FINAL

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY REPORT CENTRAL WATERFRONT SITE, BELLINGHAM, WASHINGTON

Prepared for
Port of Bellingham

Prepared by
Anchor QEA, LLC

March 2018

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ACRONYMS AND ABBREVIATIONS

µg/L	microgram per liter
µg/m3	microgram per cubic meter
AAM	All American Marine
AO	Agreed Order
ARAR	Applicable or Relevant and Appropriate Requirement
ASB	Aerated Stabilization Basin
BEHP	bis(2-ethylhexyl)phthalate
bgs	below ground surface
BMC	Bellingham Municipal Code
BMI	Bellingham Marine Industries
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Cleanup Action Plan
CD	Consent Decree
CFR	Code of Federal Regulations
City	City of Bellingham, Washington
COC	contaminant of concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSL	cleanup screening level
CSM	Conceptual Site Model
DCA	Disproportionate Cost Analysis
DEIS	Draft Environmental Impact Statement
DMMP	Dredged Materials Management Program
DNR	Washington Department of Natural Resources
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
EIS	Environmental Impact Statement
EPH	extractable petroleum hydrocarbon
foc	fractional organic carbon
GAC	granular activated carbon
GP	Georgia-Pacific
Harding Lawson	Harding Lawson Associates

HDPE	high-density polyethylene
ISCO	in situ chemical oxidation
Kd	sediment : water distribution coefficient
Koc	sediment organic carbon : water partition coefficient
Landau	Landau Associates, Inc.
LEL	lower explosive limit
LNAPL	light non-aqueous phase liquid
mg/kg	milligram per kilogram
MLLW	mean lower low water
MNA	monitored natural attenuation
MTBE	methyl-tertiary butyl ether
MTCA	Model Toxics Control Act
NAPL	non-aqueous phase liquid
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photo-ionization detector
Port	Port of Bellingham
PQL	practical quantitation limit
PRB	permeable reactive barrier
PSE	Puget Sound Energy
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
redox	reduction/oxidation
RI/FS	Remedial Investigation/Feasibility Study
SCB	soil-cement-bentonite
SCO	Sediment Cleanup Objective
SEPA	State Environmental Policy Act
Site	Central Waterfront Site
SMS	Sediment Management Standards
SOW	Scope of Work

SQS	sediment quality standard
SSC	Sanitary Services Company
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TBT	tributyltin
TDS	total dissolved solids
TEE	terrestrial ecological evaluation
TOC	total organic carbon
TPH	total petroleum hydrocarbon
TPH-D	TPH-diesel range
TPH-Dx	TPH-diesel extended range
TPH-G	TPH-gasoline range
TPH-MO	TPH-motor oil range
TSCA	Toxic Substances Control Act
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
VPH	volatile petroleum hydrocarbon
WAC	Washington Administrative Code
WCEC	West Central Environmental Consultants

1 INTRODUCTION

This Remedial Investigation /Feasibility Study (RI/FS) is a required deliverable for the Central Waterfront Site (Site) in accordance with Agreed Order (AO) No. DE 3441. The RI/FS is being conducted in collaboration with the Port of Bellingham (Port), the City of Bellingham (City), and the Washington State Department of Ecology (Ecology) consistent with the requirements of the Model Toxics Control Act (MTCA; Washington Administrative Code [WAC] 173-340-350) and the Scope of Work (SOW) presented in Exhibit B of the AO. The scope and objectives of this RI are detailed in the Ecology-approved *Draft Central Waterfront RI/FS Sampling and Analysis Plan and Quality Assurance Project Plan* (RI/FS Work Plan; RETEC 2007a) and in Addenda 1 through 8 (RETEC 2007b; AECOM 2012; Anchor QEA 2012a, 2012c, 2012d, 2013b, 2016b, 2016c).

1.1 Site Description and Background

The Site encompasses approximately 51 acres of upland waterfront industrial property in Bellingham, Washington. The Site is bordered on the north[1] by I&J Waterway, on the east by Roeder Avenue, on the south by Whatcom Waterway, and on the west by the former Aerated Stabilization Basin (ASB) and Bellingham Bay (Figure 1-1). The Site was used for various operations from circa 1910 through present (historical operations are described in detail in Section 2.1.2).

The Site boundary and adjacent property boundaries are presented in Figure 1-2. The Site consists of upland areas; adjacent intertidal and sediment areas are not included within the Site boundary, with the exception of sediment impacts in the nearshore area of Whatcom Waterway. Landowners within the Site include the Port, City, Sanitary Services Company (SSC), Puget Sound Energy (PSE), and the State, which owns adjacent aquatic land in Whatcom and I&J Waterways that is managed by the Washington Department of Natural Resources (DNR). The Site is defined by the extent of contamination caused by the release of hazardous substances and is referenced in the AO and RI/FS Work Plan (RETEC 2007a).

[1] The figures in this document contain directional references for both true north and "project north," with the "project north" axis approximately 45 degrees west of true north (see reference in figures). For ease of discussion, and consistency with previous environmental reports, the text in this document uses "project north" as its directional reference. In the "project north" reference, I&J Waterway and Whatcom Waterway are orientated west-east and Roeder Avenue is orientated north-south in relation to the Site.

1.2 Objectives of the Remedial Investigation/Feasibility Study

In accordance with AO No. DE 3441, the RI/FS is intended to provide sufficient data, analysis, and evaluations to enable Ecology to select a cleanup action for the Site. The specific objectives of the RI/FS are to:

- Obtain data of sufficient quality and quantity to describe the physical setting and physical properties of Site soil, groundwater, and soil vapor (air)
- Determine the nature and extent of contamination in soil, groundwater, and soil vapor (air)
- Determine the distribution of landfill gas related to the former landfill footprint
- Characterize the fate and transport of identified contaminants, including how contaminants migrate between media (e.g., soil leaching to groundwater), groundwater discharge to surface water, and volatilization from soil and groundwater to air
- Use the information collected to assess potential human health and ecological health concerns under current and planned land uses
- Determine the need for cleanup actions for specific areas of the Site, and define and evaluate alternatives for doing so based on specific contaminants, environmental conditions, and land use plans for different areas of the Site
- Select a preferred cleanup strategy based on the findings of the alternatives evaluation and cleanup criteria as defined in MTCA
- Report the methods and findings of the RI/FS to Ecology and the local community

The RI portion of the RI/FS describes the Site's history, physical setting, contaminant nature, extent, transport, and potential for human and ecological exposure to the contaminants. The FS portion of the RI/FS defines the need for cleanup actions and evaluates the alternatives for achieving Site cleanup.

1.3 Coordination with Sediment Cleanup and Waterfront Development

The Site is situated between two ongoing sediment cleanup projects: the Whatcom and I&J Waterways sites. Another primary objective of the Central Waterfront RI/FS is to coordinate with the cleanup of these adjacent sediment sites and verify that migration of upland contaminants does not recontaminate adjacent sediments following cleanup activities.

In addition to coordinating with adjacent sediment cleanup projects, the Central Waterfront RI/FS is being developed in parallel with ongoing land-use planning and development activities being performed by the Port and the City. A community vision of the future of the Bellingham waterfront is underway (referred to as the Waterfront District) and the Site plays a vital role in development opportunities to revitalize a working waterfront. The status of each sediment cleanup project and the Waterfront District planning are described in Sections 2 and 3, respectively.

1.4 Document Organization

Sections 2 through 6 of the RI/FS comprise the RI portion of the document as follows:

- Section 2 discusses the history of the Site and provides an overview of previous environmental studies and cleanup actions conducted to date.
- Section 3 summarizes the environmental setting including physical features of the Site, geology, hydrogeology, natural resources, and current area land use.
- Section 4 summarizes Site screening levels developed as part of the RI. This section summarizes the principal environmental receptors and exposure pathways for which the screening levels are protective.
- Section 5 defines the subareas of the Site as defined in the RI/FS Work Plan and associated addenda and work completed as part of the RI to address data gaps in each subarea.
- Section 6 provides an overall summary of the RI, including the presentation of an overall Conceptual Site Model (CSM), RI conclusions, and recommendations for the FS. The CSM incorporates the key findings of the RI study including contaminants and sources, the nature and extent of contamination, contaminant fate and transport processes, and the principal human health and ecological receptors.

Sections 7 through 12 of the RI/FS comprise the FS portion of the document as follows:

- Section 7 summarizes cleanup requirements for the Site. These requirements include a definition of Site cleanup levels and remedial action objectives that are to be met by the cleanup action. Also defined in Section 7 are the regulations and requirements other than those in MTCA that are addressed by the cleanup and its implementation.

Future permits or approvals that may be required for cleanup implementation are identified in this section.

- Section 8 screens available technologies that could potentially be used to conduct Site cleanup. The technology screening evaluates which of those technologies are most appropriate to Site conditions, consistent with Ecology and U.S. Environmental Protection Agency (USEPA) guidance. Technologies that are retained after this screening process are then carried forward for the development of comprehensive cleanup strategies addressing the Site. Because multiple potential strategies are analyzed in the FS, these cleanup strategies are described in this document as "cleanup alternatives."
- Cleanup alternatives are described in detail in Section 9. The elements of the cleanup are described, along with a description of how each alternative achieves compliance with the cleanup requirements specified in Section 7. Each alternative uses a different combination of the cleanup technologies from Section 8.
- Consistent with MTCA regulations, each remedial alternative is evaluated against a set of defined criteria in Section 10. The analysis addresses many factors required under the regulations as described in Section 7. In the disproportionate cost analysis, each alternative is evaluated against the most permanent alternative to find the alternative that is "permanent to the maximum extent practicable."
- A summary and the conclusions of the FS are provided in Section 11.
- References are provided in Section 12 and appropriate supporting information as referenced in the RI/FS report is included within the appendices.

2 SITE BACKGROUND

This section provides an overview of the Site's history, including historical operations and land use and a summary of environmental investigations and cleanup actions performed at the Site. The relation of the Site RI/FS to adjacent sediment cleanup activities is also provided. This information is provided as background and context to assist the reader in understanding the significance of the RI findings that are presented in the subsequent sections of this report. Historical and cultural resources are discussed further in Section 3.5.

2.1 Site History

The following presents a summary of the Site history including early dredging and filling history and industrial operations.

2.1.1 Summary of Dredging and Filling History

The Central Waterfront shoreline was initially created during early development of Whatcom and I&J Waterways. The pre-settlement shoreline in the vicinity of the Site was located north and east of the Site (north and east of Roeder Avenue; Washington DNR maps from 1907). Whatcom and I&J Waterways were identified and platted on Washington DNR harbor maps since at least 1891. Early dredging activities in the Whatcom and I&J Waterway areas include dredging of shallow channels, with side-casting of the dredge materials behind bulkheads for creation of shoreline fill areas.

The initial Whatcom Waterway channel was authorized in 1902 and was dredged by the U.S. Army Corps of Engineers (USACE) to a width of 200 feet and a depth of 12 feet below mean lower low water (MLLW). A wider, deeper Waterway was authorized for dredging by the River and Harbors Act of June 15, 1910. The dredging of the 1910-authorized channel was completed in 1913, with an Inner Waterway channel depth of 18 feet below MLLW and an Outer Waterway depth of 26 feet below MLLW. The federal channel dimensions were modified in 1958 by the Harbor Act of July 3, 1958. That modification shortened the 18-foot channel section, increased the Outer Waterway authorized depth from 26 feet to 30 feet, and precluded federal dredging activities within 50 feet of the pierhead lines. Dredging events were performed in 1961 and 1969. Most of the berth areas at the head of the Inner

Waterway were never upgraded to comply with the new channel dimensions. Additional localized dredging events were performed in 1974 and 1979.

I&J Waterway was initially dredged to depths of approximately 12 feet below MLLW in the early 1900s. The federal channel in that Waterway was authorized in May 1965, with a project depth of 18 feet below MLLW. The federal dredging of I&J Waterway was completed in 1966, with subsequent dredging by USACE in 1992 in selected areas. The bulkheads and Bornstein Seafoods dock along I&J Waterway were constructed before the federal navigational channel dredging to 18 feet below MLLW in 1966.

The ASB, located to the west of the Site, was constructed in 1978 and 1979, along with installation of wastewater pipelines beneath Whatcom Waterway, and installation of an outfall line offshore of the ASB. Dredging activities included excavation of trenches for the pipeline crossing and outfall line, and dredging of the ASB basin to a minimum neat-line depth of 12 feet below MLLW. Berm construction included placement of imported stone and sand materials, placed as shown in Figure 2-1a.

2.1.2 Historical Site Use and Operations

The vicinity of the Site has been used for industrial activities by multiple parties since the 1880s. The development of Central Waterfront is defined by three time periods: 1) prior to construction of the Roeder Avenue Landfill (early 1900s to 1963); 2) construction of the landfill (1963 to 1974); and 3) post-construction of the landfill and development of the adjacent ASB (1974 to present). Figure 2-1a presents historical photographs and a summary of industrial operations during these three time periods. Figure 2-1b provides a summary of historical operations in relation to Site areas. Industrial operations conducted within the area include, but are not limited to, the following:

- Lumber mill
- Truck dispatching
- Shallow-water marine area used for log rafting
- Boat maintenance and storage
- Bulk fuel terminals (former Chevron and Time Oil)
- Foundry operations

- Coal storage and shipping
- Cement warehouse
- Electrical equipment operations
- Seafood distribution
- Fueling operations with underground storage tank (UST) use
- Municipal landfill
- Olivine rock processing plant
- U.S. Naval Reserve
- Gravel hauling
- PSE substation
- Disposal company
- Warehousing/Technology Development Center

Original development in the Central Waterfront vicinity consisted of lumber mills located on pilings above the tidelands. Infill development of the C Street and Hilton Avenue areas began in earnest circa 1910 with the initial dredging of Whatcom Waterway. Fill areas were created by side-casting the dredged sediments behind bulkheads constructed along the edges of the Waterway. Much of the current C Street and Hilton Avenue were filled in subsequent projects during the 1940s and 1950s. Additional fill projects added to the area along Hilton Avenue in the 1960s with the dredging of I&J Waterway.

The historical operations of the Site are presented for four general Site areas based on significant operations and geographic areas. Figure 2-1b shows the locations of associated historical operations, including the former Chevron Terminal, Colony Wharf, Olivine Uplands, and Roeder Avenue Landfill.

Former Chevron Terminal Area

The former Chevron Terminal area is located within the southwest portion of the Site and was operated as a bulk fuel terminal from approximately 1913 until the late 1980s. The former terminal included two tank farms (north and south yards), a marine vessel loading dock with associated piping, three tanker truck loading racks (one in the north yard and two in the south yard), a rail loading rack (south yard), product storage warehouse and office (south yard), and facility piping and stormwater management features. Former terminal features, including aboveground storage tanks and loading racks, have been demolished at the property.

This property was acquired by the Port in 2005 and was leased by the Port to The Landings at Colony Wharf, who in turn sublet portions of their leasehold to a gravel-hauling company and other tenants. The company offloaded gravel from barges using the Colony Wharf barge-loading facility. The gravel was either stockpiled on site or was delivered directly to construction projects in Whatcom County. The sublease to the gravel-hauling company was terminated in 2013. Current site tenants and operations are described in Section 3.6.1.

Petroleum hydrocarbons and associated constituents have been identified in soil and groundwater within the former Chevron Terminal area. Numerous independent investigations and cleanup actions have been performed by Chevron at the former Chevron property as described in the following sections.

Colony Wharf Area

The Colony Wharf area is located within the southeastern portion of the Site and, since the early 1900s, the Colony Wharf property has been used for a variety of industrial activities. Historical land uses include sales of building products (coal, lime, cement, plaster, brick, and tile); steel casting company; foundry operations; truck garage; manufacture of cement products; boat repair and maintenance; machine shop and welding; fish and seafood distribution; and electrical equipment manufacture, sales, and repair. A portion of the property was sublet by Bellingham Marine Industries (BMI) for construction of marina-related equipment (e.g., concrete floats and shore-protection structures) from 1985 to 2000.

The Colony Wharf property was acquired by the City of Bellingham in 2005 with the majority transferred to the Port of Bellingham in 2013. A portion of the property is still used as an active boatyard operated by The Landings at Colony Wharf, under a lease with the City and then with the Port. Current site tenants and operations are described in Section 3.6.1.

Two USTs (3,600- and 2,000-gallon) and an associated fuel dispenser were used at the property within the Maple Street right-of-way between approximately 1946 and 1981 and subsequently removed in 1997 and 2003. Both USTs were reported to be used for gasoline storage and fueling.

Some metals-impacted soils and shoreline sediments identified at this area have been associated with historical foundry and boatyard operations. In addition, petroleum-impacted groundwater has been identified and is associated with former UST releases. The petroleum-impacted groundwater is comingled with contamination from the former Chevron Terminal area.

Former Olivine Uplands Area

The former Olivine Uplands area is located within the northern portions of the Site along Hilton Avenue, immediately north of the Roeder Avenue Landfill. Other operations to the west along Hilton Avenue also include the Bornstein Seafoods facility and former Time Oil facility. Over the past century, the Olivine Uplands area has been used for various industrial activities as described below and shown in Figure 2-1b.

The first use of this portion of the Site was in the 1880s, when it was occupied by the Lottie Sawmill. Lumber mill operations were continued through the early 1940s by the Whatcom Falls Mill Company. The area was vacant when it was acquired by the Port in 1944. Various trucking companies used the southeastern part of the area from 1959 to 1985. Lumber mill operations at the northern portions of the property were performed by the Bayshore Lumber and H&H Products companies in the 1950s and early 1960s. In 1963, the northern portion of the area (north of Hilton Avenue) was first leased and occupied by Olivine Corporation. By 1980, Olivine Corporation was also leasing the southern portion of the property (south of Hilton Avenue, adjacent to the Roeder Avenue Landfill; see Figure 2-1b) for olivine ore and cement processing and various storage operations. A small experimental incinerator was operated for a few days a month in 1980 and 1981. During that time, the Olivine Corporation conducted test burns of approximately 1 ton of municipal waste obtained from the City of Bellingham. Olivine Corporation's lease was terminated in 1992. An underground fuel storage tank was reportedly used by the OMC trucking company, which conducted truck fueling and equipment maintenance prior to Olivine Corporation's lease. Remaining processing equipment and structures were removed and demolished in 1993; remaining olivine sand was graded across the property (WCEC 2000). This portion of the

Site remained unoccupied until construction of the All American Marine building in 2016 in the southeastern portion of the former Olivine Uplands Area. An RI/FS process was initiated by the Port in 1998 at the former Olivine Uplands area under Ecology's Voluntary Cleanup Program (VCP; Facility ID No. 2928); however, an RI/FS report was not completed.

