo(k)fluoranthene	0.92	500 U	100 U	0.1 U	0.1 U	0.56	26.6	21.0	1.62
Benzo(a)pyrene	0.0092	520	150	0.2	0.1 U	2.5	48.2	42.0	2.94
Indeno(1,2,3-c,d)pyrene	0.092	520	120	0.1	0.1	1.1	17.2	15.0	0.900
Dibenzo(a,h)anthracene	0.0092	550	120	0.1	0.1	0.23	5.51	6.00	0.360
Benzo(g,h,i)perylene	NP	500 U	100 U	0.1 U	0.1 U	1.2	23.8	20.0	1.16

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
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TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA1	TGA1	TGA1	TGA1	TGA1	TGA1	TGA2@45'	TGA2@70'	TGA2@100'
Sample Date:	Tap Water	12/27/2001	03/22/2002	06/20/2002	08/28/2002	01/14/2003	04/23/2003	12/04/2000	12/04/2000	12/05/2000
Naphthalene	6.2	1020	1720	1750	1450	4290	2,670	260000	310	4.4
2-Methylnaphthalene	NP	-	-	-	-	-	-	110000	110	1.9
1-Methylnaphthalene	NP	-	-	-	-	-	-	33000	80 U	1.1
Acenaphthylene	NP	40.3	52.0	44.7	47.8	230	60.7	12000	3.8	0.45
Acenaphthene	370	14.1	11.0	13.8	15	73.5	18.9	3000	1.2	0.2 U
Fluorene	240	20.4	20 U	20.7	22.9	113	22.8	9000	3.9	0.47
Phenanthrene	NP	55.5	35.1	60.8	64.2	470	41.8	38000	130	2.5
Anthracene	1,800	11.8	8.15	14.3	14	114	6.29	8300	2.8	0.51
Fluoranthene	1,500	11.9	7.22	18.2	16.3	145	4.55	13000	2.9	0.39
Pyrene	180	20.0	10.9	23.1	25.2	259	6.9	17000	5.0	0.71
Benzo(a)anthracene	0.092	4.59	3.33	9.25	8.91	78.8	1.0 U	6900	1.3	0.2 U
Chrysene	9.2	4.95	3.27	9.85	9.2	83.1	1.19	6700	1.3	0.2 U
Benzo(b)fluoranthene	0.092	1.85	1.17	4.09	4.08	29.2	1.0 U	4900	0.91	0.2 U
Benzo(k)fluoranthene	0.92	2.54	1.72	4.92	5.27	47.2	1.0 U	130	0.28	0.2 U
Benzo(a)pyrene	0.0092	4.52	3.22	9.00	8.70	78.80	1.04	6300	1.1	0.2 U
Indeno(1,2,3-c,d)pyrene	0.092	1.72	1.12	3.87	3.29	25.2	1.0 U	210	0.52	0.2 U
Dibenzo(a,h)anthracene	0.0092	1.0 U	0.360	2.0 U	1.63	8.03	2.0 U	88	0.26	0.2 U
Benzo(g,h,i)perylene	NP	2.53	1.50	5.14	4.34	33.9	33.9	3300	0.61	0.2 U

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
J = Concentration is less than reporting limit and is approximated.
NP = No PRG has been estimated by EPA.

TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA2	TGA2	TGA2	TGA2	TGA2	TGA2	TGA2	TGA2
Sample Date:	Tap Water	03/08/2001	06/21/2001	09/10/2001	12/27/2001	03/21/2002	06/20/2002	08/29/2002	01/14/2003
Naphthalene	6.2	1020	4830	0.1 U	4330	2470	4740	2060	4,880
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-
Acenaphthylene	NP	203	132	27.0	70.3	59.6	78.0	35.4	98.9
Acenaphthene	370	50 U	32.0	6.34	24.1	15.0	25.1	11.4	31.6
Fluorene	240	58.7	40.0	10.6	23.8	17.8	28.4	11.6	36.9
Phenanthrene	NP	102	50.0	24.4	27.6	21.3	39.3	14.8	48.8
Anthracene	1,800	18.4	12.0	6.78	4.37	3.22	5.84	2.55	7.42
Fluoranthene	1,500	9.42	10 U	4.96	1.33	0.959	2.32	2.5 U	2.33
Pyrene	180	13.7	10 U	7.98	2.31	1.48	1.98	2.5 U	3.79
Benzo(a)anthracene	0.092	3.68	10 U	2.40	1.0 U	0.1 U	0.109	2.5 U	1.0 U
Chrysene	9.2	4.24	10 U	2.58	1.0 U	0.1 U	0.123	2.5 U	1.0 U
Benzo(b)fluoranthene	0.092	3.97	10 U	0.940	1.0 U	0.1 U	0.1 U	2.5 U	1.0 U
Benzo(k)fluoranthene	0.92	1.00 U	10 U	1.28	1.0 U	0.1 U	0.1 U	2.5 U	1.0 U
Benzo(a)pyrene	0.0092	3.81	10 U	2.22	1.0 U	0.1 U	0.1 U	2.5 U	1.0 U
Indeno(1,2,3-c,d)pyrene	0.092	1.30	10 U	0.680	1.0 U	0.1 U	0.1 U	2.5 U	1.0 U
Dibenzo(a,h)anthracene	0.0092	2.00 U	10 U	0.280	1.0 U	0.1 U	0.1 U	2.5 U	1.0 U
Benzo(g,h,i)perylene	NP	1.68	10 U	0.780	1.0 U	0.1 U	0.1 U	2.5 U	1.0 U

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
J = Concentration is less than reporting limit and is approximated.
NP = No PRG has been estimated by EPA.

TABLE 4

PAH Analytical Results - Groundwater

Station Place Redevelopment Site

Portland, Oregon

(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA2	TGA2	TGA2	TGA2	TGA3@45'	TGA3@70'	TGA3@100'	TGA3
Sample Date:	**Tap Water**	**06/17/2003**	**01/19/2004**	**07/23/2004**	**02/21/2005**	**11/30/2000**	**11/30/2000**	**12/01/2000**	**12/21/2000**
Naphthalene	6.2	8,400	113	778	7410	0.5	2.5	0.5	770
2-Methylnaphthalene	NP	-	-	-	-	0.2	0.6	0.1	52
1-Methylnaphthalene	NP	-	-	-	-	0.2	0.4	0.1 U	66
Acenaphthylene	NP	122	0.195	6.10	116	0.1	0.1	0.1 U	0.35
Acenaphthene	370	36.9	0.710	5.00 U	42.1	0.1 U	0.1	0.1 U	20 U
Fluorene	240	100 U	0.173	5.00 U	44.3	0.1	0.1	0.1 U	3.0
Phenanthrene	NP	65.1	0.185	5.00 U	58.0	1.8	0.9	1.0	1.8
Anthracene	1,800	9.09	0.1 U	5.00 U	8.93	0.3	0.2	0.2	0.42
Fluoranthene	1,500	2.74	0.1 U	5.00 U	2.92	0.4	0.2	0.2	0.2 U
Pyrene	180	3.84	0.1 U	5.00 U	4.26	0.7	0.4	0.4	0.2 U
Benzo(a)anthracene	0.092	1.0 U	0.1 U	5.00 U	5.00 U	0.1 U	0.1 U	0.1 U	0.2 U
Chrysene	9.2	1.0 U	0.1 U	5.00 U	5.00 U	0.1 U	0.1 U	0.1 U	0.2 U
Benzo(b)fluoranthene	0.092	1.0 U	0.1 U	5.00 U	5.00 U	0.1 U	0.1 U	0.1 U	0.2 U
Benzo(k)fluoranthene	0.92	1.0 U	0.1 U	5.00 U	5.00 U	0.1 U	0.1 U	0.1 U	0.2 U
Benzo(a)pyrene	0.0092	1.0 U	0.1 U	5.00 U	5.00 U	0.1 U	0.1 U	0.1 U	0.2 U
Indeno(1,2,3-c,d)pyrene	0.092	1.0 U	0.1 U	5.00 U	5.00 U	0.1	0.1	0.1	0.2 U
Dibenzo(a,h)anthracene	0.0092	1.0 U	0.1 U	10.0 U	10.0 U	0.1	0.1	0.1	0.2 U
Benzo(g,h,i)perylene	NP	1.0 U	0.1 U	5.00 U	5.00 U	0.1 U	0.1 U	0.1 U	0.2 U

Notes:

[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)

U = Not Detected. Number represents reporting limit.

J = Concentration is less than reporting limit and is approximated.

NP = No PRG has been estimated by EPA.

TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA3	TGA3	TGA3	TGA3	TGA3	TGA3-DUP	TGA3	TGA3	TGA3
Sample Date:	Tap Water	03/08/2001	06/20/2001	09/10/2001	12/27/2001	06/19/2002	06/19/2002	08/29/2002	01/14/2003	4/23/2003
Naphthalene	6.2	291	27.7	6.78	0.1 U	0.642	1.78	2.43	21.2	26.2
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	0.252	0.1 U	0.600	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	370	11.2	1.26	0.280	0.1 U	0.1 U	0.1 U	0.142	0.841	1.220
Fluorene	240	1.19	0.140	0.460	0.1 U	0.1 U	0.1 U	0.1 U	0.141	0.238
Phenanthrene	NP	1.82	0.560	1.52	0.1 U	0.1 U	0.1 U	0.1 U	0.320	0.463
Anthracene	1,800	0.368	0.100	0.360	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	1,500	0.115	0.1 U	0.220	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	180	0.164	0.1 U	0.300	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)anthracene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	9.2	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
Benzo(b)fluoranthene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.92	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.0092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-c,d)pyrene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzo(a,h)anthracene	0.0092	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	NP	0.1 U	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:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
J = Concentration is less than reporting limit and is approximated.
NP = No PRG has been estimated by EPA.

TABLE 4

PAH Analytical Results - Groundwater

Station Place Redevelopment Site

Portland, Oregon

(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA4@52'	TGA4@70'	TGA4@100'	TGA4	TGA4	TGA4	TGA4	TGA4	TGA4
Sample Date:	**Tap Water**	**02/21/2001**	**02/21/2001**	**02/22/2001**	**03/08/2001**	**06/20/2001**	**09/10/2001**	**12/27/2001**	**03/21/2002**	**06/19/2002**
Naphthalene	6.2	0.1 U	0.1 U	0.1 U	0.839	0.1 U	0.1 U	0.174	0.1 U	0.1 U
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	5.0 U	5.0 U	5.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	370	5.0 U	5.0 U	5.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	240	5.0 U	5.0 U	5.0 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenanthrene	NP	0.160	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Anthracene	1,800	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	1,500	0.294	0.120	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	180	0.412	0.169	0.119	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)anthracene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	9.2	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
Benzo(b)fluoranthene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.92	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.0092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-c,d)pyrene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzo(a,h)anthracene	0.0092	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	NP	0.1 U	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:

[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)

U = Not Detected. Number represents reporting limit.

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TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA4	TGA4	TGA4	TGA4	TGA4	TGA5@70-76'	TGA5@88'	TGA5@109'	TGA5
Sample Date:	Tap Water	08/29/2002	06/17/2003	01/22/2004	07/23/2004	02/21/2005	03/08/2001	03/09/2001	03/09/2001	03/26/2001
Naphthalene	6.2	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	2.49	0.1 U
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	370	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	240	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenanthrene	NP	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.180	0.1 U	0.1 U	0.1 U
Anthracene	1,800	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	1,500	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.163	0.1 U	0.1 U	0.1 U
Pyrene	180	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.187	0.122	0.103	0.1 U
Benzo(a)anthracene	0.092	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	9.2	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	0.092	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.92	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.0092	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-c,d)pyrene	0.092	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzo(a,h)anthracene	0.0092	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	NP	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
J = Concentration is less than reporting limit and is approximated.
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TABLE 4

PAH Analytical Results - Groundwater

Station Place Redevelopment Site

Portland, Oregon

(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5	TGA5
Sample Date:	**Tap Water**	**06/20/2001**	**09/10/2001**	**12/27/2001**	**03/21/2002**	**06/20/2002**	**08/29/2002**	**01/14/2003**	**06/17/2003**	**09/17/2003**
Naphthalene	6.2	0.1 U	0.1 U	0.364	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	370	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	240	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenanthrene	NP	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Anthracene	1,800	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	1,500	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	180	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)anthracene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	9.2	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
Benzo(b)fluoranthene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.92	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.0092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-c,d)pyrene	0.092	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzo(a,h)anthracene	0.0092	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	NP	0.1 U	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:

[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)

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TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA5	TGA5	TGA5	TGA6@149	TGA6@169	TGA6	TGA6	TGA6-DUP	TGA6
Sample Date:	**Tap Water**	**01/19/2004**	**07/23/2004**	**02/21/2005**	**05/21/2003**	**05/21/2003**	**06/17/2003**	**01/16/2004**	**01/16/2004**	**07/23/2004**
Naphthalene	6.2	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Acenaphthene	370	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Fluorene	240	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Phenanthrene	NP	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Anthracene	1,800	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Fluoranthene	1,500	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Pyrene	180	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(a)anthracene	0.092	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Chrysene	9.2	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(b)fluoranthene	0.092	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(k)fluoranthene	0.92	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(a)pyrene	0.0092	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Indeno(1,2,3-c,d)pyrene	0.092	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U
Dibenzo(a,h)anthracene	0.0092	0.2 U	0.200 U	0.200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U
Benzo(g,h,i)perylene	NP	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.100 U

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
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TABLE 4

PAH Analytical Results - Groundwater

Station Place Redevelopment Site

Portland, Oregon

(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA6	TGA7@59	TGA7@99	TGA7	TGA7-DUP	TGA7	TGA7	TGA7	TGA7
Sample Date:	**Tap Water**	**02/21/2005**	**05/19/2003**	**05/19/2003**	**06/17/2003**	**06/17/2003**	**09/17/2003**	**01/16/2004**	**07/23/2004**	**02/21/2005**
Naphthalene	6.2	0.100 U	33.7	0.1 U	16.3	20.8	87.5	81.0	202	85.6
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	0.100 U	0.146	0.1 U	0.1 U	0.1 U	0.122	0.1 U	1 U	1 U
Acenaphthene	370	0.100 U	7.49	0.1 U	4.47	5.07	7.56	7.36	15.8	9.25
Fluorene	240	0.100 U	1.61	0.1 U	0.1 U	0.795	1.08	0.892	1.28	1.18
Phenanthrene	NP	0.100 U	1.74	0.1 U	0.649	0.78	1.25	1.16	2.08	1.17
Anthracene	1,800	0.100 U	0.162	0.1 U	0.1 U	0.1 U	0.136	0.111	1.00 U	0.102
Fluoranthene	1,500	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Pyrene	180	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Benzo(a)anthracene	0.092	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Chrysene	9.2	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Benzo(b)fluoranthene	0.092	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Benzo(k)fluoranthene	0.92	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Benzo(a)pyrene	0.0092	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Indeno(1,2,3-c,d)pyrene	0.092	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U
Dibenzo(a,h)anthracene	0.0092	0.200 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.00 U	2.00 U
Benzo(g,h,i)perylene	NP	0.100 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.00 U	1.00 U

Notes:

[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)

U = Not Detected. Number represents reporting limit.

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TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	TGA8	PB602A	PB602A	PB602A	PB602A	LA1@82-86	LA1	LA1	LA1
Sample Date:	Tap Water	02/21/2005	11/26/2004	01/19/2004	07/23/2004	02/21/2005	04/24/2003	06/18/2003	01/16/2004	07/23/2004
Naphthalene	6.2	1.32	0.1 U	0.1 U	0.100 U	1.44	0.1 U	0.1 U	0.132	0.100 U
2-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-	-	-	-
Acenaphthylene	NP	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Acenaphthene	370	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Fluorene	240	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Phenanthrene	NP	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Anthracene	1,800	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Fluoranthene	1,500	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Pyrene	180	1.00 U	0.1 U	0.1 U	0.400 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(a)anthracene	0.092	1.00 U	0.1 U	0.1 U	0.400 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Chrysene	9.2	1.00 U	0.1 U	0.1 U	0.400 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(b)fluoranthene	0.092	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(k)fluoranthene	0.92	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Benzo(a)pyrene	0.0092	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Indeno(1,2,3-c,d)pyrene	0.092	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U
Dibenzo(a,h)anthracene	0.0092	2.00 U	0.2 U	0.2 U	0.200 U	0.200 U	0.2 U	0.2 U	0.2 U	0.200 U
Benzo(g,h,i)perylene	NP	1.00 U	0.1 U	0.1 U	0.100 U	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
J = Concentration is less than reporting limit and is approximated.
NP = No PRG has been estimated by EPA.

TABLE 4
PAH Analytical Results - Groundwater
Station Place Redevelopment Site
Portland, Oregon
(results in micrograms per liter [µg/L])

Sample Name:	PRG[a]	LA1	LA2@49-53	LA2	LA2	LA2	LA2
Sample Date:	**Tap Water**	**02/21/2005**	**04/24/2003**	**06/18/2003**	**01/16/2004**	**07/23/2004**	**02/21/2005**
Naphthalene	6.2	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
2-Methylnaphthalene	NP	-	-	-	-	-	-
1-Methylnaphthalene	NP	-	-	-	-	-	-
Acenaphthylene	NP	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Acenaphthene	370	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Fluorene	240	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Phenanthrene	NP	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Anthracene	1,800	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Fluoranthene	1,500	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Pyrene	180	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Benzo(a)anthracene	0.092	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Chrysene	9.2	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Benzo(b)fluoranthene	0.092	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Benzo(k)fluoranthene	0.92	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Benzo(a)pyrene	0.0092	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Indeno(1,2,3-c,d)pyrene	0.092	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U
Dibenzo(a,h)anthracene	0.0092	0.200 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U
Benzo(g,h,i)perylene	NP	0.100 U	0.1 U	0.1 U	0.1 U	0.100 U	0.100 U

Notes:
[a] PRG-Region IX Preliminary Remedial Goals for Tap Water (11/01/00)
U = Not Detected. Number represents reporting limit.
J = Concentration is less than reporting limit and is approximated.
NP = No PRG has been estimated by EPA.

ATTACHMENT 5

N.W. NAITO PARKWAY

N.W. LOVEJOY STREET

U.S. POSTAL SERVICE FACILITY

RASS-11

RASS-10

RASS-8

RASS-5

RASS-7

RASS-9

RASS-6

ACTIVE TANNER CREEK SEWER

LATERAL D

LATERAL C

LATERAL B

LATERAL A

SANITARY

HB-2

HB-4

HB-7

MW-5

MW-4

OS-1

HB11/11D

HBMW-2

OS-2

HB-16

OS-3

HB-22

OS-4

HBMW-6A

HB-29

HBMW-6

BF-1

BF-2

BF-3

BF-4

SD

N.W. 9TH AVENUE

N.W. OVERTON ST.