Excavation material from the Squalicum Peninsula development project was placed in the late-1990s in the area south of Hilton Avenue and north of the landfill boundary (Figure 2-1b). This material was originally from sediment dredged to create the Squalicum small boat basin (Inner Squalicum Harbor) and used as fill material on the Squalicum Peninsula. As part of the peninsula development project (Bellwether) and U.S. Coast Guard station relocation, this material was sampled and tested prior to placement on the Central Waterfront area. Initial testing included five test pits in 1996 at the U.S. Coast Guard station relocation area and testing for petroleum hydrocarbons, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and metals (Tetra Tech 1996). Additional sampling and testing was performed in 1998 at the Bellwether development project area at five test pits and analyzed for petroleum hydrocarbons, VOCs, semivolatile organic compounds (SVOCs), PCBs, and metals (GeoEngineers 1998). Results of both studies indicated the excavated material was suitable for upland placement as an unregulated fill material. The stockpiled soils were removed to approximately 6 inches above the pre-stockpiled ground surface. These soils were transported to and stockpiled on the Cornwall Avenue site prior to construction of the All American Marine building.

The western portion of the area was historically the location of a bulk fuel terminal (Time Oil) from approximately the early 1960s to the mid-1980s. This facility included approximately five aboveground storage tanks, a fuel dispensing area, and associated piping. Limited historical information is available describing the types of products handled; however, historical aerial photographs show some piping was aboveground. Areas to the north and west of Time Oil were occupied by a seafood processing facility (Bornstein Seafoods) from 1946 to present and by a boat storage and lift operation at Hilton Harbor (approximately mid-1970s to present).

Former Roeder Avenue Landfill Area

Prior to 1965, the area of the site occupied by the Roeder Avenue Landfill consisted of a shallow-water marine area used for log rafting. The area was bounded on the north and south by infill development along Hilton Avenue and C Street.

The Roeder Avenue Landfill is a former municipal landfill operated by the City between 1965 and 1974. The landfill was constructed largely on Georgia-Pacific (GP)-owned property in 1965 in compliance with USACE and City public notice requirements, and under lease agreements with the City and the area property owners. The fill was created by first constructing a clay berm extending north-south between the Hilton Avenue and C Street areas, and then placing refuse and soil cover within the enclosed area. According to the City of Bellingham records (RETEC 1996, 1997), the berm was constructed of inexpensive clay overburden obtained from a quarry near Squalicum Parkway in Bellingham. It was constructed on top of the tide flats between the Hilton Avenue bulkhead and the Chevron property. The berm height was 15 feet above MLLW, but it was raised to 22 feet above MLLW in 1972 in order to accommodate the additional refuse volume. Clay was not used in the upper portion of the berm. Aerial photographs (1963, 1965, 1967, 1976) show the berm extending from Hilton Avenue bulkhead to D Street and about 20 feet in width. Supporting documentation is available in Appendix G.

The main property owners at the time of landfill operation included GP, the Port, and the City. Between 1965 and 1974, the landfill operated as a disposal site for wood waste and other material from the GP mill and as the main disposal site for municipal refuse in the City. Municipal use of the site was terminated in 1974. Since that time, properties within the footprint of the landfill were acquired by SSC and PSE.

In 2000 and 2001, GP developed a draft RI/FS and design for construction of a 250,000-square-foot warehouse building over the central portion of the landfill. The warehouse project was conducted as an independent action by GP, with technical assistance provided by Ecology under the VCP. In addition to the warehouse construction, the landfill area was graded and capped, and a methane control system was installed beneath the warehouse.

The Port subsequently acquired select land holdings from GP in early 2005, including all GP properties in the Site.

2.2 Environmental Investigations

Numerous environmental investigations have been performed at the Site since the mid-1980s as part of environmental activities at four previously independent sites: the former Chevron Terminal, Colony Wharf, former Olivine Corporation facility, and former Roeder Avenue Landfill. These four independent sites were consolidated into the Site in 2003, and subsequent environmental studies were performed on a site-wide basis.

The Site RI was initiated in 2007 and 2008 with supplemental RI activities completed from 2009 to 2013. Table 2-1 provides a listing and description of environmental investigations at the Site, including the study author and the party for which the study was prepared. The locations of Site investigation sampling are shown in Figure 2-2. The following provides a summary of the Site environmental investigations and the relevance to completion of this RI. A detailed discussion of the nature and extent of contamination at the Site is provided in Sections 5 and 6, in the context of defining subareas and the CSM.

2.2.1 Pre-2007 Independent Activities

Prior to 2007, environmental investigations were performed at four independent sites based on property ownership and historical property use. Each of the four sites was listed and ranked on Ecology's Hazardous Sites List and investigations were performed under Ecology's VCP. These four sites are described below and include the following:

- Former Chevron Terminal
- Colony Wharf
- Former Olivine Uplands
- Former Roeder Avenue Landfill

Former Chevron Terminal

The former Chevron Terminal site was listed and ranked as a MTCA site by Ecology in 1998 due to contamination associated with past operation of a petroleum bulk terminal between 1913 and the late 1980s. Early investigation and interim cleanup actions were conducted by

Chevron between 1986 and 2002 as independent remedial actions. Chevron later requested technical assistance from Ecology under the VCP in 2002. Chevron completed several additional studies and interim remedial actions but did not define a final cleanup plan prior to establishment of the Site in 2003.

Existing data confirm that the Chevron site has petroleum contamination in soils and groundwater. Earlier investigations indicated the presence of free-phase petroleum products in limited site areas. Initial investigations were conducted by Chevron between 1986 and 1993. These studies were conducted by various consultants including GeoEngineers, Applied Geotechnology, Inc., and others to respond to documented petroleum releases and to address requirements of the MTCA regulations. These investigations included installation of a number of on-site monitoring wells with respective soil and groundwater sampling, test pit excavations, and remedial engineering evaluations.

Between 1994 and 1998, Chevron continued groundwater monitoring and hydrocarbon recovery efforts at the site. Chevron installed spill containment booms at the site in response to periodic hydrocarbon sheens noted in a shoreline area of the south yard (adjacent to Whatcom Waterway). Chevron also conducted multiple soil and groundwater investigations and conducted a pilot test for a total fluids recovery system. The total fluids recovery evaluations were unsuccessful due to the high water production and low product recovery achieved. Chevron and its contractor determined that total fluids product recovery was not feasible for the south yard area.

During 2002 and 2003, Chevron conducted additional groundwater sampling for petroleum hydrocarbons, heavy metals, and PAH compounds. This work was conducted with technical assistance from Ecology's VCP. The petroleum hydrocarbon data collected provided an assessment of site conditions for these parameters; however, the heavy metals and PAH data were collected from groundwater using bailer methods. It should be noted that the reliability of these data is questionable due to the presence of elevated turbidity levels and the solids-related contaminant concentrations in the sampling data.

In 2003, Ecology performed an analysis of groundwater quality at the former Chevron and adjacent Colony Wharf sites. The purpose of the analysis was to assess trends in the data and identify data gaps and recommendations relevant to a final Site RI/FS. Multiple lines of evidence were used to assess the influence of natural attenuation on groundwater hydrocarbon concentrations, including analysis of concentration trends and geochemical conditions. The evaluations indicated that a majority of monitoring wells showed decreasing or stable petroleum (gasoline and diesel) concentrations, indicating active natural attenuation processes.

Colony Wharf

The former Colony Wharf site is the current location of The Landings at Colony Wharf. The site has been used for a variety of industrial activities since the early 1900s. Historical land uses and potential contaminant releases were described in the Phase 1 Environmental Assessment (GeoEngineers 1990) report prepared by GeoEngineers in 1990 for BMI.

Subsequent to completion of the Phase 1 Assessment, sampling of soils and groundwater was performed by GeoEngineers on behalf of BMI. That sampling was described in a Phase 2 Environmental Assessment report (GeoEngineers 1992). The sampling detected elevated concentrations of petroleum, benzene, cyanide, chromium, and other contaminants in site groundwater. The sources of petroleum and benzene were assumed to be associated with former USTs located at the site, and possibly with contamination from the adjacent Chevron site. Elevated concentrations of chromium and cyanides in groundwater were attributed by GeoEngineers to the adjacent Roeder Avenue Landfill.

During 2001 and 2002, Colony Wharf developed plans for construction of a new bulkhead along the shoreline of Whatcom Waterway. The purpose of the bulkhead was to stabilize the shoreline and to arrest erosion that had been occurring in that area. The bulkhead project included sediment dredging to restore sufficient water depths in between the shoreline and the pierhead line for water access to moored vessels. The bulkhead project was to include dredging and disposal of contaminated soils located in the shoreline area, and was to be coordinated with eventual cleanup of Whatcom Waterway. As part of the bulkhead planning, soils were sampled in the shoreline fill area. The results of this testing were summarized in a GeoEngineers report titled Results of Waterfront Material Characterization and Limited Metals Assessment (GeoEngineers 2002) dated October 23, 2002, and prepared for B.C. Investment Corporation. Those tests results indicated elevated concentrations of lead, arsenic, zinc, and other metals in the shoreline fill area.

Former Olivine Upland

Several environmental investigations have been performed on the former Olivine Uplands site. These investigations have included testing of soil and groundwater quality. An environmental site assessment was conducted in 1994 by Landau Associates, Inc. (Landau) on behalf of the U.S. Coast Guard, which was considering the property for development of a U.S. Coast Guard facility. The assessment consisted of a site history review, agency file review, upland site reconnaissance, upland and sediment sampling and analysis, and a marine vegetation survey (Landau 1994). The upland sampling consisted of drilling two soil borings within the site area. Composite soil samples were collected from each boring and analyzed for Resource Conservation and Recovery Act (RCRA) metals and zinc, and SVOCs, including PAH, pesticides, and PCBs.

In 1995, Harding Lawson Associates (Harding Lawson) conducted additional testing on behalf of the U.S. Coast Guard. During that study, Harding Lawson installed four groundwater monitoring wells (MW-1 through MW-4) at the site and sampled soil, sediment, and groundwater (Harding Lawson 1995). Three test pits were excavated in the vicinity of Landau boring B-1 to assess the extent of impacts. The measured groundwater elevation indicated that flow direction is northeast to southwest at the site. Tidal influences were noted.

The 1995 Harding Lawson investigation concluded that PAH-impacted soil appears to be associated with piling and burning of refuse and that the extent of impact was not fully delineated. They also concluded that the chromium concentrations in groundwater samples may be a result of sample turbidity.

GeoEngineers was contracted by Absorption Corporation to conduct a geotechnical investigation on a portion of the northwest parcel of the site. Seven test pits were excavated on February 16, 1999, around the perimeter of a potential warehouse foundation planned as an expansion of Absorption Corporation's operations onto a portion of the site. Under contract with the Port, West Central Environmental Consultants (WCEC) personnel field screened soil samples from the test pits and collected three samples for chemical analysis. The test pits were excavated to depths of 10 to 14 feet below ground surface (bgs). The test pits encountered fine to medium sand fill overlying native sands of similar composition as the fill. The test pits also encountered abundant woody debris including sawdust. The woody material increased volumetrically within the test pits with proximity to I&J Waterway. Pilings were encountered frequently along with some construction debris such as bricks, boards, and railroad ties. The geotechnical investigation concluded that the subsurface conditions at the site, particularly the presence of pilings and sawdust, would limit the foundation or footing design for the proposed warehouse expansion.[2]

Remedial investigation activities were conducted at the former Olivine Uplands site during 2000 under direction of the Port. These studies were conducted under Ecology's VCP. Investigation tasks for the uplands portion of the site were conducted initially by WCEC, with later work by Farallon Consulting, L.L.C. and RETEC. Investigation tasks included test pits, borings, well installations, water level gauging, and field and laboratory analysis of soil and groundwater samples.

Former Roeder Avenue Landfill

The nature and extent of contamination associated with the Roeder Avenue Landfill was described in detail in a draft RI/FS prepared for that site and submitted to Ecology in 2001. The draft Roeder Avenue Landfill RI/FS was prepared by ThermoRetec on behalf of the Port and City. That study was developed according to a work plan developed with Ecology technical assistance under the VCP. The study addressed landfill refuse and associated contaminants within the Site. The study included area-wide groundwater monitoring, and the development of a three-dimensional area-wide groundwater flow model.

The extent of landfill refuse was verified using test pits, soil borings, and site historical information. Groundwater quality within and adjacent to the landfill was defined using the results of previous groundwater studies, and development and sampling of groundwater monitoring wells throughout the Site. Sediment source control evaluations performed as

[2] The geotechnical work was not performed for the Port and is not available. The environmental investigation work was not documented in a report, but data were available in development of a draft RI/FS report that was not submitted to Ecology.

part of the draft Roeder Avenue Landfill RI/FS indicated that the landfill constituents do not represent a source of contamination to adjacent sediment sites. The presence, composition, and distribution of landfill gas were assessed directly with vapor sampling. The draft RI/FS report assessed a range of cleanup alternatives potentially applicable to the site, consistent with MTCA requirements in place during 2001.

2.2.2 2007–2008 Remedial Investigation Activities

The Site RI data collection program was initiated by the Port and City in 2007 under AO No. DE 3441. Remedial investigation activities were performed as outlined in the RI/FS Work Plan (RETEC 2007a) and RI/FS Work Plan Addendum (RETEC 2007b). The RI integrated the results of the previous studies (described in Section 2.2.1), and focused on completing supplemental studies to address data gaps as necessary to: 1) document the nature and extent of contamination within the Site; and 2) support evaluation of site-wide cleanup alternatives in a Feasibility Study consistent with MTCA regulatory requirements.

The RI data collection program included two general phases, covering the period of August 2007 through December 2007 with subsequent phases of groundwater data collection conducted in March 2008 to support the evaluation of seasonal groundwater characteristics and quality. The data collection effort occurring in August 2007 through March 2008 included the following:

- **Soil borings and surface soil sampling:** A total of 12 soil borings and 20 surface soil samples were completed during August and December 2007. Soil samples were generally analyzed for petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds, SVOCs, and metals.
- **Groundwater monitoring:** Groundwater samples were collected from 32 monitoring wells in September 2007 and 15 monitoring wells in March 2008. Groundwater samples were analyzed for total petroleum hydrocarbons (TPH), total metals, fuel oxygenates, VOCs, SVOCs, and natural attenuation parameters. Samples were also analyzed for dissolved metals in March 2008.
- **Product gauging and mobility evaluation:** Soil and groundwater sampling was performed to assess subsurface conditions at the Chevron Terminal area for the presence of free-phase petroleum product and evaluate the potential for free product

mobility and recovery options. Free product samples were not collected because it is no longer present in Site monitoring wells; however, soil samples were collected and analyzed for product mobility using soil core analysis consisting of soil-fluid interaction properties.

- **Updated groundwater modeling and fate and transport analysis**: This evaluation included site-wide conditions and reflected land use planning changes (including adjacent sediment receptors).
- **Landfill gas monitoring:** Landfill gas monitoring was conducted at select locations across the Site in 2007 and 2008. Gases measured during the investigation included methane, hydrogen sulfide, carbon monoxide, carbon dioxide, and oxygen. Additionally, VOC vapor concentrations were monitored using a photo-ionization detector (PID) to assess the concentration of these compounds relative to methane.
- **Soil gas petroleum monitoring:** A soil gas investigation was completed in the area of the former Chevron Terminal to determine soil gas concentrations within the areas of historical light non-aqueous phase liquid (LNAPL) occurrence. Areas of historical LNAPL occurrence generally coincide with historical site features such as tanks, pipelines, loading racks, and documented petroleum releases to soil.
- **Stormwater quality sampling:** Sampling was conducted in October 2007 and in April 2008 along the C Street stormwater drainage system to determine if Site groundwater was contaminating the stormwater as it flowed through the Site.

2.2.3 Post-2009 Supplemental Remedial Investigation Activities

Since 2009, the following supplemental RI data collection activities have been performed at the Site. Complete documents are included in Appendices A and B.

May 2012 Interim Action Shoreline Beach Sampling

A supplemental investigation was performed by AECOM in the beach and adjacent upland of the former Chevron area to evaluate the source of petroleum sheens to Whatcom Waterway and allow for the development of potential interim remedial action(s) along the former Chevron area shoreline. As part of the May 2012 investigation, a total of 6 soil borings and 20 beach test pits were completed and 35 surface and subsurface soil samples were submitted for analysis of petroleum hydrocarbons (TPH-gasoline range [TPH-G] and TPH-diesel range [TPH-D]) and selectively for BTEX compounds, SVOCs, total organic carbon (TOC), and extractable petroleum hydrocarbons/volatile petroleum hydrocarbons (EPH/VPH). In addition, one monitoring well was installed adjacent to the shoreline bulkhead for future groundwater monitoring. The results of the May 2012 investigation are included in the *Technical Memorandum for Central Waterfront RI/FS Work Plan Addendum 2* (AECOM 2012).

July 2012 Supplemental Shoreline Investigation

To address data gaps identified by Ecology, a supplemental shoreline investigation was conducted in July 2012 that included collection of site soil, porewater, seep, and groundwater samples as described in the RI/FS Work Plan Addendum No. 3 (Anchor QEA 2012a). During this investigation, ten test pit soil samples, four groundwater samples, two shoreline seep samples, and six porewater samples were collected. Samples were submitted for analysis of TPH-D, TPH-G, and BTEX. Results of the shoreline sampling effort are also included in Appendix H of the Whatcom Waterway Engineering Design Report (EDR; Anchor QEA 2015).

October 2012 Whatcom/Central Waterfront Shoreline Design Investigation

To address identified data needs in support of the Whatcom Waterway engineering design, a supplemental investigation was performed in October 2012, which included seven geoprobe transects perpendicular to the Central Waterfront shoreline (total of 20 borings) and two geotechnical soil borings performed using hollow-stem auger methodology. Work was performed consistent with the Supplemental Central Waterfront Shoreline Investigation RI/FS Work Plan Addendum No. 4, dated October 19, 2012 (Anchor QEA 2012c).

Direct push borings were completed to delineate the presence/absence of subsurface concrete debris and petroleum and metals contamination along the proposed wall alignment. Soil sampling was performed at multiple depth intervals at each direct push boring location, and a total of 16 soil samples were submitted for laboratory analysis including gasoline and diesel/motor oil range hydrocarbons (using silica gel cleanup procedures in accordance with the RI/FS Work Plan Addendum No. 5 [Anchor QEA 2012d]), BTEX compounds, and priority pollutant metals. Soil samples were collected from the two geotechnical boring stations using standard penetration test and Shelby tube samplers and submitted to a geotechnical laboratory for moisture content, sieve analysis, Atterberg limits, consolidation, and undrained unconsolidated triaxial compression testing. Results of the October 2012 investigation are outlined in Appendix A of this RI/FS and Appendix M of the Whatcom Waterway EDR (Anchor QEA 2015).

2013 Supplemental RI Data Gaps Investigation

Supplemental RI activities were conducted in October and November 2013 to complete field-related data gaps to support completion of the Site RI/FS; these activities included soil borings, soil and groundwater sampling, and landfill gas monitoring, as outlined in the Ecology-approved RI/FS Work Plan Addendum No. 6 (Anchor QEA 2013b). Methodology and results of the Supplemental RI testing are provided in Appendix B.

Groundwater sampling was performed at seven existing Site nearshore perimeter monitoring wells to evaluate current groundwater quality in the nearshore areas of the Site. Groundwater samples were submitted for analysis of dissolved metals (field filtered) at all well locations and PAHs from the two wells located in the Olivine Upland area.

A total of four soil borings were advanced by direct push (Geoprobe) methodology to determine the nature and extent of potential petroleum impacts to soil and groundwater in the vicinity of the former Time Oil facility. Soil samples were collected from each boring location and selectively analyzed for TPH-G and TPH-D (with silica gel cleanup), BTEX compounds, and EPH/VPH. Based on subsurface soil observations, three 1-inch monitoring wells were installed and sampled; groundwater samples were analyzed for TPH-diesel extended range hydrocarbons (TPH-Dx; with silica-gel cleanup), TPH-G, and BTEX.

Landfill gas monitoring was conducted in October 2013 at three monitoring wells to confirm decreasing concentrations of landfill-associated gas (e.g., methane) measured in 2001 along Roeder Avenue. Monitoring was conducted using a combustible gas monitor (percent lower explosive limit [%LEL]) and PID. During the monitoring event, an initial %LEL was recorded and subsequent measurements were recorded in 1-minute intervals. Volatile compounds were measured every 3 minutes using a PID to rule out the potential presence of hydrocarbons or solvent vapor. Results of the supplemental RI field investigation are discussed in Sections 5 and 6.

It is important to note that although electrical substations can be sources of PCB contamination, the "Old Town" PSE Substation located within the Site boundary along Roeder Avenue was not investigated because there is no indication of a past release and it is not listed as a suspected site by Ecology. Also, this particular electrical substation was constructed after 1979, after PCBs were banned for commercial use.

2.3 Previous Cleanup Actions

Independent cleanup actions have been performed in portions of the Site, including the decommissioning of USTs in three areas, the completion of independent remedial actions at the former Chevron Terminal and Roeder Avenue Landfill, and an interim action performed along the southwest shoreline of the former Chevron Terminal.

2.3.1 Underground Storage Tank Decommission

A total of eleven former USTs have been identified at seven locations at the Site as shown in Figure 2-1b. One existing UST is present at the Hilton Harbor boat storage property and is also shown on Figure 2-1b. Former USTs have been decommissioned as described below and summarized in Table 2-2.

Two USTs were removed in 1994 from the former Absorption Products plant (#1 in Figure 2-1b), including a 2,000-gallon bunker C tank and 500-gallon diesel heating oil tank. As part of the tank removal activities, soils in the immediate area of the tanks were over-excavated and confirmation sampling results indicated petroleum hydrocarbon results were below MTCA Method A cleanup levels at the time of removal (GeoEngineers 2000).

One UST was decommissioned at the former Olivine Uplands area in 1998 as shown in Figure 2-1b (former UST #2). Pinner Engineering, Inc. oversaw the removal of the 1,000-gallon UST at the site and conducted a UST site assessment. The UST was referenced as a heating oil tank that serviced the adjacent building; however, this may have been the UST used by the OMC trucking company. Two soil samples were collected from the tank excavation along with one from the stockpiled soil. The samples were analyzed for TPH-D along with a grab sample of water from the bottom of the excavation. Two soil samples and the water sample contained TPH-D concentrations above MTCA Method A cleanup levels promulgated at the time of sampling; however, the water sample was likely collected from the excavation and did not represent groundwater quality conditions. Samples collected in this manner often contain elevated hydrocarbon concentrations from mixing of impacted soil with pooled water during the excavation process. Groundwater monitoring at MW-5(O) showed non-detect concentrations of petroleum hydrocarbons and BTEX constituents when sampled in 2007.

Two USTs were decommissioned in place (#3 in Figure 2-1b) and one UST was removed (#4 in Figure 2-1b) in the northwest portion of the Site in the early to mid-1990s. The two USTs decommissioned in place were used by Bornstein Seafood and included a 12,000-gallon diesel and 700-gallon gasoline UST for vessel fueling. Both of these USTs were decommissioned by removing residual fuels in each tank and placing a cement slurry within the tanks. The former UST at the Hawley's Hilton Marina included a 12,000-gallon gasoline UST for fueling vessels and was removed in 1990. As part of this tank removal, soils were over-excavated and a No Further Action (NFA) was issued by Ecology for this work on March 12, 1991.

Two USTs were decommissioned at the Colony Wharf property (#5 in Figure 2-1b). In 1997, a 3,600-gallon UST was removed from the Maple Street right-of-way. Documents prepared on behalf of Colony Wharf indicate that this UST was used primarily for gasoline fueling between approximately 1953 and either 1977 or 1981. A fuel dispenser was located adjacent to the tank, within the right-of-way. During April 2003, an unregistered 2,000-gallon UST was removed from the Maple Street right-of-way. The tank was located adjacent to the former 3,600-gallon UST that had been removed in 1997.

Three USTs (#6 and #7 in Figure 2-1b) were removed from the Colony Wharf property in the areas north of C Street. These tanks were removed in 1989 and 1987 and included two gasoline USTs and one diesel UST. These tank removals were observed and approved by the local fire marshal at the time of removal (GeoEngineers 1990).

2.3.2 Former Chevron Terminal Cleanup Actions

Cleanup actions have been performed at the former Chevron Terminal to address petroleum-related contamination including the removal of product accumulation to prevent the migration to Bellingham Bay. The following describes cleanup actions performed in the former Chevron Terminal area.

Early Independent Cleanup Actions

Between 1993 and 1994, Chevron conducted soil bioremediation efforts at the site (AGRA 1995). These efforts included the import of contaminated soils from other Chevron service station remediation sites, as well as biotreatment of soils excavated from the Chevron Terminal property (the majority from the central portion of the south yard). Treatment targets were based on the MTCA Method A TPH cleanup level at the time, of 200 milligrams per kilogram (mg/kg). Petroleum concentrations stabilized but these treatment targets were not consistently achieved. Chevron terminated bioremediation activities and excavated soils were backfilled and regraded in the south yard excavation.

During 2001, Chevron's contractor KHM conducted an excavation of approximately 1,200 cubic yards (1,750 tons) of contaminated soil from the area in the southern corner of the site (KHM 2002). That work was performed to further control hydrocarbon sheens originating from the shoreline area at a failing bulkhead at the southern corner of the site. An impermeable liner was placed along the sides of the excavation prior to backfilling.

2013 Interim Action

Under the First Amendment to AO No. DE 3441, the Port performed an interim action at the Site along the southwest shoreline in the area of the former Chevron Terminal south yard. The interim action was implemented to prevent the spread of petroleum contamination to the waters of Bellingham Bay by removing the impacted soil and sediments in the area where sheens had been observed, installing a temporary liner to prevent recontamination by upland impacts pending completion of the RI/FS, and backfilling with clean cap material to prevent further erosion of the shoreline. The *Interim Action Work Plan* described these activities in detail (Anchor QEA 2012b). Project activities included the excavation and removal of 1,180 tons of contaminated sediment/soil, backfill with clean cap material, and removal of approximately 12 creosote-treated pilings (15 tons) within the intertidal shoreline of the former Chevron Terminal area. Results of the interim action are detailed in the *Completion Report Central Waterfront Site Chevron Subarea Interim Action* (Anchor QEA 2013a).

2.3.3 Roeder Avenue Landfill Warehouse Project

In 2000 and 2001, GP constructed a 250,000-square-foot warehouse building over the central portion of the landfill. The warehouse project was conducted as an independent action by GP, with technical assistance provided by Ecology under the VCP. In addition to the warehouse construction, the landfill area was graded and capped and a methane control system was installed beneath the warehouse.

2.4 Adjacent MTCA Cleanup Sites

The Port, with Ecology oversight, has initiated separate cleanup processes for contaminated sediments located within the Whatcom and I&J Waterways sites, which bound the Site to the south and north, respectively.

This section describes the current status of these adjacent cleanup sites and how they relate to the Site.

2.4.1 Whatcom Waterway

An RI/FS for the Whatcom Waterway marine sediment site was conducted by the Port and GP under AO No. DE 95TC-N399. The RI/FS was approved by Ecology in July 2007 and a final Consent Decree (CD) and Cleanup Action Plan (CAP) for the Whatcom Waterway site was finalized in September 2007. A subsequent CD/CAP amendment was filed in August 2011.

The design and implementation of the cleanup of the Whatcom Waterway site is being performed in two cleanup phases, with two separate and independent construction projects, each addressing distinct areas of the site. Phase 1 of the Whatcom Waterway cleanup began in mid-2015 and was completed in mid-2016. Phase 1 of the project involved work along the southern Site boundary, including in-water work (dredging and engineered capping construction), shoreline stabilization, some structure demolition and removal, and source control structure construction (steel sheet pile containment walls). The Phase 1 work is described in detail in the Whatcom Waterway EDR (Anchor QEA 2015) and is further summarized in Section 9.1.5.4. The Phase 2 project will address remaining Whatcom Waterway areas and will use a combination of dredging, capping, confined aquatic disposal, and institutional controls to achieve cleanup levels. These activities may be performed in association with certain waterfront redevelopment activities.

2.4.2 I&J Waterway

An RI/FS for the I&J Waterway marine sediment site was finalized in February 2015 and the Port and Ecology are in the process of developing a CAP under an AO with Ecology (No. DE 1090). The CAP is anticipated to be finalized in 2018.

3 ENVIRONMENTAL SETTING

This section describes the environmental setting of the Site. Information discussed in this section includes the physical site features, area natural resources, and land use and navigation characteristics.

3.1 Physical Conditions

The Site is relatively flat, with land surface elevations generally ranging from 14 to 18 feet above MLLW. Figure 3-1 presents topographic elevation contours for the Site area, including bathymetry of adjacent sediment elevations. Topographic and bathymetry data shown are from multiple land and in-water surveys; performed for various activities and with varying resolution. Currently, a majority of the Site is covered by pavement and buildings with portions of the Site having gravel and/or soil cover.

3.1.1 Shoreline Features

Shoreline features are depicted in Figure 3-1. At the head of Whatcom Waterway near Roeder Avenue, an emergent tide flat has developed. Improvements to the southern shoreline of the Site (northern Whatcom Waterway shoreline) were completed as part of the Whatcom Waterway Phase 1 cleanup in mid-2016 (see Section 2.4.1). That shoreline was previously composed of a mixture of wooden and concrete bulkheads (Chevron bulkhead on the west and Maple Street on the east), steep informally armored slopes, and overwater wharves; those structures were demolished, removed, and replaced during 2015–2016 Phase 1 cleanup activities with steel sheet pile containment walls along the western (former Chevron Property) and eastern (former Colony Wharf Property) portions of the shoreline. In addition, a steel sheet pile bulkhead wall, tie-back soil anchors, and a fender system were installed at the Maple Street Bulkhead. A barge ramp with a hydraulic lift was previously located in the Colony Wharf area of the Site; that ramp was demolished and associated nearshore debris was removed to facilitate installation of the above shoreline containment walls. The southwest corner of the Site in the vicinity of the former Chevron property was the subject of the 2013 interim action (Anchor QEA 2013a) and is composed of a sloping gravelly sand shoreline underlain by engineered armor stone. Prior to the interim action, a timber bulkhead in a severe state of deterioration and rotation caused soil to erode into Whatcom Waterway.

The northern Central Waterfront shoreline (southern I&J Waterway shoreline) has been engineered for commercial navigation uses using wooden bulkheads. An overwater dock structure is located at the Bornstein Seafoods facility and at the Hilton Harbor location. The Bornstein Seafoods dock was constructed in two phases in 1947 and 1963, and also contains a float extending east of the dock. A second dock is located at Hilton Harbor. Two timber bulkheads are present along the shoreline: the west bulkhead is located adjacent to the Bornstein Seafoods facility and the east bulkhead is located adjacent to the former Olivine Uplands area. Shoreline infrastructure has remained unchanged since the Waterway was dredged to meet federal navigation standards in 1966. The west bulkhead is considered to be in poor condition, the east bulkhead is considered to be in fair condition, and the Bornstein Seafoods dock is considered to be in fair to good condition (Echelon Engineering 2012). The shoreline beneath the Bornstein Seafoods facility and the former Olivine Uplands area contain some assorted debris, including rocks and pieces of concrete, constituting armored slopes; however, the subtidal slope beneath the dock is not armored. Olivine sands (sandy, fine-grained material associated with former Olivine operations) are exposed in the top 1 to 2 feet of the shoreline at the end of the east bulkhead adjacent to the former Olivine Uplands area. An armored sloped bank of concrete rubble is also located along the shoreline between the Bornstein Seafoods facility and Hilton Harbor.

The western edge of the Site abuts the ASB, which consists of a composite structure including armor stone, a thick internal sand bedding layer, and an internal lining system including asphalt (upper portion) and bentonite clay (lower portion).

The interior of the ASB has been hydraulically disconnected from Bellingham Bay since 1978 when the berm was completed. Water elevations in the ASB were historically maintained between 19 and 20 feet above MLLW as part of ASB operations. Since 2007, water levels in the ASB have been maintained at elevations below 15 feet MLLW. The area immediately north of the ASB includes a shallow tide flat area that has been colonized by eelgrass. The eelgrass flat transitions to a gravel beach toward the foot of Hilton Avenue with armoring located in the high intertidal area and a steel sheet pile bulkhead located along the northwestern shoreline. The area west of the ASB toward Bellingham Bay consists of sandy sediments that slope offshore toward deep water, transitioning to fine silt sediments in deeper water.

3.1.2 Utilities and Stormwater Conveyance

A significant network of utilities and stormwater conveyance features exists at the Site. In some circumstances, utility corridors can act as preferential flow pathways for the flow of groundwater. Therefore, utility and stormwater line locations and depths were reviewed as part of the Roeder Avenue Landfill RI/FS to determine which utility locations could be of potential significance to groundwater flow patterns. Additional utilities and stormwater lines were also located during 2013 supplemental investigations. Those identified in the 1997 and 2013 surveys included the following:

- Sanitary sewer lines, pump stations, and force mains (City)
- Storm drains and catch basins (City, Port, and private)
- C Street outfall and line (City)
- Abandoned F Street stormwater outfall (City)
- Underground and overhead electric service (PSE and private)
- Overhead telephone and electric service
- Underground fiber-optics (Starcom and US West)
- Underground hydraulic lines (Colony Wharf)
- Natural gas lines
- Water supply lines

Stormwater discharges from the Site are a potential source of contamination to Whatcom and I&J Waterway and include inputs from the City, Port, and Bornstein Seafoods, which are described in this section. A total of five waterfront or surface water discharge source locations to I&J Waterway were identified (Figure 3-1). The potential sources included two Bornstein Seafoods National Pollutant Discharge Elimination System (NPDES) discharge outfalls, one Port stormwater outfall, and two unknown outfalls. Four outfalls have been identified along the west shoreline that discharge to the ASB, formerly operated by Georgia Pacific West, and currently managed by the Port. The C-Street outfall and line are situated along C Street and the discharge location is shown in Figure 3-1.

3.2 Geology

This section describes the geologic conditions underlying the Site. Geologic units beneath the Site include a variety of unconsolidated materials overlying a western sloping consolidated unit, as described below.

3.2.1 Site Stratigraphy

The conceptual model of Site stratigraphy is based on regional geologic knowledge, as well as geologic data collected during recent and historical investigations. The geologic data used to interpret the Site stratigraphy are derived from field investigations conducted as part of the Roeder Avenue Landfill, Central Waterfront RI activities, and other Central Waterfront area investigations.

Five stratigraphic units were identified in the depth interval that was investigated. These units are (to approximately 75 feet bgs): Landfill Cover Soils Unit, Refuse Unit, Soil Fill Unit, Sand Unit, and the Glacial Marine Drift. The stratigraphic relationship between these units is illustrated in Figures 3-2a and 3-2b. Detailed unit descriptions follow.

3.2.1.1 Landfill Cover Soils Unit

Soils used to cover refuse from the former landfill comprise the Landfill Cover Soils Unit. The Landfill Cover Soils Unit is in contact with refuse from the former landfill and directly overlies the Refuse Unit. Characteristics of the Landfill Cover Soils Unit may have been modified from pre-warehouse conditions within the footprint of the tissue warehouse and associated paved areas. Prior to the GP tissue warehouse construction, the cover soils were the first material encountered by precipitation and surface water infiltrating into the Refuse Unit. The warehouse and associated paved areas have eliminated or reduced infiltration over large areas of the unit. The majority of this unit is unsaturated and typically lies above the local water table.

The thickness of the Landfill Cover Soils Unit varies from 2 to more than 10 feet. Portions within the warehouse footprint may have been re-graded during construction. Examples of the lateral and vertical extent of pre-warehouse landfill cover soils are shown in representative cross sectional views in Figures 3-2a and 3-2b. The extent of landfill cover soils is based on historical information as well as current investigation data.

The Landfill Cover Soils Unit consists of fill materials placed following closure of the landfill including sediments removed during construction of the ASB, stockpile soils from the Chestnut Street relocation project, and additional soil and wood waste from the GP log yard (RETEC 1996). This unit is primarily composed of a mixture of loosely compacted sand, gravel, and silt. Localized areas contain a large percentage of fine lime, wood, and other materials. Also present are layers typically less than 1 foot thick composed of heterogeneous mixtures of gravel, sand, silt, clay, fine lime, cobbles, wood, and building materials such as cinder blocks, bricks, and wood planking (RETEC 1997). Visual observations of soil samples and drill cuttings indicate that the percentage of sand and silt in the Landfill Cover Soils Unit increases from east to west.

3.2.1.2 Refuse Unit

The Refuse Unit underlies the Landfill Cover Soils Unit. It has the same areal extent as the Landfill Cover Soils Unit. The unit is underlain by the Sand Unit across most of its footprint. However, refuse was placed directly on the Glacial Marine Drift in some areas. The Refuse Unit is partially below the water table and highly heterogeneous and generally porous.

The average thickness of the Refuse Unit is about 23 feet with a maximum thickness of 34 feet. Refuse Unit thickness variations are shown in the cross sections in Figures 3-2a and 3-2b. The Refuse Unit thickness variations are a function of the original landfill excavation topography and the volume of refuse placed at any given location.