N.W. NORTHRUP ST.

N.W. MARSHALL ST.

FORMER BURLINGTON NORTHERN DEPOT (HOYT STREET YARDS)

LEGEND

- MANHOLE LOCATIONS
- ABANDONED TANNER CREEK SEWER
- SANITARY SEWER
- STORM SEWER
- RAILROAD
- SIDEWALK
- STORM SEWER CATCH BASIN
- BF-3 BACKFILL BORING FOR OFF-SITE ASSESSMENT
- OS-1 ON-SITE BORING FOR OFF-SITE ASSESSMENT
- HB-22 PREVIOUS BORING LOCATION
- HBMW-6 FORMER GROUNDWATER MONITORING WELLS

0' 50' 100' 150' 200'

amec

7376 SW Durham Road
Portland, OR, U.S.A. 97224

W.O.	3-61M-10265-A T-3
DESIGN	DH
DRAWN	DD
DATE	OCTOBER 2004
SCALE	1"=100'

STATION PLACE REDEVELOPMENT
N.W. 9th AVENUE
PORTLAND, OREGON

OFF-SITE ASSESSMENT

FIGURE 2

AMEC DRAWING NO. K:\10000\10200\10265\DWG\RI\FIG-2 OFFSITE ASSESSMENT 1104.DWG

TABLE 1
Subsurface Analytical Data
Off-Site Assessment
PDC - Station Place Redevelopment Site
NW 9th and NW Lovejoy
(results in micrograms per liter/kilogram)

	Sample	Groundwater Samples								Soil Samples		
		Groundwater in Excavation	BF1-GW	BF2-GW	BF3-GW	BF4-GW	OS1-GW	OS2-GW	OS3-GW	Excavation Worker	OS4@15-16	LAT-A-BF
	Sample Date	RBC_{WE}	03/04/2004	03/04/2004	03/04/2004	03/04/2004	03/04/2004	03/05/2004	03/05/2004	RBC_{SS}	03/05/2004	09/08/2004
TPH	Gasoline	12,000	20,400	144	80.0 U	1,920	139	80 U	223	>MAX	9.18	4.00 U
TPH	Diesel	>S	37,400	5,150	674	1,740	764	250 U	332	>MAX	607	35
TPH	Heavy Oil	>S	4,650	771	500 U	778	572	500 U	500 U	>MAX	2,640	116
PAHs	Acenaphthene	>S	5.01	0.439	0.915	41.0	0.462	0.100 U	16.6	>MAX	234	0.335 U
PAHs	Acenaphthylene	NP	1.50 U	0.200 U	0.100 U	1.25 U	0.100 U	0.100 U	2.50 U	NP	26.8 U	0.335 U
PAHs	Anthracene	>S	1.50 U	0.200 U	0.100 U	4.44	0.100 U	0.100 U	3.89	>MAX	127	0.487
PAHs	Benzo(a)anthracene	9.1	1.00 U	0.200 U	0.100 U	1.40	0.156	0.100 U	0.668	590	71.6	0.623
PAHs	Benzo(a)pyrene	0.53	1.00 U	0.200 U	0.100 U	**0.961**	0.159	0.100 U	0.499	59	**76.6**	0.586
PAHs	Benzo(b)fluoranthene	>S	1.00 U	0.200 U	0.100 U	0.500 U	0.100 U	0.100 U	0.257	590	36.1	0.418
PAHs	Benzo(g,h,i)perylene	NP	1.00 U	0.200 U	0.100 U	0.500 U	0.100 U	0.100 U	0.186	NP	32.5	0.339
PAHs	Benzo(k)fluoranthene	>S	1.00 U	0.200 U	0.100 U	0.591	0.100 U	0.100 U	0.295	5,900	41.7	0.517
PAHs	Chrysene	>S	1.00 U	0.200 U	0.100 U	1.56	0.181	0.100 U	0.660	59,000	69	0.67
PAHs	Dibenzo(a,h)anthracene	0.21	2.00 U	0.400 U	0.200 U	1.00 U	0.200 U	0.200 U	0.200 U	59	8.38	0.335 U
PAHs	Fluoranthene	>S	1.03	0.200 U	0.100 U	5.54	0.245	0.100 U	2.10	>MAX	182	1.59
PAHs	Fluorene	>S	9.22	0.200 U	0.179	17.8	0.282	0.100 U	12.3	>MAX	116	0.335 U
PAHs	Indeno(1,2,3-c,d)pyrene	>S	1.00 U	0.200 U	0.100 U	0.500 U	0.100 U	0.100 U	0.166	59	25.4	0.335 U
PAHs	Naphthalene	680	2.50 U	0.328	0.137	154	0.390	0.100 U	153	20,000	276	0.335 U
PAHs	Phenanthrene	NP	1.50 U	0.400 U	0.287	29.2	0.678	0.100 U	26.8	NP	491	1.12
PAHs	Pyrene	>S	1.29	0.239	0.103	8.83	0.483	0.100 U	3.68	>MAX	299	1.58
VOCs	Benzene	1,700	1.00 U	1.00 U	1.00 U	86.2	1.00 U	1.00 U	1.06	9,400	0.100 U	0.100 U
VOCs	sec-Butylbenzene	NP	2.80	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	1.00 U	NP	0.100 U	0.100 U
VOCs	Ethylbenzene	110,000	1.00 U	1.00 U	1.00 U	59.8	1.00 U	1.00 U	7.51	>MAX	0.100 U	0.100 U
VOCs	Isopropylbenzene	>S	2.00 U	2.00 U	2.00 U	14.4	2.00 U	2.00 U	2.00 U	>MAX	0.200 U	0.200 U
VOCs	Naphthalene	680	2.00 U	2.00 U	2.00 U	216	2.00 U	2.00 U	118	20,000	0.730	0.200 U
VOCs	n-Propylbenzene	>S	1.00 U	1.00 U	1.00 U	2.94	1.00 U	1.00 U	1.00 U	>MAX	0.100 U	0.100 U
VOCs	1,2,4-Trimethylbenzene	1,300	1.00 U	1.00 U	1.00 U	5.16	1.00 U	1.00 U	13.5	40,000	0.100 U	0.100 U
VOCs	1,3,5-Trimethylbenzene	1,400	1.00 U	1.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.56	40,000	0.100 U	0.100 U
VOCs	Xylenes	22,000	2.00 U	2.00 U	2.00 U	10.8	2.00 U	2.00 U	17.08	>MAX	0.200 U	0.200 U

Notes:
- Bolded value indicates exceedance of respective RBC.
- RBC = Oregon Department of Environmental Quality (9/22/03) Risk-Based Concentration.
- >S = This groundwater RBC exceeds the solubility limit.
- >MAX = The constituent RBC for this pathway is greater than 100,000 mg/kg.
- U = Not Detected. Value represents reporting limit.
- NP = No RBC has been established.