The Refuse Unit is composed of roughly 50% municipal waste and 50% wood waste. The distribution of both types of waste is heterogeneous both vertically and horizontally. Layers of waste are typically separated by 6 to 12 inches of soil mostly derived from excavation of the sand beneath the landfill. The municipal waste is composed primarily of small, household-type material such as newspaper, cardboard, plastic, bottles, and cans. Automotive material such as gaskets, spark plugs, and tires are also present. A small amount of industrial-type refuse such as steel cable, wire, metal debris, chains, conveyor belts, and concrete wastes is also present in localized areas.

The wood waste occurs within and above the municipal waste. The wood waste is primarily derived from log yard operations and ranges in size from layers of wood chips, dust, and fibers less than 1 foot thick up to 2-foot diameter logs.

3.2.1.3 Soil Fill Unit

The Soil Fill Unit is located to the south and north of the landfill, as shown in Figures 3-2a and 3-2b (transects B and D). It is underlain everywhere by the Sand Unit and is partially saturated. Where bulkheads are absent along the shoreline, the Soil Fill Unit grades laterally with marine sediments. Borehole data indicate the thickness of the Soil Fill Unit is generally between 10 and 15 feet thick but can be nearly 20 feet thick in localized areas.

Most of the Soil Fill Unit is composed of loose to poorly compacted sand, silty sand, and silt derived mainly from the initial dredging of Whatcom and I&J Waterways. Occasional shell fragments, gravel layers, and organic material such as reeds and other plant matter are also present. Other debris such as wood and concrete may be locally present.

According to historical information, most of the fill material is derived from dredging of the adjacent Whatcom and I&J Waterways. Other fill sources are described in the Roeder Avenue Warehouse Feasibility Analysis report (RETEC 1996). This references infill of concrete debris in the area of the former cement plant. Another fill project appears to have been constructed along C Street and Roeder Avenue between 1922 and 1946 based on available maps and photographs; the source of fill material is not known for this project (RETEC 1996). Chevron reports also document infilling of the Chevron area in coordination with the independent cleanup actions performed in the early 1990s. Chevron imported soil from nine outside Chevron facilities undergoing renovation or remedial activities.

3.2.1.4 Sand Unit (Native Sediment)

The Sand Unit, also referenced as the native sediment, is present across the entire Site, except in localized areas where it was excavated for use as landfill soil cover. The Sand Unit is located beneath the Refuse Unit in the landfill area and beneath the soil fill surrounding the landfill. The unit is saturated.

Gravels and shell fragments in the sand matrix indicate the Sand Unit is a native beach deposit. PacRim Geotechnical (PacRim 1997) also interpreted the unit as a beach deposit. The thickness of the Sand Unit varies from 0 to 35 feet. In undisturbed areas, the minimum thickness of sand is about 10 feet. Sand Unit thickness variations are shown in Figures 3-2a and 3-2b. Aside from thickness variations due to excavation activity, the Sand Unit generally increases in thickness from the northeast to southwest.

The Sand Unit is mostly fine-grained sand with varying percentages of silt and occasional interbeds of silt and silty sand. Medium- and coarse-grained sand and gravels occur in localized areas. Shell fragments are common, but comprise less than 10% of the unit. The density of the Sand Unit varies from loose to medium dense. In general, the density decreases with depth. The Sand Unit is typically gray in color.

A 5-foot thick gravel bed was encountered at RMW-13D at an approximate elevation of 5 to 10 feet below MLLW. This gravel bed may be a former channel of Whatcom Creek unrelated to the sedimentary environment in which the Sand Unit was deposited. Soil boring data indicate that the gravel pinches out to the northwest between RMW-13D and RMW-12D. The gravel extends an unknown distance to the southeast.

3.2.1.5 Glacial Marine Drift

The Glacial Marine Drift is a regional geologic unit deposited during the most recent glaciation of the Puget Sound region. The Glacial Marine Drift is present across the entire Site. This fine-grained unit forms the bottom confining layer for the Site Groundwater Unit. As described in the 1998 Roeder Avenue Landfill Work Plan, previous testing found no significant water-producing lenses present in the Glacial Marine Drift Unit to depths of greater than 100 feet.

The Glacial Marine Drift is about 90 feet thick (Merit 1996). Boreholes at the Site have drilled through 73 feet of the unit without reaching the bottom. The elevation of the top of the unit generally increases from south to north across the Site by about 10 feet.

The Glacial Marine Drift is mainly composed of clay with varying percentages of silt. Discontinuous silt interbeds and fine-grained sand partings and interbeds are also present. These interbeds increase in frequency with depth. Fine- to medium-grained sand and occasional fine to coarse gravel are present within the fine-grained matrix of the unit. Shell fragments have also been noted in the unit. Stiffness of the clay grades from soft to stiff with increasing depth. The clay is gray in color and has a low to high plasticity.

3.2.2 Physical Testing

Geotechnical and petrophysical analysis of selected soil samples and visual observation of soil surface grabs and subsurface soil borings has been performed during a variety of investigations. Subsurface analyses and observations were also conducted during the 2007–2008 RI in order to characterize potential LNAPL mobility and the physical properties of both shallow and deep groundwater zones. Appendix C provides a compilation of available physical testing reports, and Appendix D provides available boring and geotechnical logs applicable to the Site.

Geotechnical testing has been performed at the Site in support of historical property development, the Roeder Avenue Warehouse design, the Whatcom Waterway Pre-Remedial Design Investigation (Anchor QEA 2010) and EDR (Anchor QEA 2015), and testing along the southern Site shoreline (Anchor QEA 2015). Geotechnical borings were primarily performed by hollow-stem auger methodology and were advanced up to an approximate depth between 50 and 75 feet bgs. Select soil samples collected using standard penetration test and Shelby tube samplers were submitted to a geotechnical laboratory for moisture content, sieve analysis, Atterberg limits, consolidation, and undrained unconsolidated triaxial compression testing. A compilation of the physical testing is provided in Appendix C with supporting boring and geotechnical logs included in Appendix D.

3.3 Hydrogeology

The hydrogeology of the Site is complicated by a number of factors. Shoreline reinforcements (e.g., bulkheads), external head sources (e.g., ASB), tidal influence, historical and current utility corridors, and laterally discontinuous hydraulic properties imposed by the presence of the highly conductive Refuse Unit, compound to create a complex subsurface flow environment. The following section describes the Site hydrogeology based on the findings of numerous investigations performed to develop the CSM. Based on these data, a groundwater flow model was developed and calibrated based on empirical data. The groundwater flow modeling is presented in and used in conjunction with the RI/FS to support evaluation of remedial alternatives.

3.3.1 Hydrostratigraphy

The groundwater characteristics in the various stratigraphic units (hydrostratigraphy) vary with location on the Site. In the former landfill area, the Landfill Cover Soils Unit is located in the unsaturated zone. Groundwater is first encountered within the highly permeable Refuse Unit. The Soil Fill Unit is the surficial unit in the areas north and south of the landfill. The upper portion of the Soil Fill Unit is unsaturated and the lower portion is saturated. Both the Refuse Unit and the Soil Fill Unit overlie the Sand Fill Unit (with the exceptions of localized areas where the sand was excavated for landfill cover). The Refuse Unit, saturated portions of the Soil Fill Unit, and the Sand Unit make up the water-bearing unit at the Site (the Site Groundwater Unit). They are underlain by the Glacial Marine Drift, a thick aquitard. Exploratory borings in the area have extended to approximately 120 feet and have not encountered a second water-bearing unit.

The highly permeable Refuse Unit underlying the Landfill Cover Soils Unit is important because it serves as a source of contamination for precipitation infiltrating into the landfill. The Soil Fill Unit is located north and south of the landfill and extends from the landfill to the waterways. This unit is thought to have limited effect on groundwater chemistry except where concrete waste, debris, or contaminant impacts are present. The Soil Fill Unit serves as the porous media through which shallow northward and southward groundwater transport occurs. The primary groundwater contaminant transport pathways between the landfill and the waterways occur in the Sand Unit. The fine-grained Glacial Marine Drift is the bottom confining layer for groundwater flow at the Site and has a thickness of greater than 90 feet. Contaminant fate and transport is described in Section 6.

3.3.2 Site Hydrogeologic Properties

Groundwater flow at the Site occurs in a shallow, unconfined groundwater unit. As discussed in Section 3.3.1, the Refuse Unit, the Soil Fill Unit, and the native Sand Unit make up the Site Groundwater Unit. Hydraulic conductivities were estimated for the RI/FS using slug test results. Hydraulic conductivity estimates ranged from 16 to 400 feet per day for the Refuse Unit and Soil Fill Unit, and from 5 to 60 feet per day for the Sand Unit. Horizontal hydraulic conductivity was measured in the Glacial Marine Drift Unit during the 2007 RI. Conductivity measurements were 0.00191 and 0.00279 feet per day as measured at CWMW-2, at 35.5 to 36 feet bgs and 36 to 36.5 feet bgs, respectively.

The saturated thickness of the Site Groundwater Unit is defined as the thickness of saturated porous media from the water table surface down to the lower confining unit. As discussed in Section 3.3.5, the water table elevation varies across the Site, seasonally, and due to tidal influence. The average groundwater elevation measured in all active monitoring wells during the dry (September 2007) and wet (March 2008) season gauging events was 8 feet above MLLW. The upper contact of the lower confining unit, the Glacial Marine Drift, varies across the Site from approximately 10 to 25 feet below MLLW, based on cross sectional interpretations from the Roeder Avenue Landfill RI/FS. In general, a substantial portion of the top contact of the Glacial Marine Drift Unit is approximately 20 feet below MLLW. Assuming this elevation for the lower confining depth and the average groundwater elevation as the top depth, the average thickness of saturated media for the Site is 28 feet.

3.3.3 Recharge, Sources, and Sinks

Precipitation recharge, water flow into the Site from sources other than natural precipitation, potential sinks, and salinity are all factors affecting groundwater head. The location and magnitude of these influences in large part determine groundwater flow patterns across the Site.

3.3.3.1 Precipitation Recharge

Average annual precipitation is 36 inches per year (NOAA) at the nearest climate station in Bellingham, Washington. Only a fraction of this precipitation infiltrates as groundwater recharge due to ground cover including buildings and paving.

3.3.3.2 Aerated Stabilization Basin

The ASB is located southwest of the Site and currently influences groundwater conditions at the Site. The water elevation in the ASB was historically higher than Site groundwater, and this head difference resulted in mounding of groundwater on the west side of the landfill as evidenced by the localized area of higher groundwater elevations in the vicinity of RMW-5 present on each of the potentiometric maps presented in Figures 3-3 to 3-5. Between July and August 2008, the ASB water elevation was measured as part of the Whatcom Waterway pre-remedial design investigation and ranged between 13.6 and 13.9 feet above MLLW. Water levels at the ASB have been monitored approximately monthly since 2009. The current water elevation in the ASB as of November 17, 2014, is 12.1 feet above MLLW. During the October 30, 2013, groundwater sampling event, the groundwater elevation was measured at the landfill perimeter shoreline well RMW-5 at 11.6 feet above MLLW. Water levels measured at the ASB on September 26, 2013, and November 12, 2013, were 11.42 and 12.08 feet above MLLW, respectively. Based on these data, ASB water levels and groundwater elevations in adjacent areas of the landfill are within a half-foot of each other, indicating a relatively flat groundwater gradient and area of stagnation under current conditions.[3] As described in Section 3.6.3, the Port cleanup and development plans include a marina within the ASB. This future condition would result in groundwater flow away from the landfill toward the future tidally influenced marina and is evaluated in the FS.

3.3.3.3 Roeder Avenue Recharge

Groundwater flow from the upland (east) side of Roeder Avenue toward the Site is an additional recharge source. The groundwater modeling conducted during development of the draft Roeder Avenue Landfill RI/FS estimated the flow rates from Roeder recharge to be approximately 250 cubic feet per day.

[3]Groundwater elevation trends at the Site are described in detail in Section 3.3.5.

3.3.3.4 Sinks

A hydraulic sink is a pathway by which groundwater is being removed from the groundwater unit (e.g., sump pumps). Hydraulic sinks can be significant at some sites due to influences of utility corridors, pumping stations, or other hydraulic influences on groundwater flow patterns. However, the Roeder Avenue Landfill RI/FS groundwater modeling accurately simulated site conditions without incorporating hydraulic sinks.

Storm drain sampling conducted during 2007 and 2008 field activities further suggest that groundwater is not mixing with stormwater runoff in the storm drain system. The stormwater chemistry shows no evidence of groundwater mixing. In addition, storm drain discharge estimates indicate that there is no appreciable groundwater contribution to the storm drain along the length that spans the Site. Rough estimates of storm drain discharge conducted upgradient of the Site and at the C Street outfall were the same order of magnitude, which indicates that appreciable quantities of groundwater are not entering the storm drain and, conversely, stormwater leakage to the groundwater is not significant.

3.3.4 Tidal Influence

Tides influence groundwater through pressure fluctuations, which affect groundwater head, and result in a nearshore tidal mixing zone. Tidal mixing dilutes solute concentrations in groundwater and changes the salinity of groundwater. Salinity variations result in density variations that can affect groundwater head and therefore groundwater flow patterns. Tidal mixing occurs in the tidally influenced areas shown in the groundwater potentiometric maps (Figures 3-3 to 3-5).

A tidal study was conducted to estimate the influence of tidal fluctuations on groundwater flow patterns and chemistry. Well gauging estimated tidal efficiencies of monitoring wells. Tidal efficiency is defined as the ratio of the water level fluctuation in a given well to the fluctuation in sea level elevation (Erskine 1991).

Tidal efficiency is a measure of the degree to which a well is influenced by tidal fluctuations. Tidal efficiency can be used to estimate groundwater unit hydraulic properties as well as to estimate head fluctuations in a well in response to tides. Tidal efficiency is an indicator of whether or not tidal mixing may be a factor influencing head and solute concentrations in a well. Wells with greater than 1% tidal efficiency, some additional wells outside of the transect areas, and a stilling station in Bellingham Bay were included in the tidal study. Pressure transducers were used to collect water level data at 10-minute intervals for either a 4- or a 6-day period. Water level data from the wells were compared to tidal fluctuations in Bellingham Bay to estimate tidal efficiencies and lag times for each well. Tidal lag time is the difference in time between peak water levels in Bellingham Bay and monitoring wells.

Water levels in wells furthest from the bay (generally greater than 400 feet) showed little to no effects from tidal fluctuations. Tidal effects were greatest in deep wells located within approximately 100 feet of the shoreline. Lag times ranged from 30 minutes to 2.5 hours at both high and low tides. Local soil conditions, distance from the shoreline, and bulkhead presence/conditions affect tidal efficiency and lag times. Heterogeneous conditions in the subsurface can complicate the otherwise direct relationship between distance from the shoreline and tidal response. The Site hydrostratigraphy is heterogeneous due to infilling, the landfill refuse and wood wastes, and native sands, silts, and clay. Despite these conditions, the shortest lag times were observed in wells with the highest tidal efficiencies.

Time lag data from wells that exhibited a clear tidal response pattern (lag time of 1 hour or less) were used to estimate hydraulic conductivity with the Brown method (Bentall 1963). Tidal lag time was also used to identify the groundwater sampling time. In order to represent the “worst-case” conditions (i.e., samples with the least dilution of chemical concentrations by tidal mixing), wells were sampled within 1 hour of low water in the well. Low water was identified for each tidally influenced well by adding the lag time to the predicted time of low tide. Tidal lag was used to identify the water level gauging time and the sampling time, when practical. Water level measurements were collected at high water and low water in tidally influenced wells.

3.3.5 Groundwater Elevation Trends

Three rounds of groundwater elevation measurements were collected during the RI/FS investigation. These gauging rounds were performed in May to June 2007, September 2007, and March 2008. The first gauging event was conducted over several days during initial Site reconnaissance activities (locating existing wells and determining their status). The September 2007 gauging event was performed prior to groundwater sampling and represents groundwater elevations during dry season (low water) conditions. The final round of gauging conducted in March 2008 was performed prior to groundwater sampling and represents groundwater elevations during wet season (high water) conditions.

Groundwater elevation trends are presented as potentiometric maps (Figures 3-3, 3-4, and 3-5). Low and high tide measurements were averaged for tidally influenced wells. These contours represent the topography of the water table surface in the shallow, unconfined groundwater unit. Groundwater flows perpendicularly to these contours from regions of higher elevation to lower elevation. The maps were used to identify characteristics of the overall groundwater flow regime.

In general, the groundwater flow at the Site consists of a groundwater high (ridge) running southwest-northeast across the central portion of the Roeder Avenue Landfill (from Roeder Avenue to monitoring well RMW-5). The highest portion of this groundwater ridge is near well RMW-5; this mounding at RMW-5 is associated with proximity to the ASB. From this ridge along the central landfill, water flows both northward and southward toward the adjacent waterways. Tidally influenced regions extend between 100 to 200 feet inland along the shorelines of the waterways.

The potentiometric maps from May to June 2007 and March 2008 are very similar; the one exception is that the groundwater mound in the vicinity of RMW-5 was more pronounced in May to June 2007. The duration of the wet season is generally considered to be October to April; however, the effect on groundwater elevations often extends into the following months. The groundwater elevations and flow pattern from the May to June gauging event were similar to the March 2008 wet season gauging. This suggests that both gauging events are representative of wet season conditions. September 2007 groundwater elevations were representative of the dry season, showing lower water table elevations. However, the overall, groundwater flow patterns were similar in the wet and dry seasons.

Based on current data as described in Section 3.3.3.2, ASB water levels and groundwater elevations in adjacent areas of the landfill are within a half-foot of each other, indicating a relatively flat groundwater gradient and area of stagnation under current conditions.

3.4 Natural Resources

The Site was constructed of fill and used for land filling and industrial purposes, and therefore the upland has limited value from a natural resources perspective. Terrestrial ecological receptors are not prevalent because of the industrial nature of the area; specifically, the area is covered by buildings, paved roads, parking lots, and other barriers that prevent plants and wildlife from being exposed to the soil contamination.

The Site is located adjacent to Bellingham Bay, which is used by several species of salmon (chum, coho, Chinook), trout (cutthroat, steelhead, bull) and groundfish as well as marine invertebrates including clams, geoduck, oysters, shrimp, and crab. A variety of marine mammals (e.g., seals, sea lions, whales, and porpoise) and waterfowl (e.g., gulls, brant, and ducks) also use Bellingham Bay and the associated waterways. Adjacent intertidal and sediment areas are not included within the Site, with the exception of sediment impacts in the nearshore area of Whatcom Waterway. Intertidal and sediment natural resources are addressed as part of the Whatcom and I&J Waterways sites.

3.4.1 Exclusion from Terrestrial Ecological Risk Evaluation

The Site qualifies for an exclusion from conducting a terrestrial ecological evaluation (TEE) in accordance with WAC 173-340-7491(1)(b). That exclusion specifies that no further TEE is required if "All soil contaminated with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination. To qualify for this exclusion, an institutional control shall be required by the department under WAC 173-340-440. An exclusion based on planned future land use shall include a completion date for such development that is acceptable to the department."

Under the current Site use, most Site soil, contaminated or not, is covered by pavement, buildings, or clean fill soil that provide an effective physical barrier that prevents plants or wildlife from being exposed to underlying soil contamination where present. An exception to this is the northeast portion of the Site, which is currently vacant and not paved or otherwise covered.

Under the Port's planned future land use, it is anticipated that the entire property encompassing the Site will include current and/or new structures, roads, and pavements. New greenscape areas would be new fill placed over the existing fill.

3.5 Historical, Archaeological, and Cultural Resources

A cultural resources assessment was not conducted as part of this RI/FS. A cultural resources assessment was conducted as part of the State Environmental Policy Act (SEPA) process for the *Final Environmental Impact Statement for the Bellingham Bay Comprehensive Strategy* (Anchor Environmental 2000). This assessment identified a number of potential and known historical, archaeological, and cultural resources throughout Bellingham Bay. However, the potential for encountering significant, intact archaeological or cultural resources during cleanup activities in specific Whatcom Waterway and ASB site areas was determined to be low. In addition, cultural resource conditions (historical and archaeological) at the Site are summarized in Section 3.11 of the January 2008 Draft Environmental Impact Statement (DEIS) for the Waterfront District. The results are presented in detail in Appendix M of the DEIS (Blumen and Associates 2008).

Although no archaeological resources have been recorded on the Site, it is located within archaeologically sensitive areas of former tidal flats adjacent to the mouth of Whatcom Creek. Prior to filling and development of the Site, the vicinity consisted of tide flats with the shoreline generally corresponding with the bottom of the bluff area east of Roeder Avenue. Dating back from pre-history to the 19th century, the Bellingham waterfront was traditionally occupied by ancestors of the present-day Lummi Nation and Nooksack Indian Tribe. The settlement and subsistence of communities throughout this region were similar in many ways, primarily in the seasonal cycle of congregation at winter villages. Winter villages were usually located along protected coastlines, where activities such as shellfish gathering and fishing could be pursued. European settlement took hold on Bellingham Bay during the 1850s, and the Bellingham waterfront has since been primarily a shipping and industrial area. Based on pre-development conditions as discussed in the DEIS, the graphic in Appendix M of the DEIS (Blumen and Associates 2008) depicts the expected probabilities (low, medium, high) for the presence of Native American archaeological materials beneath the Site and surrounding areas. The entire Site is classified as "medium" indicating that there is a moderate probability for artifacts being present on the former tide flat surface (Sand Unit) buried beneath fill soils (Soil Fill and Refuse Units).

A review of the registered historical sites conducted for the Site as part of this RI/FS did not identify any registered historical sites on the Site properties. The list of registered historical sites was obtained from the Washington State Department of Archaeology and Historic Preservation's website (www.dahp.wa.gov).

Future cultural assessments will be conducted on an as-needed basis as part of the SEPA review processes planned for the Site and other areas of the Bellingham waterfront included in the Waterfront District area. SEPA review will be conducted as part of the CAP for the Site.

3.6 Current Land Use

Land within the Site is owned by a variety of both public and private entities as shown in Figure 1-2. The existing land uses and use designations within the Site recently changed as part of a long-term planning effort that was performed under an interlocal agreement by the Port and the City. Historical land use and operations are described in Section 2.1.2. The following sections describe the current property ownership within the Site, present an overview of recently completed land use planning activities, and discuss the planned conversion of the ASB to a marina. The updated land use information presented below is incorporated into the RI/FS to ensure that potential contaminant exposure pathways are well understood and integrated into the remedial alternative development and evaluation.

3.6.1 Current Land Ownership and Use

As mentioned above, a variety of public and private entities own property within the Site boundaries. The majority of the parcels within the Site boundaries are owned by the Port. The City owns certain street rights-of-way and a small portion of the parcels in the Colony

Wharf area. Other parcel owners within the Site boundaries include SSC and PSE. A property ownership map is presented in Figure 1-2.

The Port and City lease certain parcels to tenants for a variety of uses. Current tenants are presented in Figure 1-2 and operations are consistent with mixed use land designations. Current tenant and private operations include:

- Boat maintenance and storage (Landings at Colony Wharf)
- Electrical substation (PSE)
- Refuse and recycling truck maintenance and storage (SSC)
- Technology Development Center for educational purposes (Bellingham Technical Institute)
- Seafood processing (Bornstein Seafoods)
- Boat storage and lift service (Hilton Harbor)
- Concrete floats and shore-protection structures (BMI)
- Public trail and parking

As part of land use planning and transition activities (described below), the Port and City are in the process of reviewing and negotiating future tenants and land uses. Future tenants and land use will be consistent with mixed use marine trade designation. The Port is also planning to construct and operate a multi-user barge terminal (C-Street Terminal) at the location of the former Maple Street barge ramp.

3.6.2 Area Land Use Planning

Land use planning activities for the Site and surrounding areas were recently completed as part of the Waterfront District Sub-Area Plan (Port/City 2013). The Waterfront District planning efforts were performed in partnership by the Port and the City, and include an area-wide rezoning from industrial to a combination of commercial mixed-use, industrial mixed-use, and institutional mixed-use. The Site planning area is designated as Marine Trades and is zoned as industrial mixed-use as shown in Figure 3-6.

The key planning elements that affect the Site include the following:

- Development of a marina in the location of the ASB adjacent to the Site

- Development of marine-related uses and potential habitat restoration of shorelines located along I&J and Whatcom Waterways that will include sloping shorelines and bulkhead upgrades where required
- Certain facility upgrades and repairs, and development of transient moorage and public access enhancements
- Improvements to area infrastructure to support future development and public access

The Site comprises an area of approximately 51 acres of the 220-acre Waterfront District and is referred to in the Sub-Area Plan as the Marine Trades Area. The Marine Trades Area is zoned industrial mixed-use to encourage a working waterfront environment that supports the marina and accommodates marine-related businesses as well as institutional research and development.

A Final Environmental Impact Statement (EIS; Port 2010) and Final EIS Addendum (Port 2012) were completed by the Port. The EIS was a companion evaluation to the Waterfront District Redevelopment Project Draft Master Plan completed under SEPA to evaluate the impacts of the proposed rezoning and resulting development.

3.6.3 Planned ASB Reuse

The ASB is located along the western boundary of the Site. The structure was constructed in the late 1970s by GP to treat industrial wastewater from pulp/paper operations and an associated chlor-alkali plant. The Port acquired the ASB property in 2005; however, GP continued to operate the ASB under an individual NPDES permit until 2007 when all GP operations were terminated. While no longer used for industrial wastewater treatment, the Port continues to maintain the ASB under an individual NPDES permit to receive stormwater from the former GP mill property and this Site, as well as to manage remediation-generated wastewater. The ASB breakwater creates a basin that is currently disconnected from Bellingham Bay except for a controlled discharge structure. However, as part of land use planning efforts and in conjunction with the Ecology selected cleanup for the Whatcom Waterway site, impacted sediments within the ASB will be dredged and removed. The breakwater will then be opened, reconnecting the inner basin with the tidally influenced marine waters of the Bay. In the proposed land use plan, the ASB will be redeveloped as a new marina with integrated public shoreline access and habitat enhancements.

4 SITE SCREENING LEVELS

This section presents screening levels against which constituent concentrations in soil, groundwater, and soil vapor are compared for the purpose of defining the nature and extent of contamination at the Site in the RI. The RI screening levels are intended to be conservative and address the full range of potentially applicable exposure pathways and receptors under current and foreseeable future uses of the Site. For any media, RI screening levels will not be set below background concentrations or below analytical practical quantitation limits (PQLs), in accordance with MTCA. While not listed in the screening level tables, regional background concentrations for common urban contaminants (e.g., carcinogenic PAHs [cPAHs], heavy metals, and dioxins/furans) will be considered in evaluation of the data collected during the RI/FS. An exceedance of a screening level does not indicate that cleanup is required but may indicate that additional assessment is warranted. Additional information may be collected in subsequent steps of the MTCA cleanup process to support Ecology's determination of cleanup levels or remediation levels for the Site, in accordance with MTCA (Chapter 173-340 WAC).

The following subsections identify the range of groundwater, soil, sediment, and air (soil vapor) exposure pathways and receptors considered and outline the associated RI screening levels and their derivation. For reference, Figure 4-1 schematically depicts the media and exposure pathways considered in development of screening levels for the Site.

Whatcom and I&J Waterways and the ASB border the Site to the south, north, and west, respectively, but are not part of the Site; they are included within the Whatcom and I&J Waterways sites. Direct exposure to marine water and sediment in these water bodies is addressed by cleanup of the Whatcom and I&J Waterways sites. Soil and groundwater screening levels for the Site are developed to be protective of these media. Sediment screening levels are also developed for select metal constituents in sediment adjacent to Colony Wharf that will be addressed by the Whatcom Waterway cleanup.

4.1 Overview of Exposure Pathways and Receptors

An exposure pathway describes the mechanisms by which human or ecological exposure to site contaminants can occur under current (baseline) conditions, assuming no remedial action or protective control is in place. To be considered complete, an exposure pathway must include the following:

- An identified source of contaminant(s)
- A mechanism for contaminant release and transport from the source
- An exposure route where contact with the contaminant can occur
- A receptor that can be exposed to the contaminant

An exposure pathway is considered complete if a human or ecological receptor can be exposed to a contaminant via that pathway.

The following subsections describe exposure pathways for contaminants in groundwater, soil, sediments, and air (soil vapor) at the Site. Exposure pathways considered for RI screening level development are also summarized in Figure 4-1.

4.1.1 Groundwater Exposure Pathways

Assuming the range of potential future land uses, current and future potentially complete exposure pathways for groundwater include the following:

- **Human inhalation:** Workers and patrons in buildings inhaling indoor air contaminated (via vapor intrusion) by the volatilization of contaminants from shallow groundwater
- **Human direct contact/ingestion:** Workers contacting contaminated groundwater during excavation or other construction-related activities if no worker protection controls are in place
- **Ecological:** Direct exposure for benthic and aquatic organisms in Bellingham Bay and Whatcom and I&J Waterways if groundwater contaminants migrate and discharge to marine sediment and surface water
- **Human consumption:** Humans consuming organisms contaminated by discharges of contaminated groundwater to marine sediment and surface water

As discussed in Section 4.2.1, groundwater at the Site is not a practicable source of potable water under current and foreseeable future conditions. As such, the human use of groundwater at the Site for drinking water purposes is not considered a current or future potentially complete pathway.

4.1.2 Soil Exposure Pathways

Assuming the full range of potential future land uses, current and future potentially complete exposure pathways for soil include the following:

- **Human direct contact/ingestion:** Workers or visitors contacting contaminated soils (skin contact and incidental ingestion) or inhaling contaminated dust or vapors from soil during excavation or other construction-related activities if no protection controls are in place
- **Human inhalation:** Workers or visitors contacting contaminated soils or inhaling contaminated dust or vapors from soil and decomposition of refuse in the future if no controls are in place to restrict exposure
- **Soil-to-sediment:** Erosion and runoff of surficial/bank soils to sediments if no controls (i.e., capping) are in place

In addition to these pathways, contaminants in the soil can leach to groundwater and be released into the air through vapor intrusion of volatile contaminants. Therefore, the soil-to-groundwater and soil-to-groundwater-to-air exposure pathways are also considered in the RI. The soil-to-groundwater pathway considers the most stringent groundwater screening levels protective of the multiple exposure pathways described previously.

Terrestrial wildlife exposure to soil is not considered a complete exposure pathway for the Site. Current conditions limit terrestrial wildlife exposures and plans for future redevelopment of the Site, which includes new structures, roads, and pavement. In the event of contaminated soil left in place, the Port will put in place legally binding institutional controls (environmental covenant[s]) that require perpetual maintenance of the capping materials as needed to prevent wildlife exposure to underlying, potentially contaminated soil after the cleanup action is implemented.

4.1.3 Air (Soil Vapor) and Landfill Gas Exposure Pathways

Assuming the range of potential future land uses, current and future potentially complete exposure pathways for air (soil vapor) include the following:

- Workers and patrons in buildings inhaling indoor air contaminated (via vapor intrusion) by volatile contaminants originating from soil and refuse or groundwater
- Workers breathing air contaminated by dust or vapors during excavation or other construction-related activities if no worker protection controls are in place

4.1.4 Sediment Exposure Pathways

Select metals (copper, zinc, and tributyltin [TBT]) were detected at elevated concentrations and exceeded the Sediment Management Standards (SMS) sediment quality standard (SQS) criteria in one 2004 sediment sample (CWB-3) adjacent to Colony Wharf (Appendix E, Figure 18). These metals are potentially associated with releases from the Site and are co-located with contaminated sediment within the Whatcom Waterway site. In addition, another 2004 sediment sample (CWB-2) failed the SMS biological criteria (bioassay testing) indicating toxicity, but no chemical exceedances were observed. Whatcom Waterway sediments were remediated during Phase 1 cleanup activities in 2015 and 2016 (see Section 2.4.1).

In accordance with the Final EDR for the Whatcom Waterway Phase I cleanup (Anchor QEA 2015), Site-related contaminated subsurface sediments co-located with Whatcom Waterway sediments were remediated by dredging and engineered capping completed during Phase 1 of the Whatcom Waterway cleanup in mid-2016. Sediments were removed by dredging along the Central Waterfront southern shoreline to an elevation of 24 feet below MLLW and were included in slope cutbacks in the Laurel Street area of the Chevron property and in stretches of the shoreline located immediately east and west of the Maple Street bulkhead. Dredged contaminated sediments were managed by upland disposal. Sediments that remained in place after dredging were contained using an engineered cap with armor (combination of Type I and Type II cap designs),[4] which addressed the sloping edges of the Central Waterfront shoreline, contaminant mobility, and bioturbation. In addition, other construction elements included installing shoreline containment walls to address shoreline stabilization and source control requirements in order to protect the Whatcom Waterway sediment from potential recontamination from the Site contaminated soils and groundwater (such as a new partially exposed steel sheetpile containment wall between the former Chevron property and Maple Street bulkhead; a groundwater cutoff steel sheetpile wall and a bulkhead replacement at Maple Street; and a new partially exposed steel sheetpile wall between Maple Street bulkhead and Meridian Pacific property). In addition, remediation included extensive removal of existing creosote-treated structures and shoreline debris and replacement of certain existing structures (such as a barge ramp at Maple Street bulkhead and a crane pad adjacent to Meridian Pacific property). Additional details regarding the work completed during Phase 1 of the Whatcom Waterway cleanup are included in Section 9.1.5.4.

Assuming the range of potential future land uses, current and future potentially complete exposure pathways for sediment include the following:

- **Benthic organisms:** Direct exposure for benthic and aquatic organisms present in the biologically active zone (0 to 12 centimeters)
- **Higher trophic level organisms:** Food chain effects associated with the potential bioaccumulation of contaminants
- **Human consumption of seafood:** Humans consuming organisms contaminated by marine sediment
- **Human direct contact/ingestion:** Workers or visitors contacting contaminated sediments (skin contact and incidental ingestion) or inhaling contaminated vapors from sediment during excavation or other construction-related activities if no protection controls are in place

[4] The majority of the deeper shoreline areas were capped using a Type II cap design, with a sand layer of 2 feet and a gravel armoring layer of 1-foot thickness. Exposed upper slope areas (above 8 feet below MLLW) were capped using a Type I cap design, including an additional layer of rock armor to protect against wind and wave erosion. Rock armor consistent with the Type I cap design was placed in the lower slope areas (between 8 and 20 feet below MLLW) near the Maple Street bulkhead to protect against potential propwash disturbances in this area from vessel traffic.

4.2 Derivation of Screening Levels by Media

The basis for establishing RI screening levels for groundwater, soil, sediments, and air (soil vapor) is described in the following subsections.

4.2.1 Groundwater Screening Levels

For constituents analyzed for at the Site (pre-RI and RI data), Table 4-1 presents the range of criteria from which groundwater screening levels are derived, along with the most stringent of those criteria, which are applied as the screening levels for this RI. This section presents the derivation of the RI groundwater screening levels.

4.2.1.1 Highest Beneficial Use of Site Groundwater

Ecology has determined that groundwater at this Site is classified as nonpotable in accordance with WAC 173-340-720(2), as follows:

(2)(a): *The groundwater does not serve as a current source of drinking water.*
Drinking water at this site is currently supplied by the City. Drinking water supply wells are not known to exist at this Site.

(2)(c): *The department determines it is unlikely that hazardous substances will be transported from the contaminated groundwater to groundwater that is a current or potential future source of drinking water, as defined in (a) and (b) of this subsection, at concentration which exceed groundwater quality criteria published in chapter 173-200 WAC.*

Remedial investigation work at the Site indicates that contaminated groundwater occurs in the Site Groundwater Unit. As described in Section 3.3.1, this unit consists of the Refuse Unit, saturated portions of the Soil Fill Unit and the Sand Unit. The Soil Fill Unit and Sand Unit discharge directly into Bellingham Bay. Contaminated groundwater in these shallow water-bearing zones will not flow laterally inland toward a current or potential future source of drinking water, because the inland aquifer is hydraulically upgradient of the shallow water-bearing zones. Similarly, contaminated groundwater in the Sand Unit will not flow vertically downward into a deeper regional aquifer that is a current or potential future source of drinking water because the Site Groundwater Unit is underlain by the Glacial Marine Drift aquitard.

(2)(d): *Even if groundwater is classified as a potential future source of drinking water under (b) of this subsection, the department recognizes that there may be sites where there is an extremely low probability that the groundwater will be used for that purpose because of the site's proximity to surface water that is not suitable as a domestic water supply. An example of this situation would be shallow groundwater in close proximity to marine waters such as on Harbor Island in Seattle. At such sites, the department may allow groundwater to be classified as nonpotable for the purposes of this section if each of the following conditions can be demonstrated. These determinations must be for reasons other than that the groundwater or surface water has been contaminated by a release of a hazardous substance at the site.*

(ii) *There are known or projected points of entry of the groundwater into the surface water.*

Remedial investigation work at the Site indicates that groundwater enters Bellingham Bay.

(iii) *The surface water is not classified as a suitable domestic water supply source under chapter 173-201A WAC.*

Bellingham Bay is a marine surface waterbody and does not classify as a suitable domestic water supply under Chapter 173-201A WAC.