Attachment 6

ATTACHMENT 7

TABLE 2
Storm Sewer Sampling Analytical Data
PDC - Station Place Redevelopment Site
NW 9th and NW Lovejoy
(results in micrograms per liter)

	Sampling Event	DEQ Aquatic SLVs	Low Flow Sampling Event - 4/13/2004								High Flow Sampling Event - 5/28/2004								Groundwater in Excavation RBCs
	Sample Location		RASS-11	RASS-10	RASS-6	RASS-9	RASS-9-D	RASS-7	RASS-5	RASS-8	RASS-11	RASS-10	RASS-6	RASS-9	RASS-9-D	RASS-7	RASS-5	RASS-8	
TPH	Gasoline	NA	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	87.0	80.0 U	80.0 U	80.0 U	80.0 U	12000
TPH	Diesel	NA	250 U	250 U	266	313	253	765	532	250 U	379	752	1,620	975	1,320	773	663	250 U	>S
TPH	Heavy Oil	NA	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	625	500 U	500 U	1640	2,890	585	500 U	500 U	>S
PAHs	Acenaphthene	520	0.278	0.239	7.81	10.7	14.3	5.13	3.54	0.100 U	0.100 U	0.100 U	2.03	0.100 U	0.100 U	0.755	1.07	0.100 U	>S
PAHs	Acenaphthylene	NA	0.100 U	0.100 U	0.250 U	0.300 U	0.337	0.219	0.145	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	NP
PAHs	Anthracene	13	0.100 U	0.100 U	0.795	0.802	0.826	0.200 U	0.189	0.100 U	0.100 U	0.100 U	0.125	0.100 U	0.100 U	0.100 U	0.107	0.100 U	>S
PAHs	Benzo(a)anthracene	0.027	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.376**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	9.1
PAHs	Benzo(a)pyrene	0.014	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.341**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.53
PAHs	Benzo(b)fluoranthene	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	>S
PAHs	Benzo(g,h,i)perylene	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	NP
PAHs	Benzo(k)fluoranthene	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.228	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	>S
PAHs	Chrysene	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.398	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	>S
PAHs	Dibenzo(a,h)anthracene	NA	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.400 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.21
PAHs	Fluoranthene	6.16	0.100 U	0.100 U	0.650	0.757	0.832	0.939	5.06	0.100 U	0.100 U	0.100 U	0.141	0.100 U	0.100 U	0.100 U	0.10 U	0.100 U	>S
PAHs	Fluorene	3.9	0.110	0.100 U	2.29	2.92	2.89	0.710	0.871	0.100 U	0.100 U	0.100 U	0.567	0.100 U	0.100 U	0.276	0.572	0.100 U	>S
PAHs	Indeno(1,2,3-c,d)pyrene	NA	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.200 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	>S
PAHs	Naphthalene	620	0.100 U	0.100 U	1.36	0.753	0.642	0.200 U	0.250 U	0.100 U	0.100 U	0.100 U	0.156	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	680
PAHs	Phenanthrene	6.3	0.100 U	0.100 U	1.51	0.100 U	0.100 U	0.256	0.100 U	0.100 U	0.100 U	0.100 U	0.196	0.100 U	0.100 U	0.138	0.228	0.100 U	NP
PAHs	Pyrene	NA	0.100 U	0.100 U	0.935	1.21	1.25	1.69	0.857	0.100 U	0.100 U	0.100 U	0.199	0.155	0.150	0.124	0.124	0.100 U	>S
VOCs	Acetone	1,500	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	52.4	52.9	25.0 U	NP
VOCs	Benzene	130	1.00 U	1.00 U	7.76	8.33	8.38	3.67	1.24	1.00 U	1.00 U	1.00 U	3.91	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	9400
VOCs	2-Butanone	14,000	1.00 U	1.00 U	10.0 U	1.00 U	1.00 U	10.0 U	10.0 U	1.00 U	10.0 U	10.0 U	10.0 U	78.6	95.1	40.4	14.6	10.0 U	NP
VOCs	sec-Butylbenzene	NA	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	110000
VOCs	Ethylbenzene	7.3	1.00 U	1.00 U	1.93	1.04	1.11	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	>S
VOCs	Isopropylbenzene	NA	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	NP
VOCs	4-Methyl-2-pentanone	170	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	38.5	40.3	16.5	5.53	5.00 U	680
VOCs	Naphthalene	620	2.00 U	2.00 U	3.54	2.00	2.15	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	680
VOCs	n-Propylbenzene	NA	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	>S
VOCs	1,2,4-Trimethylbenzene	NA	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1300
VOCs	1,3,5-Trimethylbenzene	NA	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1400
VOCs	Xylenes	13	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	22000

Notes:
Bolded value indicates exceedance of respective screening value.
U = Not Detected. Number represents reporting limit.
NA = Not Available.
NP = No RBC has been established.
>S = This groundwater RBC exceeds the solubility limit.
Sample Location indicates storm sewer manhole where sample was collected.
The manholes are listed from upstream to downstream, going left to right, under each sample event.

ATTACHMENT 8

LEGEND

- SOIL BORINGS FOR HYDROCARBON CHARACTERIZATION
- SEWER WATER SAMPLES
- SITE BOUNDARY
- SEWER OF INTEREST
- AREA OF SEWER INSPECTION

OUTFALL 11

RASS-1

RASS-2

RASS-8

RASS-5

RASS-7

RASS-6

RASS-4

RASB-10

RASB-9

RASB-8

SOUTHERN FUELING AREA

NORTHERN FUELING AREA

27-INCH STORM SEWER

TANNER CREEK SEWER

WILLAMETTE RIVER

N.W. FRONT AVE.

FREMONT

N.W. QUIMBY ST.

N.W. RALEIGH ST.

N.W. PETTYGROVE ST.

N.W. OVERTON ST.

N.W. NORTHRUP ST.

N.W. MARSHALL ST.

N.W. KEARNEY ST.

N.W. JOHNSON ST.

N.W. LOVEJOY ST.

N.W. IRVING ST.

NW 9TH AVE.

NW 10TH AVE.

NW 11TH AVE.

NW 12TH AVE.

NW 13TH AVE.

NW 14TH AVE.

100 0 200

SCALE IN FEET

RETEC

BURLINGTON NORTHERN AND SANTA FE RAILWAY BN050-15990-300		EXTENT OF SEWER INSPECTIONS, SEWER SAMPLING LOCATIONS AND ONSITE SOIL BORING LOCATIONS PORTLAND, OREGON
DATE: 02/04/03	DRWN: A.S./SEA	FIGURE 3-1

File: H:\15990\159905028.dwg Layout: ANSI_B User: astenberg Plotted: Feb 24, 2003 - 3:25pm Xref's: 0821BAS3, 0821SEWR

Table 4-3b Sewer Water Sampling Analytical Results — High Flow Conditions

		Tanner Creek Sewer				Tanner Creek Sewer		1997 PDC Sewer		27-Inch Storm Sewer			
	Location ID	RASS-4	RASS-4	RASS-2	RASS-2	RASS-1	RASS-1	RASS-8	RASS-8	RASS-6	RASS-7	RASS-5	RASS-5
	Sample Date	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002	12/31/2002
	Sample ID	RASS4-123102	RASS4-123102 filtere	RASS2-123102	RASS2-123102 filtere	RASS1-123102	RASS1-123102 filtere	RASS8-123102	RASS8-123102 filtere	RASS8-123102	RASS7-123102	RASS5-123102	RASS50-123102
Chemical Name	Unit												
PAH													
Acenaphthene	µg/L	**0.609**	**0.756**	**0.486**	< 0.5	< 0.1	< 0.1	**1.44**	**1.48**	**8.62**	**7.93**	**4.75**	**3.97**
Acenaphthylene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.467**	< 0.4	< 0.3	< 0.3
Anthracene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.949**	**0.755**	**0.413**	**0.368**
Benzo(a)anthracene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	µg/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene	µg/L	< 0.1	< 0.1	**0.162**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.751**	**0.726**	**0.428**	**0.405**
Fluorene	µg/L	**0.358**	**0.32**	**0.224**	**0.142**	< 0.1	< 0.1	**0.462**	**0.414**	**2.46**	**3.06**	**2.47**	**2.05**
Indeno(1,2,3-cd)pyrene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene	µg/L	**4.25**	**7.29**	**0.357**	**1.71**	< 0.1	< 0.1	< 0.1	< 0.1	**3.08**	**0.979**	**0.831**	**0.47**
Phenanthrene	µg/L	**0.566**	**0.364**	**0.171**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**2.73**	**2.05**	**0.862**	**0.695**
Pyrene	µg/L	**0.163**	< 0.1	**0.313**	< 0.1	< 0.1	< 0.1	**0.298**	**0.121**	**0.974**	**0.999**	**0.571**	**0.557**
Volatiles													
Benzene	µg/L	**4.05**		**2.32**		< 0.5		< 0.5		**28.6**	**12.4**	**4.69**	**4.74**
Ethylbenzene	µg/L	**1.85**		**1.04**		< 0.5		< 0.5		**9.57**	**3.81**	**1.64**	**1.65**
Toluene	µg/L	< 0.5		< 0.5		< 0.5		< 0.5		< 0.5	< 0.5	< 0.5	< 0.5
TOTAL XYLENE	µg/L	< 1		< 1		< 1		< 1		**2.82**	**1.91**	< 1	< 1
Fuel Hydrocarbons													
Diesel Range Organics	mg/L	**1.05 J**	< 0.25	**0.316 J**	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	**0.304 J**	**0.382 J**	< 0.25
TPH Motor Oil (C24 - C36)	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Gasoline Range Hydrocarbons	µg/L	< 80		< 80		< 80		< 80		**188**	**122**	**90.5**	**90.5**

Note:
Detected concentrations are in bold.

Table 4-3a Sewer Water Sampling Analytical Results — Low Flow Conditions

		Tanner Creek Sewer						1997 PDC Sewer	27-Inch Storm Sewer		
	Location ID	RASS-4	RASS-2	RASS-2	RASS-2	RASS-1	RASS-1	RASS-8	RASS-6	RASS-7	RASS-5
	Sample Date	10/31/2002	10/31/2002	10/31/2002	10/31/2002	10/31/2002	10/31/2002	10/30/2002	10/30/2002	10/30/2002	10/30/2002
	Sample ID	RASS-4	RASS-2	RASS-2 Filtered	RASS-12	RASS-1	RASS-1 Filtered	RASS-8	RASS-6	RASS-7	RASS-5
Chemical Name	Unit										
PAH											
Acenaphthene	µg/L	0.05	**0.47**	**0.5**	**0.56**	**0.5**	**0.54**	**0.41**	**40.9**	**0.61**	**0.75**
Acenaphthylene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**1.00**	< 0.10	< 0.10
Anthracene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**2.98**	< 0.10	< 0.10
Benzo(a)anthracene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**0.17**	< 0.10	**0.10**
Benzo(a)pyrene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(b)fluoranthene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(g,h,i)perylene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**0.17**	< 0.10	**0.11**
Dibenz(a,h)anthracene	µg/L	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fluoranthene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**2.26**	**0.59**	**0.51**
Fluorene	µg/L	< 0.10	**0.12**	**0.13**	**0.18**	**0.17**	**0.17**	**0.39**	**8.24**	< 0.10	**0.33**
Indeno(1,2,3-cd)pyrene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**1.50**	< 0.10	< 0.20
Phenanthrene	µg/L	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	**3.44**	< 0.10	< 0.10
Pyrene	µg/L	< 0.10	**0.21**	< 0.10	**0.27**	**0.22**	< 0.10	**0.21**	**3.27**	**1.14**	**1.04**
Volatiles											
Benzene	µg/L	< 0.50	< 0.50		< 0.50	< 0.50		< 0.50	56.90	1.44	< 0.50
Ethylbenzene	µg/L	< 0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Toluene	µg/L	< 0.50	< 0.50		< 0.50	< 0.50		< 0.50	14.40	0.66	< 0.50
TOTAL XYLENE	µg/L	< 1.00	< 1.00		< 1.00	< 1.00		< 1.00	2.60	< 1.00	< 1.00
Fuel Hydrocarbons											
Diesel Range Organics	mg/L	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
TPH Motor Oil (C24 - C36)	mg/L	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Gasoline Range Hydrocarbons	µg/L	< 80.00	< 80.00		< 80.00	< 80.00		< 80.00	174.00	< 80.00	< 80.00

Note:
Detected concentrations are in bold.