(iv) *The groundwater is sufficiently hydraulically connected to the surface water that the groundwater is not practicable to use as a drinking water source.*

Remedial investigation work at the Site indicates that groundwater is hydraulically connected to Bellingham Bay. It is not practicable to utilize Site groundwater as a drinking water source due to the potential for drawing saline water into the water-bearing zone (salt water intrusion).

Because drinking water is not a practicable future use for Site groundwater, groundwater screening levels applied in this RI are the most stringent value based on protection of the adjacent marine environment (water and sediment) or vapor intrusion to future structures (indoor air) or outdoor ambient air on the Site. The derivation of groundwater screening levels for marine protection and vapor intrusion protection is described in the following section.

4.2.1.2 Protection of Marine Surface Water and Sediment

Considering the factors presented above, RI groundwater quality data are compared against groundwater screening levels that are the most stringent criterion based on protection of marine surface water and sediment, as described in the following subsections.

Protection of Marine Water Quality (Water Column)

In accordance with MTCA (WAC 173-340-720[1][c]), groundwater screening levels protective of surface water incorporate MTCA surface water cleanup levels including criteria from applicable state and federal laws (e.g., WAC 173-340-730).

For protection of marine water quality, screening levels are the most stringent of aquatic life criteria (marine chronic) and human health criteria for consumption of aquatic organisms under state and federal laws including the following:

- **Washington State Water Quality Standards** (WAC 173-201A-240)
- **Federal National Recommended Water Quality Criteria** pursuant to Section 304(a) of the Clean Water Act
- **Federal National Toxics Rule** (40 Code of Federal Regulations [CFR] 131.36) because Washington State does not fully comply with Section 303(c)(2)(B) of the Clean Water Act
- **MTCA Standard Method B surface water cleanup levels** have been adjusted downward assuming a higher fish consumption rate than the 54 grams/day default MTCA value and the 0.5 fish diet fraction (i.e., half of the fish consumed are from the Site). As required by Ecology, a 173 grams/day total fish consumption rate, based on the Tulalip Tribal Seafood Consumption study (Toy et al. 1996) consisting of 62 grams/day shellfish, 8 grams/day bottom fish, and 103 grams/day pelagic fish (e.g., salmon), was applied for this Site. The shellfish and bottom fish are assumed to reside solely at the Site, whereas the salmon have a broad home range such that their

exposure to the Site is assumed negligible. As such, a 70 grams/day combined shellfish and bottom fish consumption rate, with a fish diet fraction of 1.0 (all from the Site), is assumed for calculating site-specific MTCA Method B surface water screening levels for screening level derivation, and those levels are 2.6 times more stringent than MTCA-default values. However, MTCA Method B cleanup levels are developed only if sufficiently protective human health-based surface water criteria or standards (Applicable or Relevant and Appropriate Requirements [ARARs]) have not been established under applicable state and federal laws, in accordance with WAC 173-340-730(3)(b)(iii). If a sufficiently protective ARAR exists for a compound, "ARAR" is displayed for that compound in the MTCA Method B surface water cleanup level column of Table 4-1. If a sufficiently protective ARAR is not available, the MTCA Method B surface water cleanup level is applied, adjusted downward for the assumed higher fish consumption rate.

Protection of Marine Sediment

The RI groundwater screening levels must protect against recontamination of marine sediment quality, assuming that groundwater contaminants transported from the Site (upland) would partition from groundwater to sediment within the bioactive zone, which is operationally defined for the adjacent Whatcom and I&J Waterways sites as the uppermost 12 centimeters of sediment below mudline. Sediments within Whatcom and I&J Waterways are already contaminated, but this is not considered in the derivation of RI groundwater screening levels.

For long-term protectiveness of marine sediment quality (to ensure chemicals will not accumulate above protective levels), groundwater screening levels are calculated based on steady state (long-term) equilibrium (partitioning between sediment and groundwater) with the marine Sediment Cleanup Objective (SCO; WAC 173-204-320). For organic chemicals that partition to sediment organic carbon, a fractional organic carbon (foc) of 1 (100%) is assumed, and groundwater concentrations protective of marine sediment are calculated as the SCO divided by the sediment organic carbon : water partition coefficient (Koc). For inorganics, the calculation uses the dry weight SCO and sediment : water distribution coefficient (Kd). Distribution and partition coefficients are taken from Ecology's Cleanup Level and Risk Calculation database (https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx), downloaded May 2012. The following considerations were applied for the protection of marine sediment:

1. **Benthic organisms:** The potential for direct exposure of benthic and aquatic organisms present in the biologically active zone (0 to 12 centimeters) of sediment adjacent to the Site is low, because the SCO is based on protection of benthic organisms spending their full lifecycle in the sediment. Following the Whatcom Waterway cleanup, sediments will be dredged and armored caps will prevent and limit benthic exposure to any residual contamination.
2. **Human consumption of benthic organisms:** The downward-adjusted MTCA Method B surface water levels, accounting for a higher fish/shellfish consumption rate and already used in the Site groundwater screening level development, are consistent with human health assumptions applied to Bellingham Bay sediment cleanups and are adequately protective of this exposure pathway.
3. **Human direct contact with sediment:** The potential for significant direct contact with sediment adjacent to the Site is low, and it would be inappropriate to apply the MTCA soil direct contact reasonable maximum exposure scenario to sediment adjacent to the Site. Following the Whatcom Waterway cleanup, there will be limited area for "beach play" due to land use and the intertidal cap armoring, limiting human exposure to sediment in the intertidal area. In addition, intertidal sediment is only exposed during limited times each day, and during many months (winter) the exposure occurs primarily at night. Finally, the area of groundwater discharge within a potential future intertidal beach area is small, further reducing the footprint of sediment falling under this exposure scenario. In short, the SCO based on protection of benthic organisms spending their full lifecycle in the sediment are also protective of humans having very limited direct contact with that sediment.
4. **Higher trophic level organism consuming benthic organisms:** The potential for food web/ecological exposure is limited because the sediment will be capped and/or dredged as part of the Whatcom and I&J Waterways site cleanups.

As shown in Section 6 of this document, the primary Site groundwater contaminants of concern (COCs) are TPH, PAHs, and metals (total and dissolved fractions). Regarding TPH, specific considerations apply. Currently, TPH screening levels for groundwater protective of surface water do not exist. In addition, marine SCO values are not available for the lighter end compounds in gasoline but are available for individual compounds such as PAHs found in heavier petroleum fractions (TPH-D and TPH-motor oil range [TPH-MO]) to calculate groundwater concentrations of individual compounds protective of marine sediments. Therefore, cleanup levels based on MTCA Method A will be used as the groundwater screening levels, protective of marine surface water and sediment at 800 micrograms per liter (µg/L; based on presence of benzene) for TPH-G and 500 µg/L for TPH-D and TPH-MO.

4.2.1.3 Protection from Vapor Intrusion

Volatilization of contaminants in shallow groundwater can represent a potential issue for vapor intrusion to future structures (indoor air) or outdoor ambient air on the Site. For the purposes of this RI, conservative ("Tier 1") groundwater vapor intrusion screening levels are obtained from Table B-1 of Appendix B to Ecology's guidance for evaluating soil vapor intrusion (Ecology 2009). Air concentrations protective of indoor air are more stringent than those for outdoor air; therefore, Ecology's guidance includes groundwater screening levels based on indoor air only. Measured soil vapor data can also be used to empirically assess the groundwater-to-air pathway in accordance with Ecology (2009).

4.2.1.4 Point of Compliance for Groundwater Screening Levels

Under MTCA, the standard point of compliance for groundwater cleanup levels is throughout Site groundwater, regardless of whether groundwater is potable or not (WAC 173-340-720(8)(b)). If it is not practicable to meet groundwater cleanup levels throughout the Site within a reasonable restoration time frame, Ecology may approve a conditional point of compliance for groundwater in accordance with WAC 173-340-720(8)(c) and (d).

For volatile groundwater contaminants that can pose a risk via vapor intrusion, protectiveness is achieved by meeting vapor intrusion-based groundwater cleanup levels throughout Site groundwater or wherever structures would be built on grade in the future. Therefore, for vapor intrusion protection, the point of compliance for Site groundwater is throughout the shallowest aquifer (Site Groundwater Unit).

At this Site, where groundwater's highest beneficial use is discharge to marine water, protectiveness of that beneficial use is dependent on meeting marine-protection-based groundwater cleanup levels at the points where groundwater discharges to marine sediment (bioactive zone) and then the marine water column of Whatcom and I&J Waterways and Bellingham Bay. Therefore, a groundwater conditional point of compliance within the sediment bioactive zone would achieve protection of the marine environment (sediment and water column).

The practicability of meeting groundwater cleanup levels throughout the Site within a reasonable restoration time frame is determined in the evaluation of remedial alternatives. Consequently, for data screening purposes, the MTCA standard point of compliance will be assumed, and data from each Site well will be compared against groundwater screening levels protective of both vapor intrusion and marine protection. However, the evaluation of remedial alternatives in the FS is informed by subarea-specific evaluations of nature and extent, focusing on data from shoreline monitoring wells relative to screening levels for protection of the marine environment (Section 6). As part of the FS process, a more detailed evaluation of contaminant natural attenuation occurring in the nearshore portion of the aquifer, prior to discharge to the marine environment, is considered in remedy selection (Appendix H).

4.2.2 Soil Screening Levels

Soil screening levels depend on current and planned use of the Site, which, in accordance with MTCA, can be divided into industrial use and everything else (unrestricted, which includes residential). The current use of the Site is industrial and meets the requirement of a "traditional industrial use" under MTCA (WAC 173-340-745). The Port's future use of the Site could be industrial or another use (e.g., mixed use), and the redevelopment planning is ongoing as described in Section 3.6. In addition to direct contact exposure to soil, the soil screening levels also need to address soil leaching to groundwater discharging to marine water/sediment, soil leaching to groundwater with volatilization to air, and, for petroleum hydrocarbons, generation of mobile non-aqueous phase liquids (NAPLs; residual saturation). Site-specific measurements of residual saturation are discussed in Section 3.2.2. The soil-to-air pathway is assessed empirically using subarea-specific soil gas data because numerical soil screening levels are not available for that pathway (Ecology 2009). Areas within the landfill boundary are assumed to pose a threat to human health or the environment through direct contact or release to the environment.

Under the recent land use planning process, it is anticipated that land use designations will be variable across the Site. The analytical data for Site soil (other than the landfill refuse area) are compared against soil screening levels for unrestricted land use in this RI/FS. Derivation of the unrestricted and industrial soil screening levels is described in the following subsections.

4.2.2.1 Unrestricted Land Use Soil Screening Levels

Unrestricted soil screening levels are the most stringent concentration based on human-direct-contact and soil-leaching-to-groundwater exposure pathways. The values considered for those exposure pathways are described as follows. Soil concentrations protective of air are evaluated empirically using soil gas data for applicable areas of the Site (described in Section 6). For constituents analyzed for at the Site (pre-RI and RI data), Table 4-2a presents the range of criteria from which unrestricted land use soil screening levels are derived, along with the most stringent of those criteria (based on protection of groundwater for the Landfill Footprint and C Street Properties subareas and based on protection of direct contact for the Hilton Avenue Properties subarea), which are applied as the screening levels for this RI.

Direct Contact Pathway

Soil concentrations protective of human direct contact under unrestricted land use are the more stringent of MTCA Standard Method B soil cleanup levels and select MTCA Method A unrestricted soil cleanup levels. Unrestricted land use soil screening levels protective of direct contact are the most stringent soil criteria only for the Hilton Avenue Properties subarea, where empirical data have shown leaching to groundwater is not a complete pathway (see Section 6).

Most MTCA Method A unrestricted soil cleanup levels are based on either direct contact using the MTCA standard Method B equations (WAC 173-340-740[3][b]) or protection of groundwater for drinking water (potable) use. At this Site, groundwater's highest beneficial use is discharge to marine water/sediment, not drinking water, as described in Section 4.2.1. Therefore, the MTCA Method A soil cleanup levels based on groundwater protection are not applicable, and this pathway is addressed separately using the most stringent groundwater screening levels developed in accordance with MTCA. In addition, the MTCA Method A direct-contact-based values are covered by including MTCA Standard Method B cleanup levels in the screening level derivation. The MTCA Method A values that are included in the RI unrestricted soil screening level derivation include arsenic (background-based), lead (no MTCA Method B value), total PCBs (from the Toxic Substances Control Act [TSCA]), and TPH-D and TPH-MO (based on generation of NAPL petroleum).

Soil Leaching Pathway

Soil leaching pathway soil concentrations protective of groundwater's highest beneficial use are calculated using Ecology's variable parameter three-phase partitioning model (WAC 173-340-747[5]) and using the most stringent groundwater screening level protective of vapor intrusion for unrestricted land use, marine water quality, and marine sediment quality (described in Section 4.2.1). Separate values are developed for unsaturated versus saturated soil, in accordance with WAC 173-340-747(4)(e). MTCA-default parameters (WAC 173-340-747[4] and [5]) are used in the three-phase model, except for inclusion of the following two Site-specific parameter values:

- A soil fractional organic carbon content (foc) of 0.0078 (0.78%)[5] is used for calculation of soil : water partition/distribution coefficients (Kd = Koc x foc) for organics, in accordance with WAC 173-340-747(5)(b)(i).
- Because the water table is shallow and variable in depth across the Site, the saturated soil screening levels (most stringent) are uniformly applied to all soil data for the purposes of this RI.

It is important to recognize that the RI soil screening levels derived to protect groundwater discharging to the marine environment are extremely conservative in terms of actual soil leaching risk to the marine environment. Unrestricted land use soil screening levels protective of groundwater are the most stringent soil criteria only for the Landfill Footprint and C Street Properties subareas, where groundwater impacts are present. The derived soil screening levels are back-calculated from a groundwater concentration applicable at the

[5] Site-specific foc of 0.0078 was derived as the geometric mean of the foc values measured in 26 samples. This is considered a representative and conservative value because it includes samples from both the shallower Soil Fill Unit and the deeper Sand Unit (Native).

point of marine exposure (sediment bioactive zone). As described in Section 4.2.1.4, this RI applies the MTCA groundwater standard point of compliance (i.e., throughout the aquifer), not a conditional point of compliance where groundwater actually discharges to the marine environment (point of exposure). Significant attenuation of contaminant concentrations occurs during groundwater transport from upland locations to the sediment bioactive zone.

Therefore, beyond the MTCA-default screening levels applied in this RI, empirical evidence is also used to assess soil concentrations protective of groundwater for select subareas of the Site, in accordance with WAC 174-340-747(9). The Site-specific information is detailed in Section 6, which presents a CSM identifying contaminant nature, extent, and fate/transport for each of the Site subareas.

Finally, area background contaminant concentrations have not been formally established in accordance with MTCA (WAC 173-340-709) for the area surrounding the Site or elsewhere in Bellingham, Washington. Therefore, no adjustment of soil screening levels is made based on area background conditions. However, urban background concentrations of widespread urban contaminants (e.g., PAHs) have been measured in soils within Seattle and Bellingham, Washington, and this information is incorporated into Section 6 of this RI/FS as appropriate.

Note that risk-based Method B soil cleanup levels for TPH, addressing all exposure pathways, will be evaluated for specific Site subareas based on subarea-specific data. These cleanup levels are not included in Table 4-2a.

4.2.2.2 Industrial Land Use Soil Screening Levels

Industrial soil screening levels are based on the protection of adult workers including the most stringent concentration of levels developed to be protective of two exposure pathways: 1) human-direct-contact; and 2) soil-leaching-to-groundwater exposure pathways. The values considered for each exposure pathway are described as follows. For constituents analyzed for at the Site (pre-RI and RI data), Table 4-2b presents the range of criteria from which industrial land use soil screening levels are derived, along with the most stringent of those criteria (based on protection of groundwater for the Landfill Footprint and C Street Properties subareas and based on protection of direct contact for the Hilton Avenue Properties subarea), which are applied as the screening levels for this RI.

Direct Contact Pathway

Industrial soil concentrations protective of human direct contact are the more stringent of MTCA Standard Method C soil cleanup levels and select MTCA Method A industrial soil cleanup levels. Industrial soil screening levels protective of direct contact are the most stringent soil criteria only for the Hilton Avenue Properties subarea where empirical data have shown leaching to groundwater is not a complete pathway (see Section 6).

For the same reasons previously described for unrestricted soil screening levels, Method A values included in the industrial soil screening level derivation include arsenic (background-based), lead (no Method C value), total PCBs (from TSCA), and TPH-D and TPH-MO (based on generation of NAPL petroleum).

Soil Leaching Pathway

The derivation of industrial soil concentrations protective of groundwater is the same as described previously for unrestricted soil screening levels, with the one exception being that vapor-intrusion-based groundwater screening levels for industrial land use are included in selecting the most stringent groundwater screening level for use in the calculation. Therefore, industrial soil screening levels protective of groundwater are the most stringent soil criteria only for the Landfill Footprint and C Street Properties subareas, where groundwater impacts are present.

Table 4-2b presents the industrial land use screening levels applied in this RI for the list of constituents analyzed for at the Site (pre-RI and RI data). Note that risk-based Method C soil cleanup levels for TPH, addressing all exposure pathways, will be evaluated for specific Site subareas based on subarea-specific data. These cleanup levels are not included in Table 4-2b.

4.2.2.3 Protection of Adjacent Sediment Quality

The Central Waterfront cleanup action must protect against recontamination of adjacent marine sediment quality by soil erosion.

For the overall Site, the most stringent soil screening levels (derived based on protection of groundwater) are more stringent than the current SMS criteria, with the exception of regional background for cPAHs and, therefore, they are also protective of marine sediment quality in Whatcom Waterway. In addition, most of the Site is paved and, therefore, the soil-to-sediment pathway is not complete in paved areas of the Site.

Within portions of the Hilton Avenue subarea, where the soil-to-sediment pathway to I&J Waterway is potentially complete, surficial soils are screened to MTCA Methods A and B Unrestricted Land Use values (based on direct contact), which are less stringent than the SCO criteria for marine sediment. Areas in the Hilton Avenue subarea with soils exceeding the applicable most stringent soil screening levels based on direct contact would be addressed by capping, which would also address the soils exceeding soil-to sediment pathway in this subarea.

In addition, the I&J Waterway site developed a site-specific preliminary sediment cleanup level for nickel (211 mg/kg dry weight) (Anchor QEA 2017). This I&J Waterway sediment cleanup level for nickel has been incorporated into the SCO criteria for marine sediment evaluation at the Site.