Table 4-3c Hart-Crowser Sewer Water Sampling and Sewer Water Sampling Analytical Results — High Flow Conditions.

		Tanner Creek Sewer									1997 PDC Sewer			27-Inch Storm Sewer				
Location ID Collected by: Sample Date Sample ID Chemical Name	Unit	RASS-4 RETEC 12/31/2002 RASS4-123102	RASS-4 RETEC 12/31/2002 RASS4-123102 filtere	SS-6 Hart-Crowser	SS-1 Hart-Crowser	RASS-2 RETEC 12/31/2002 RASS2-123102	RASS-2 RETEC 12/31/2002 RASS2-123102 filtere	SS-3 Hart-Crowser	RASS-1 RETEC 12/31/2002 RASS1-123102	RASS-1 RETEC 12/31/2002 RASS1-123102 filtere	RASS-8 RETEC 12/31/2002 RASS8-123102	RASS-8 RETEC 12/31/2002 RASS8-123102 filtere	RASS-6 RETEC 12/31/2002 RASS6-123102	SS-2 Hart-Crowser	RASS-7 RETEC 12/31/2002 RASS7-123102	RASS-5 RETEC 12/31/2002 RASS5-123102	RASS-5 RETEC 12/31/2002 RASS50-123102	SS-4 Hart-Crowser
PAH																		
Acenaphthene	µg/L	**0.609**	**0.756**	< 0.05	**3.7**	**0.486**	< 0.5	**8.2**	< 0.1	< 0.1	**1.44**	**1.46**	**8.62**	**0.52**	**7.93**	**4.75**	**3.97**	**17**
Acenaphthylene	µg/L	< 0.1	< 0.1	< 0.2	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.1	**0.467**	< 0.2	< 0.4	< 0.3	< 0.3	< 0.2
Anthracene	µg/L	< 0.1	< 0.1	**0.022 B**	**1.1 B**	< 0.1	< 0.1	**1 B**	< 0.1	< 0.1	< 0.1	< 0.1	**0.949**	**0.081 B**	**0.755**	**0.413**	**0.368**	< 0.01
Benzo(a)anthracene	µg/L	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	**4**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.01
Benzo(a)pyrene	µg/L	< 0.1	< 0.1	< 0.01	**0.11**	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	**2.5**
Benzo(b)fluoranthene	µg/L	< 0.1	< 0.1	< 0.01	**0.022**	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.01
Benzo(g,h,i)perylene	µg/L	< 0.1	< 0.1	< 0.02	< 0.02	< 0.1	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	**3.7**
Benzo(k)fluoranthene	µg/L	< 0.1	< 0.1	< 0.01	**0.075**	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	**2.4**
Chrysene	µg/L	< 0.1	< 0.1	< 0.01	< 0.01	< 0.1	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.018**	< 0.1	< 0.1	< 0.1	< 0.01
Dibenz(a,h)anthracene	µg/L	< 0.2	< 0.2	< 0.01	< 0.01	< 0.2	< 0.2	< 0.01	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.01	< 0.2	< 0.2	< 0.2	< 0.01
Fluoranthene	µg/L	< 0.1	< 0.1	**0.064**	**2.4**	**0.182**	< 0.1	**66**	< 0.1	< 0.1	< 0.1	< 0.1	**0.751**	< 0.01	**0.726**	**0.428**	**0.405**	**730**
Fluorene	µg/L	**0.358**	**0.32**	< 0.02	**3.4**	**0.224**	**0.142**	**15**	< 0.1	< 0.1	**0.462**	**0.414**	**2.46**	**0.15**	**3.06**	**2.47**	**2.05**	**120**
Indeno(1,2,3-cd)pyrene	µg/L	< 0.1	< 0.1	< 0.02	**0.14**	< 0.1	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**1.4**
Naphthalene	µg/L	**4.25**	**7.29**	< 0.05	< 0.05	**0.357**	**1.71**	**1.3**	< 0.1	< 0.1	< 0.1	< 0.1	**3.08**	< 0.05	**0.979**	**0.631**	**0.47**	< 0.05
Phenanthrene	µg/L	**0.568**	**0.364**	< 0.01	**5.7**	**0.171**	< 0.1	**21**	< 0.1	< 0.1	< 0.1	< 0.1	**2.73**	**0.076**	**2.05**	**0.862**	**0.695**	**210**
Pyrene	µg/L	**0.163**	< 0.1	**0.039**	**2.4**	**0.313**	< 0.1	**17**	< 0.1	< 0.1	**0.298**	**0.121**	**0.974**	**0.13**	**0.999**	**0.571**	**0.557**	**210**
Volatiles																		
Benzene	µg/L	**4.05**		< 1	**24**	**2.32**		< 1	< 0.5		< 0.5		**28.6**	**24**	**12.4**	**4.69**	**4.74**	**20**
Ethylbenzene	µg/L	**1.85**		< 1	**15**	**1.04**		< 1	< 0.5		< 0.5		**9.57**	**8**	**3.81**	**1.64**	**1.65**	**20**
Toluene	µg/L	< 0.5		< 1	**1**	< 0.5		< 1	< 0.5		≤ 0.5		< 0.5	< 1	< 0.5	< 0.5	< 0.5	< 20
TOTAL XYLENE	µg/L	< 1		< 1	**9**	< 1		< 1	< 1		< 1		**2.82**	**2**	**1.91**	< 1	< 1	< 20
Fuel Hydrocarbons																		
Diesel Range Organics	mg/L	**1.05 J**	< 0.25			**0.316 J**	< 0.25		< 0.25	< 0.25	< 0.25	< 0.25	< 0.25		**0.304 J**	**0.382 J**	< 0.25	
TPH Motor Oil (C24 - C36)	mg/L	< 0.5	< 0.5			< 0.5	< 0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5	
Gasoline Range Hydrocarbons	µg/L	< 80				< 80			< 80		< 80		**168**		**122**	**90.5**	**90.5**	