4.2.2.4 Point of Compliance for Soil Screening Levels

In accordance with MTCA, the point of compliance for direct contact with soil extends to 15 feet below grade, based on a reasonable maximum depth of excavation and assumed placement of excavated soils at the surface where contact occurs. For the soil-leaching-to-groundwater pathway, the soil point of compliance is all depths, above and below the water table. For the soil-volatilization-to-air pathway, the soil point of compliance is also all depths; however, vapor intrusion risks from soils below the water table are better assessed using empirical groundwater quality data (i.e., saturated soil leaching to groundwater and volatilization from groundwater).

4.2.3 Air (Soil Vapor) and Landfill Gas Screening Levels

Ecology's guidance for evaluating vapor intrusion (Ecology 2009) provides unrestricted (MTCA Method B) and industrial (MTCA Method C) soil vapor screening levels against which soil vapor sample analytical results are compared in this RI. Air concentrations protective of indoor air are more stringent than those for outdoor air; therefore, Ecology's guidance includes soil vapor screening levels based on indoor air only.

Ecology's soil vapor screening levels are equal to ten times the corresponding MTCA standard air cleanup levels (for unrestricted or industrial land uses). This is based on USEPA's Subsurface Vapor Intrusion Guidance (USEPA 2002), which allows the use of a 10-fold (0.1) slab attenuation factor to conservatively estimate indoor air concentrations using soil vapor sample analytical results.

The point of compliance for air cleanup levels is ambient air throughout the Site, whether indoors or outdoors.

Table 4-3 presents the air (soil vapor) screening levels applied in this RI for the list of constituents analyzed for at the Site (pre-RI and RI data). Concentrations in samples of subsurface soil vapor are compared against the air screening levels.

4.2.4 Sediment Screening Levels

The sediment screening levels were developed to ensure protection of human health and the environment under the regulatory framework of MTCA and the SMS. The screening levels address protection of sensitive receptors under various potential exposure pathways. For each exposure pathway, the SMS provide methods for calculating lower potential screening levels, or SCO, and higher potential screening levels, or Cleanup Screening Level (CSL). The SCO is a criterion at which no adverse effects occur, including no acute or chronic adverse effects on biological resources and no significant health risk to humans. The CSL is a minor adverse effects level, which is the minimum level to be achieved in all cleanup actions under SMS.

Table 4-4 presents the sediment screening levels applied in this RI for the list of constituents analyzed for at the Site (pre-RI and RI data). Concentrations in samples of sediment are compared against the sediment screening levels. Consistent with SMS, the SCO concentrations are used for screening levels for sediments offshore of the Colony Wharf area. Constituents at concentrations above screening levels include copper and zinc with screening levels of 390 mg/kg dry weight and 410 mg/kg dry weight, respectively. TBT in sediment porewater also exceeded the SCO and Dredged Materials Management Program (DMMP) comparison value of 0.05 μg/L; however, the TBT concentration did not exceed the bioaccumulation trigger value of 0.15 μg/L.

In addition, the I&J Waterway site developed a site-specific preliminary sediment cleanup level for nickel (211 mg/kg dry weight), which will be used during cleanup design) to address the bank erosion (soil-to-sediment) pathway present along the former Olivine Uplands area shoreline at the head of I&J Waterway (Anchor QEA 2017). This I&J Waterway sediment cleanup level for nickel has been incorporated into the SCO criteria (Table 4-4) for marine sediment evaluation at the Site.

5 SITE SUBAREAS FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY

This section identifies and describes the following site subareas for evaluation: the Landfill and Perimeter subarea, C Street Properties subarea, and Hilton Avenue Properties subarea (Figure 5-1). These subareas are based on evaluation of data obtained during the past 20 years of environmental investigations and cleanups as described in Section 2.2. The following discussion identifies the data gaps as described in the RI/FS Draft Work Plan (RETEC 2007a) and subsequent RI addenda, as well as data collection activities for each subarea to address these data gaps. The detailed nature and extent of contamination is presented in Section 6, in development of the Site CSM for each subarea.

The Site subareas have been identified as having soil, groundwater, sediment, and/or gas and soil vapor contamination with the potential for exposure to human health and/or ecological receptors. A data gap assessment was performed and presented in the RI/FS Draft Work Plan based on the evaluation of data collection during the previous 20 years. The data gaps and RI data collection activities were finalized in the first addendum to the RI/FS Draft Work Plan. Additional data gaps were identified to complete RI data collection efforts and address design of the Interim Action. The following documents provide the collective data gaps evaluation and data collection activities for the RI:

- RI/FS Draft Work Plan (RETEC 2007a)
- RI/FS Work Plan Addendum (RETEC 2007b): finalization of Draft Work Plan
- RI/FS Work Plan Addendum No. 2 (AECOM 2012): Interim Action design sampling
- RI/FS Work Plan Addendum No. 3 (Anchor QEA 2012a): environmental conditions along shoreline
- RI/FS Work Plan Addendum No. 4 (Anchor QEA 2012c): shoreline design investigation
- RI/FS Work Plan Addendum No. 5 (Anchor QEA 2012d): use of silica-gel cleanup for NWTPH-Dx analysis
- RI/FS Work Plan Addendum No. 6 (Anchor QEA 2013b): completion of RI data gaps
- RI/FS Work Plan Addendum No. 7 (Anchor QEA 2016b): compliance monitoring
- RI/FS Work Plan Addendum No. 8 (Anchor QEA 2016c): compliance monitoring

Site subareas and their associated COCs identified in the data gaps assessment are described in the following subsections. Each subsection describes each subarea's identified data gaps and the data collection activities conducted during the RI to address the data gaps. Following this section, Section 6 presents the CSM, with a detailed description of the nature and extent of contamination, fate and transport, and exposure pathways and receptors for each subarea. Figures presenting the historical and RI data are included in Section 6, as well the results of data comparison to Site-specific cleanup levels described in Section 4.

5.1 Landfill and Perimeter Subarea

This subarea consists of the former Roeder Avenue landfill and perimeter areas where groundwater and landfill gas have been monitored. Areas within the landfill boundary are assumed to pose a threat to human health or the environment through direct contact or release to the environment, and are addressed in the FS in general accordance with regulatory requirements for solid waste landfills. The extent of refuse and wood waste is the primary basis for delineating the extent of Site soil contamination. Landfill gas extent and groundwater quality have been determined by direct monitoring in areas outside the landfill boundary.

As described in Section 2.2, the nature and extent of contamination associated with the Roeder Avenue Landfill was described in detail in a draft RI/FS prepared for that site and submitted to Ecology in 2001 with Ecology technical assistance under the VCP. The extent of landfill refuse was verified using test pits, soil borings, and historical information. Groundwater quality within and adjacent to the landfill was defined by a network of monitoring wells. The presence, composition, and distribution of landfill gas were assessed directly with vapor sampling.

5.1.1 Remedial Investigation Data Gaps Identified

The following data gaps were identified within the Landfill and Perimeter subarea:

Final RI/FS Work Plan:

1. Document Site-wide groundwater chemistry and flow conditions, including monitoring wells within the Landfill and Perimeter subarea.

2. Determine the presence and distribution of landfill gas from the Site-wide network of existing monitoring wells.

RI/FS Work Plan Addendum No. 6:

1. Provide information on current groundwater quality in the nearshore areas of the Site; the Landfill and Perimeter subarea includes the west Site boundary along the ASB.
2. Confirm the presence of landfill gas along the east Site boundary along Roeder Avenue.

5.1.2 Data Collection Activities

The following data collection activities were conducted during the RI to address identified data gaps:

Final RI/FS Work Plan:

- Site-wide groundwater sampling, including areas within and adjacent to the Landfill and Perimeter subarea, was performed in the fall of 2007 and spring of 2008 during two separate sampling events. Testing included petroleum hydrocarbons, total and dissolved metals, VOCs, SVOCs, and oxygenates.
- Landfill gas monitoring was conducted in 2007 and 2008 at a number of existing monitoring wells in areas within and adjacent to the Landfill and Perimeter subarea. Monitoring was conducted using a combustible gas meter for methane, hydrogen sulfide, carbon monoxide, and oxygen. Volatile organic compounds were also monitored using a PID.

RI/FS Work Plan Addendum No. 6:

- Groundwater sampling was performed at two nearshore monitoring wells (RMW-3D and RMW-5) to provide information on current groundwater quality along the west Site boundary along the ASB. Samples were analyzed for dissolved metals and other conventional parameters (total suspended solids [TSS] and total dissolved solids [TDS]).

- Landfill gas monitoring along the east Site boundary along Roeder Avenue was conducted by direct monitoring of landfill gas from three existing monitoring wells (RMW-16, MW-12(B), and MW-5(B). Monitoring was conducted using a combustible gas meter for methane, hydrogen sulfide, carbon monoxide, and oxygen. Volatile organic compounds were also monitored using a PID.

5.2 C Street Properties Subarea

This subarea consists of the properties along the southern shoreline of the Site that previously included the Chevron and Colony Wharf areas as identified in the RI/FS Draft Work Plan and RI/FS Work Plan Addendum. The previous subareas were consolidated for purposes of this RI/FS to address protection of adjacent sediment and surface water along the southern boundary of the Site and upland areas outside of the former landfill footprint.

Numerous previous investigations have been performed within the C Street Properties subarea as described in Section 2.2. This subarea consists primarily of soil and groundwater impacted by petroleum hydrocarbons from the former Chevron bulk fuel terminal and metals from the former foundry and boat maintenance facilities. In addition, this subarea includes a localized area of metals-impacted sediment.

5.2.1 Remedial Investigation Data Gaps Identified

The following data gaps were identified within the C Street Properties subarea:

Final RI/FS Work Plan:

1. Document the lateral and vertical extent of soil contamination. Numerous previous investigations documented the presence of petroleum hydrocarbons within the C Street Properties subarea; however, additional surface and subsurface soil sampling was needed to adequately delineate the extent of contamination.
2. Determine the deep groundwater quality in the area of the former Chevron bulk fuel terminal. Previous testing of shallow groundwater has shown petroleum hydrocarbon impacts and sampling of deep groundwater was identified as a data gap.
3. Determine the presence and potential mobility of free-phase petroleum product at the former Chevron bulk fuel terminal.

4. Determine the presence and distribution of soil gas associated with petroleum hydrocarbon vapors.

RI/FS Work Plan Addendum No. 2:
Identify potential nearshore (upland and intertidal zone) sources of contamination causing sheens observed along the southern shoreline of the former Chevron bulk fuel terminal. The intent of this data gap investigation was to provide adequate additional information to allow for the development of a potential interim remedial action in this area.

RI/FS Work Plan Addendum No. 3:
Ecology specifically identified the need for supplemental data to document current groundwater and porewater quality in portions of the southern shoreline area along Whatcom Waterway, and to evaluate soil quality in an area where capping/ stabilization of the shoreline may include limited areas of shoreline cut-back.

RI/FS Work Plan Addendum No. 4:
Geotechnical and environmental data needs were identified relating to the partially exposed containment wall and Maple Street bulkhead replacement design along the northern shoreline of the Whatcom Waterway site. Data gaps included identifying potential subsurface concrete debris and testing for geotechnical parameters and potential soil petroleum and metals impacts along the proposed wall and bulkhead replacement alignment.

RI/FS Work Plan Addendum No. 6:
Provide information on current groundwater quality in the nearshore areas of the Site; the C Street Properties subarea includes the south Site shoreline along Whatcom Waterway.

RI/FS Work Plan Addendum No. 7:
Sampling was performed to assess current groundwater, porewater, and seep quality in the southern and western nearshore areas of the C Street Properties subarea, including areas adjacent to containment wall structures that were installed as stabilization and source control measures for the Phase 1 Whatcom Waterway cleanup (see Section 2.4.1).

RI/FS Work Plan Addendum No. 8:

Additional groundwater and porewater sampling was performed to address Ecology's concerns regarding the quality of nearshore groundwater and porewater along the Site's southeastern shoreline and to evaluate the potential for an upland source of PAHs along the northwestern shoreline of the C Street Properties subarea.

5.2.2 Data Collection Activities

The following data collection activities were conducted during the 2007 – 2008 RI and subsequent, focused sampling and testing in 2012, 2013, and 2016:

Final RI/FS Work Plan:

- Surface soil sampling was performed at 15 stations within the C Street Properties subarea including samples CWSS-4 to CWSS-18. Surface soil samples were collected from a depth of 0 to 1 foot bgs and analyzed for metals and PAHs.
- Subsurface soil sampling was performed at 12 stations including CWSB-1 to CWSB-12. Subsurface sampling was generally performed at two depth intervals: one sample above the smear zone and one sample within the smear zone. Analytical testing included petroleum hydrocarbons and SVOCs and metals.
- One deep monitoring well (CWMW-2) was installed using hollow stem auger methodology adjacent to the southwest shoreline. The deep well was screened from 30 to 40 feet bgs. Deep groundwater sampling was performed in both 2007 and 2008 and analyzed for petroleum hydrocarbons, total and dissolved metals, VOCs, SVOCs, and fuel oxygenates.
- A LNAPL mobility assessment was performed to characterize potential LNAPL mobility in areas of known previous petroleum free-product at the former Chevron bulk fuel terminal. During gauging events for this assessment, no measurable LNAPL was observed. Pore fluid saturation and residual saturations were determined using site-specific physical characterization testing from borings.
- Soil gas sampling was performed at ten stations generally within the area of the former Chevron bulk fuel terminal and focused in areas of known petroleum hydrocarbon impacts in soil and groundwater, including previously identified areas of LNAPL observations. Soil gas samples were collected using direct push methodology

equipped with an expandable soil gas probe tip. Soil gas samples were collected at a depth of 5 feet bgs.

RI/FS Work Plan Addendum No. 2:

In May 2012, upland soil borings CWSB-13, CWSB-14, CWSB-15, CWSB-16, CWSB-17, and CWSB-18 were collected along the shoreline. Intertidal soil borings CBA-SB-1, CBA-SB-2, CBA-SB-3, CBA-SB-4, CBA-SB-5, CBA-SB-6, CBA-SB-7, and CBA-SB-8 were collected from the beach area. A total of 20 intertidal area soil sampling test pits (CBA-TP-1 to CBA-TP-20) were dug approximately 1 to 2 feet deep and observed for sheen. A shallow monitoring well, CWMW-18, was also installed using the direct push method adjacent to the shoreline bulkhead. Soil borings and groundwater samples were selectively analyzed for NWTPH-G, NWTPH-Dx, and TOC.

RI/FS Work Plan Addendum No. 3:

In July 2012, porewater samples CW-PW-01 to CW-PW-06; seep samples CW-SP-01 and CW-SP-02; groundwater from monitoring wells CWMW-18, CWMW-2, CWMW-65B, and MW-1(B); and soil samples from test pits CW-TP-01 to CWTP-09 were collected from various depths. Soil samples from CW-TP-09 were collected and analyzed from two depths. All samples were analyzed for TPH and BTEX.

RI/FS Work Plan Addendum No. 4:

In October 2012, upland soil was collected from borings CWSI-01 to CBSI-07 and analyzed for TPH, BTEX, and priority pollutant metals. Additionally, 16 soil samples were analyzed from two deep borings for geotechnical parameters to aid the Whatcom Waterway design.

RI/FS Work Plan Addendum No. 6:

In November 2013, groundwater samples were collected from RMW-1(B) and RMW-7 and analyzed for dissolved metals and other conventional parameters (TSS and TDS).

RI/FS Work Plan Addendum No. 7:

In July 2016, groundwater samples were collected from newly installed Site monitoring wells CWF-CW-1 and CWF-CW-2 and analyzed for total and dissolved metals, PAHs, and TPH. Groundwater samples were also collected from existing Site monitoring wells RMW-7 and

RMW-7 and analyzed for total and dissolved metals. Porewater samples were collected using passive sampling methods from stations CWF-PW-1, CWF-PW-2, and CWF-PW-3 along the western shoreline of the C Street Properties subarea; porewater samples were analyzed for total and dissolved metals, PAHs, and TPH. In addition, one seep sample (CWF-WS-1) was collected from an active seep in the Replacement Maple Street Bulkhead along the Site's shoreline with Whatcom Waterway; that sample was analyzed for total and dissolved metals, PAHs, and TPH.

RI/FS Work Plan Addendum No. 8:

In November 2016, groundwater was sampled from CWF-CW-2 and RMW-7. The sample from CWF-CW-2 was analyzed for total and dissolved metals; the sample from RMW-7 was analyzed for PAHs. In addition, porewater was sampled immediately offshore of CWF-CW-2 along the Site's southern shoreline (CWF-PW-4; located offshore of the east end of the new containment wall) and was analyzed for total and dissolved metals.

5.3 Hilton Avenue Properties Subarea

This subarea consists of the properties along the northern shoreline of the Site that previously included the Olivine Uplands subarea as identified in the RI/FS Work Plan. The previous subarea was consolidated with the former Time Oil area for purposes of this RI/FS to address protection of adjacent sediment and surface water along the northern boundary of the Site and upland areas outside of the former landfill footprint.

Previous investigations have been performed within the Hilton Avenue Properties subarea as described in Section 2.2. The RI/FS Work Plan and previous investigations did not address the former Time Oil fuel terminal located in the northwest vicinity of the Site. This subarea primarily consists of soil and groundwater impacted by metals (nickel) and PAHs from the former Olivine processing facility and petroleum hydrocarbons in soil and groundwater from the former Time Oil fuel terminal.

5.3.1 Remedial Investigation Data Gaps Identified

The following data gaps were identified within the Hilton Avenue Properties subarea:

Final RI/FS Work Plan:

Document the lateral extent of surface soil contamination. Numerous previous investigations documented the presence of nickel at the former Olivine processing facility; however, additional surface soil sampling was identified as a data gap to adequately delineate the extent of contamination.

RI/FS Work Plan Addendum No. 6:

1. Provide information on current groundwater quality in the nearshore areas of the Site; the Hilton Avenue Properties subarea includes the north Site shoreline along I&J Waterway.
2. Determine soil and groundwater quality at the former Time Oil fuel terminal. Soil and groundwater testing was not previously performed in this area. The intent of this investigation was to determine the nature and extent of potential petroleum impacts.

5.3.2 Data Collection Activities

The following data collection activities were conducted during the RI to address identified data gaps:

Final RI/FS Work Plan:

- Surface soil sampling was performed at five stations within the Hilton Avenue Properties subarea including samples CWSS-4 to CWSS-18. Surface soil samples were collected from a depth of 0 to 1 foot below surface and analyzed for metals and PAHs.

RI/FS Work Plan Addendum No. 6:

- Soil samples at the former Time Oil fuel terminal were collected from borings CWSRI-01, CWSRI-02, CWSRI-03, and CWSRI-04 and were analyzed for petroleum hydrocarbons and BTEX. CWSRI-04 was also analyzed for VPH and EPH.
- Groundwater at the former Time Oil fuel terminal was collected from CWSRI-1, CWSRI-2, and CWSRI-4 and analyzed for TPH and BTEX.
- Groundwater samples were collected from RMW-4(O) and RMW-8(O) and analyzed for dissolved metals and PAHs, and RMW-20 was analyzed for dissolved metals only.