Notes:
Detected concentrations are in bold.
Sampling dates or ID's not available for Hart Crowser samples

Table 4-3c **Hart-Crowser Sewer Water Sampling and Sewer Water Sampling Analytical Results — Low Flow Conditions**

		Tanner Creek Sewer									1997 PDC Sewer	27-Inch Storm Sewer				
Location ID		RASS-4	SS-6	SS-1	RASS-2	RASS-2	RASS-2	SS-3	RASS-1	RASS-1	RASS-8	RASS-8	SS-2	RASS-7	RASS-5	SS-4
Collected by:		RETEC	Hart-Crowser	Hart-Crowser	RETEC	RETEC	RETEC	Hart-Crowser	RETEC	RETEC	RETEC	RETEC	Hart-Crowser	RETEC	RETEC	Hart-Crowser
Sample Date		10/31/2002			10/31/2002	10/31/2002	10/31/2002		10/31/2002	10/31/2002	10/30/2002	10/30/2002		10/30/2002	10/30/2002	
Sample ID		RASS-4			RASS-2	RASS-2 Filtered	RASS-12		RASS-1	RASS-1 Filtered	RASS-8	RASS-8		RASS-7	RASS-5	
Chemical Name	Unit															
PAH																
Acenaphthene	µg/L	0.05	< 0.05	3.7	0.47	0.5	0.58	8.2	0.5	0.54	0.41	40.9	0.52	0.61	0.75	17
Acenaphthylene	µg/L	< 0.10	< 0.2	< 0.2	< 0.10	< 0.10	< 0.10	< 0.2	< 0.10	< 0.10	< 0.10	1.00	< 0.2	< 0.10	< 0.10	< 0.2
Anthracene	µg/L	< 0.10	0.022 B	1.1 B	< 0.10	< 0.10	< 0.10	1 B	< 0.10	< 0.10	< 0.10	2.98	0.081 B	< 0.10	< 0.10	< 0.01
Benzo(a)anthracene	µg/L	< 0.10	< 0.01	< 0.01	< 0.10	< 0.10	< 0.10	4	< 0.10	< 0.10	< 0.10	0.17	< 0.01	< 0.10	0.10	< 0.01
Benzo(a)pyrene	µg/L	< 0.10	< 0.01	0.11	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	2.5
Benzo(b)fluoranthene	µg/L	< 0.10	< 0.01	0.022	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.01
Benzo(g,h,i)perylene	µg/L	< 0.10	< 0.02	< 0.02	< 0.10	< 0.10	< 0.10	< 0.02	< 0.10	< 0.10	< 0.10	< 0.10	< 0.02	< 0.10	< 0.10	3.7
Benzo(k)fluoranthene	µg/L	< 0.10	< 0.01	0.075	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	2.4
Chrysene	µg/L	< 0.10	< 0.01	< 0.01	< 0.10	< 0.10	< 0.10	< 0.01	< 0.10	< 0.10	< 0.10	0.17	0.018	< 0.10	0.11	< 0.01
Dibenz(a,h)anthracene	µg/L	< 0.20	< 0.01	< 0.01	< 0.20	< 0.20	< 0.20	< 0.01	< 0.20	< 0.20	< 0.20	< 0.20	< 0.01	< 0.20	< 0.20	< 0.01
Fluoranthene	µg/L	< 0.10	0.064	2.4	< 0.10	< 0.10	< 0.10	66	< 0.10	< 0.10	< 0.10	2.26	< 0.01	0.59	0.51	730
Fluorene	µg/L	< 0.10	< 0.02	3.4	0.12	0.13	0.18	15	0.17	0.17	0.39	8.24	0.15	< 0.10	0.33	120
Indeno(1,2,3-cd)pyrene	µg/L	< 0.10	< 0.02	0.14	< 0.10	< 0.10	< 0.10	< 0.02	< 0.10	< 0.10	< 0.10	< 0.10	< 0.02	< 0.10	< 0.10	1.4
Naphthalene	µg/L	< 0.10	< 0.05	< 0.05	< 0.10	< 0.10	< 0.10	1.3	< 0.10	< 0.10	< 0.10	1.50	< 0.05	< 0.10	< 0.20	< 0.05
Phenanthrene	µg/L	< 0.10	< 0.01	5.7	< 0.10	< 0.10	< 0.10	21	< 0.10	< 0.10	< 0.10	3.44	0.076	< 0.10	< 0.10	210
Pyrene	µg/L	< 0.10	0.039	2.4	0.21	< 0.10	0.27	17	0.22	< 0.10	0.21	3.27	0.13	1.14	1.04	210
Volatiles																
Benzene	µg/L	< 0.50	< 1	24	< 0.50		< 0.50	< 1	< 0.50		< 0.50	< 0.50	8	< 0.50	< 0.50	20
Ethylbenzene	µg/L	< 0.50	< 1	15	< 0.50		< 0.50	< 1	< 0.50		< 0.50	14.40	< 1	0.66	< 0.50	< 20
Toluene	µg/L	< 0.50	< 1	1	< 0.50		< 0.50	< 1	< 0.50		< 0.50	2.60	2	< 1.00	< 1.00	< 20
TOTAL XYLENE	µg/L	< 1.00	< 1	9	< 1.00		< 1.00	< 1	< 1.00		< 1.00					
Fuel Hydrocarbons																
Diesel Range Organics	mg/L	< 0.25			< 0.25	< 0.25	< 0.25		< 0.25	< 0.25	< 0.25	< 0.25		< 0.25	< 0.25	
TPH Motor Oil (C24 - C36)	mg/L	< 0.50			< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	
Gasoline Range Hydrocarbons	µg/L	< 80.00			< 80.00		< 80.00		< 80.00		< 80.00	174.00		< 80.00	< 80.00	

Notes:
Detected concentrations are in bold.
Sampling dates or ID's not available for Hart Crowser samples