6 CONCEPTUAL SITE MODEL

The CSM is presented for each subarea in this section. For each subarea, the CSM describes the following components:

- COCs and historical sources
- Nature and extent of contamination
- Contaminant fate and transport
- Environmental exposure pathways and receptors
- Subarea specific conclusions brought forward to FS

Chemicals exceeding the screening levels selected in Section 4.2 (derived from the most conservative exposure scenario), were identified as COCs and used to characterize the nature and extent of contamination for each subarea. These data are presented in Tables 6-1 through 6-12 and Figures 6-1 through 6-9 at the end of this section. Tables are organized by subarea, media, and then constituent, while figures present data Site-wide by constituent. The RI data and select pre-RI data for COCs or indicator parameters (i.e., naphthalene as an indicator for non-carcinogenic PAHs and cPAHs for carcinogenic PAHs) are presented in Tables 6-1 through 6-12 and Figures 6-1 through 6-9. Pre-RI data are either provided in Appendix E or referenced in the original pre-RI documents for tabulation of those data.

The data tables include sampling date to differentiate data collected during pre-RI investigations versus data collected for the current RI under AO No. DE 3441. Data collected prior to 2007 are considered pre-RI. For soil and soil vapor chemistry data tables, results are ordered alphabetically by sample identification number, not by date. For the groundwater chemistry data tables, data collected over time from a well are grouped together. The first page (called Table Notes) in the series of tables for this section provides general notes and definitions used in all of the Section 6 tables (so notes are not repeated on each table).

The soil chemistry data tables in this section present data that are considered representative of current Site conditions based on available information. Samples representing soils that were excavated do not represent current Site conditions and, therefore, are not presented in the soil chemistry data tables. Pre-RI data from monitoring wells that are no longer accessible are presented in the groundwater chemistry tables. Some data that fall within the

Landfill Perimeter subarea overlap with the C Street Properties and Hilton Avenue Properties subareas and, accordingly, are shown in figures and tables pertaining to the respective subarea (i.e., some data are presented more than once).

In addition, chemicals with an exceedance frequency greater than 10% and with maximum detected concentrations exceeding two times the most stringent screening level were selected for mapping purposes. Supporting detailed statistical information as well as constituent specific maps are presented in Appendix E.

6.1 Landfill and Perimeter Subarea

6.1.1 Contaminants of Concern and Sources

Landfill refuse and associated metals, petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), PAHs, VOCs, benzene, and SVOCs in groundwater and landfill gas are the COCs for the Landfill and Perimeter subarea. The extent of landfill refuse has been delineated based on historical information and extensive test pitting and borings. The landfill perimeter includes landfill associated metals in groundwater and landfill gas (e.g., methane) in areas adjacent to refuse. Section 2.1.2 provides a description of the historical landfill use in this subarea. The source of landfill associated impacts is the use of this area between 1965 and 1974 for operations as a disposal site for wood waste and other material from the GP mill and as the main disposal site for municipal refuse in the City.

6.1.2 Nature and Extent of Contamination

This section presents the results of data collection activities and refuse observations within the Landfill and Perimeter subarea to delineate the nature and extent of COCs for refuse, groundwater, and landfill associated gas. Pre-RI and RI data are presented and compared to Site-specific screening levels developed in Section 4. The references for pre-RI information and data collection are provided below and a full reference is included in Section 8.

Soil, groundwater, gas, and refuse within the landfill boundary are assumed to pose a threat to human health or the environment through direct contact or release to the environment.

6.1.2.1 Landfill Refuse Nature and Extent

The extent of landfill refuse has been delineated based on historical information and the completion of numerous test pits and borings. An extensive design investigation was performed in 1997 to supplement information for construction of the 250,000-square-foot warehouse building over the central portion of the landfill. The warehouse project was conducted as an independent action by GP, with technical assistance provided by Ecology under the VCP. In addition to the warehouse construction, the landfill area was graded and capped, and a methane control system was installed beneath the warehouse.

Forty-five test pits and ten borings were completed in 1997 to delineate the extent of landfill refuse. Observations from these test pits and borings confirmed the limits of refuse and are shown in Figure 6-1.

Generalized cross-sections using data from the test pits and borings are presented in Figures 3-2a and 3-2b showing the thickness of soil cover and refuse across the landfill area. Observations of the soil cover indicated wood waste (logs up to 2 feet to thin layers of wood chips, dust, and fibers) is present in significant quantities, presumably from GP's use of this area for log storage after 1975. Within the main landfill area, the thickness of refuse and overlying wood waste averaged 23 feet, with the thickest area measured at 34 feet. These thicknesses correspond to the bottom of the landfill refuse at an elevation of 0 feet mean sea level along Roeder Avenue to an elevation of -10 feet mean sea level along the western boundary.

Historical information estimated that wastes disposed within the landfill were composed of approximately 50% municipal refuse and 50% pulp and wood waste placed by GP. Investigations revealed that the materials within the landfill consist of both material types and the stratigraphy of materials was heterogeneous. There has been no indication that significant quantities of hazardous materials are present within the landfill (RETEC 1997). The 1997 Design Report indicated that the landfill was previously evaluated by both USEPA and the Whatcom County Health Department, and both concluded that the landfill did not appear to have received hazardous wastes for disposal.

6.1.2.2 Landfill Gas Nature and Extent

Landfill associated gas (e.g., methane) is present within the landfill refuse boundary. As part of the warehouse design investigation and construction, gas within the landfill was tested and a gas control system was installed beneath the warehouse. The extent of landfill gas has been delineated to include the entire landfill footprint and areas just adjacent to the landfill boundary within the landfill perimeter, as shown in Figure 6-2. Monitoring data for landfill gas (principally methane) are summarized in Tables 6-2a to 6-2d. Landfill gas was monitored as part of the former Roeder Avenue Landfill Site RI/FS process, the Central Waterfront RI, and supplemental RI activities. Monitoring consisted of using a combustible gas monitor (%LEL) and PID. The presence of methane is indicated by an elevated reading (greater than 5%) on the lower explosive limit (LEL) meter without a corresponding high reading on the PID. If elevated readings occur on both the LEL meter and PID, a hydrocarbon or solvent vapor may be present. Although the warehouse was the only existing structure monitored for landfill gas, it is assumed that any structure (existing or to be constructed at a later date) within the landfill footprint has the potential to accumulate landfill gas.

Monitoring measurements for oxygen, carbon monoxide, and hydrogen sulfide are also provided in Tables 6-2a to 6-2d. Methane accumulation will typically displace oxygen, resulting in readings well below atmospheric values while carbon monoxide and hydrogen sulfide can both be produced in landfills as part of the refuse decomposition process. Results of landfill gas monitoring showed increased levels of hydrogen sulfide and carbon monoxide, as well as lower levels of oxygen in those wells with elevated methane measurements. These findings are consistent with a landfill source for the detected methane.

Landfill gas monitoring results have shown a declining concentration over time; this trend was confirmed during supplemental RI activities along Roeder Avenue. The results of landfill gas monitoring are shown in Figure 6-2. The landfill perimeter shows the area where landfill gas (methane) was detected above 10% LEL.

6.1.2.3 Landfill Groundwater Nature and Extent

Groundwater COCs for the Landfill and Perimeter subarea include metals, petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), PAHs, VOCs (including benzene), and

SVOCs (including bis(2-ethylhexyl)phthalate [BEHP]). Pre-RI and RI groundwater data are compiled in Tables 6-3a to 6-3c and shown in Figure 6-3. The extent of groundwater contamination is summarized in Figures 6-4 to 6-7.

Groundwater Within Landfill Footprint

Groundwater sampling within the landfill footprint was performed as part of the Roeder Avenue Landfill warehouse design investigation and RI/FS in 1998 and 1999, at select wells during the RI and data gap completion sampling in 2008 and 2013, respectively, and at one well (RMW-5) during the Compliance Monitoring sampling in 2016. A total of 12 monitoring wells were sampling in 1998 and 1999 within the landfill footprint. The 1999 groundwater sampling was performed for four quarters, and results are presented in Table 6-3a.

Constituents detected above screening levels within the landfill included total and/or dissolved metals (arsenic, chromium, copper, lead, mercury, nickel, zinc, and manganese[6]), TPH-G, TPH-D, TPH-MO, PAHs, limited SVOCs (including BEHP), and VOCs (including benzene). Of these constituents exceeding screening levels, chromium was consistently detected at concentrations greater than 10 times the screening level and was prevalent throughout the landfill boundary.

Pathways for groundwater to be released to the environment are evaluated within the Landfill and Perimeter subarea as for landfill gas distribution. Based on current measurements, ASB water levels and groundwater elevations in adjacent areas of the landfill are within a half-foot of each other (indicating a relatively flat groundwater gradient and area of stagnation under current conditions). In addition, water currently managed in the ASB is not considered surface water because the ASB is a treatment lagoon operating under a NPDES permit. However, future conditions for FS evaluation assume the ASB will be converted into a marina and will be constructed consistent with the Port cleanup and development plans, as discussed in Section 3.3.3.2. Under this likely future scenario,

[6] Manganese analysis was performed as part of the RI as a conventional parameter to evaluate natural attenuation because, at higher concentrations, it can be indicative of anaerobic conditions. Manganese is not a priority pollutant metal, but since a screening level was developed for this parameter, exceedances are highlighted in tables throughout this Section 6. Manganese is not included for mapping purposes in Figure 6-7 because it is considered a conventional parameter.

groundwater flow is expected to be toward the marina, and therefore exposure to surface water receptors must be considered. Figure 6-3 shows the wells located within the landfill footprint and those exceeding screening levels.

Current groundwater quality was tested in 2013 and in July 2016 at RMW-5, immediately adjacent to the ASB and screened in the landfill refuse. RMW-5 showed dissolved metal concentrations exceeding screening levels for arsenic, mercury, nickel, chromium, copper, lead, and zinc. Impacted groundwater at RMW-5 is assumed to be a potential source of contamination to adjacent sediment and surface water following the future conversion of the ASB to a marina.

On the northern end of the landfill footprint, empirical data collected at RMW-3D, a nearshore monitoring well, have not exceeded screening levels since 1999[7]; however, there is not a paired shallow well to provide information regarding shallow groundwater conditions at this location. Groundwater at the closest shallow well to RMW-3D following the northern flow path (RMW-2[8]) exceeded screening levels for metals (chromium, copper, lead, and mercury). Based on the data from RMW-2, it is assumed that shallow groundwater near the shoreline and within the landfill footprint is a potential source of contamination to adjacent sediment and surface water, which is evaluated in the FS.

RMW-2D and RMW-3D represent deep groundwater that flows underneath the clay berm. Based on current data at these wells, COC concentrations at these wells are not exceeding screening levels and, therefore, deep groundwater contamination from the landfill appears to attenuate over time and with depth. Based on empirical data, the deep groundwater-to-sediment and surface water pathway for groundwater within the landfill footprint is not considered complete.

Groundwater Within Landfill Perimeter

Groundwater sampling within the landfill perimeter was performed as part of the Roeder Avenue Landfill warehouse design investigation and RI/FS in 1998 and 1999, during

[7] RMW-3D was sampled five times in 1999 and once in 2007, but in 1999 only exceeded one time for zinc and two times for BEHP. After these exceedances, concentrations have been non-detect.
[8] RMW-2 has been decommissioned and was last sampled in 1999.

groundwater monitoring events for the former Chevron facility in 2002 and 2003, and during the RI sampling in 2007 and 2008. Groundwater sampling results for the southern landfill perimeter area are presented in Table 6-3b and results for the northern landfill perimeter area are presented in Table 6-3c. Figure 6-3 shows the wells located within the landfill perimeter and those exceeding screening levels.

A total of eight monitoring wells were sampled in the southern landfill perimeter area, as shown in Figure 6-3. Monitoring well RMW-7, located within the C Street Properties subarea, is also shown in this figure because it informs our understanding of the nature and extent of landfill-related dissolved metals (Table 6-5a contains tabulated data for this well). Groundwater sampling was performed at different timeframes (from 1999 to 2008) for different wells; exceedances are based on the most recent sampling event for a given well. Metals, TPH-D, and BEHP historically exceeded screening levels, while the most recent sampling results indicate only select metals exceed screening levels, including arsenic, chromium, copper, lead, mercury, nickel, zinc, and manganese. Of these metals, chromium in particular does not exceed screening levels within the landfill perimeter except for a 1999 groundwater sample collected at MW-8(B). This is notable because chromium impacts in groundwater appear to be distinctive to the landfill source and not associated with other sources at the Site including historical operations at the C Street Properties subarea.

Four monitoring wells have been sampled in the northern landfill perimeter area as shown in Figure 6-3. Three of these wells were sampled during RI events in 2007 and 2008 and one well, MW-6(O), was sampled as part of the former Olivine Uplands area investigations in 2001. All four monitoring wells within the northern landfill perimeter area showed groundwater concentrations below screening levels. RMW-20, located in the landfill perimeter near the northern and western shorelines, is representative of the shallow groundwater flow around the clay berm. Contaminant concentrations at this well do not exceed screening levels, indicating contaminant attenuation in shallow groundwater with distance from the landfill. Based on empirical data, the shallow groundwater-to-sediment and surface water pathway for groundwater flowing from the landfill and around the clay berm is not considered complete.

6.1.3 Contaminant Fate and Transport

The potential for release to the environment has been evaluated within the landfill and perimeter. Landfill refuse itself is not considered mobile; therefore, potential transport of landfill-related impacts is limited to landfill gas and groundwater migration. Recent landfill gas monitoring has indicated that landfill impacts are limited to areas within the landfill footprint and perimeter. Groundwater contamination above screening levels is present throughout the landfill footprint, adjacent to the ASB and in wells located within the southern landfill perimeter; however, as previously discussed in Section 3.3.3.2, ASB water levels and groundwater elevations in adjacent areas of the landfill are within a half-foot of each other, indicating a relatively flat groundwater gradient and area of stagnation under current conditions. Under the future scenario of the ASB being converted into a marina, groundwater flow is expected to be toward the marina, and contaminated groundwater at RMW-5 and RMW-2 may impact adjacent sediment and surface water.

In the southern landfill perimeter, landfill-associated dissolved metals (in particular chromium) appear to attenuate with distance from the landfill but are co-mingled with metals from historical operations within the C Street Properties subarea and exceed screening levels at RMW-7 for arsenic and copper. In the northern portion of the landfill, groundwater at RMW-2 exceeded screening levels for chromium, copper, lead, and mercury. Considering that under future conditions groundwater flow is expected to be toward the marina, the landfill groundwater-to-sediment/surface water pathway is considered complete, and potential exposure risk due to metals in groundwater are addressed in the FS.

6.1.4 Exposure Pathways and Receptors

Landfill refuse and associated contamination are present at concentrations above the Site-specific screening levels. Empirical data show that the groundwater to surface water/sediment pathway is considered complete for the northern and southern portions of this subarea. Assuming the full range of potential future land uses, and assuming no remedial action or protective control is in place, the current and future potentially complete pathways and receptors for the Landfill footprint and Perimeter subarea include the following:

- Workers or patrons contacting refuse and/or inhaling impacted dust
- Workers directly contacting refuse (dermal contact, incidental ingestion) and/or inhaling impacted dust during excavation or other construction-related activities
- Workers and patrons inhaling landfill associated gas in areas where gas accumulation is a potential (e.g., existing and future buildings)
- Workers contacting contaminated groundwater during excavation or other construction-related activities

Under current conditions, ASB water levels and groundwater elevations in adjacent areas of the landfill are within a half-foot of each other, indicating a relatively flat groundwater gradient and area of stagnation. However, the FS evaluates future conditions of the ASB as a marina and assumes contaminated groundwater at RMW-2, RMW-5, and RMW-7 may impact adjacent sediment and surface water and, therefore, associated exposure to receptors are considered.

6.1.5 Remedial Investigation Conclusions for Landfill and Perimeter Subarea

Contamination within the landfill exceeds Site-specific screening levels for the following chemicals: metals, petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), PAHs, VOCs, benzene, and SVOCs. Landfill soil and refuse within the landfill boundary are assumed to pose a threat to human health or the environment through direct contact. Landfill gas distribution has been delineated and is limited to the landfill perimeter. Landfill impacts are a source of contamination to groundwater outside of the Landfill footprint, particularly in the northern and southern landfill perimeters. Landfill-associated dissolved metals (in particular chromium) in groundwater appear to co-mingle with metals from historical operations within the C Street Properties subarea with the potential of migrating from the vicinity of the shoreline to surface water. Therefore, the FS evaluates remedies to protect the groundwater to surface water and sediment pathways. In addition, the FS evaluates the potential for contaminant transport in groundwater to the ASB when future conditions assume surface water receptors consistent with the marina development.

An evaluation of remedial alternatives for landfill refuse and landfill gas within the landfill perimeter is developed in the FS.

6.2 C Street Properties Subarea

6.2.1 Contaminants of Concern and Sources

Petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), benzene, PAHs, metals, and VOCs are the COCs for the C Street Properties subarea. Section 2.1.2 provides a description of the historical operations in this subarea. The sources of petroleum hydrocarbons and PAHs are historical releases from both the former Chevron Terminal and the Colony Wharf properties, located in the western and eastern portions of this subarea, including along the southern shoreline. In addition, historical releases from the latter property are sources of metals and some PAHs.

The former Chevron Terminal area was operated as a bulk fuel terminal from approximately 1913 until the late 1980s. This facility included two tank farms (north and south yards), a marine vessel loading dock with associated piping, three tanker truck loading racks (one in the north yard and two in the south yard), a rail loading rack (south yard), product storage warehouse and office (south yard), and facility piping and stormwater management features. Based on these historical operations and extensive and numerous investigations, petroleum hydrocarbons and multiple associated constituents have been identified in soil, soil gas, groundwater, sediment porewater, and sediment, and the extent of contamination has been delineated within the former Chevron Terminal area and adjacent southwest shoreline. In addition, cleanup actions have been performed in portions of the property to control hydrocarbons from spreading near the shoreline area and to prevent recontamination by upland impacts and further erosion of the shoreline.

The Colony Wharf property has been used for a variety of industrial activities since the early 1900s. Historical land uses include sales of building products (coal, lime, cement, plaster, brick, and tile), a steel casting company, a foundry operations, a truck garage, manufacture of cement products, boat repair and maintenance, a machine shop and welding, fish and seafood distribution, and electrical equipment manufacture, sales, and repair. Two USTs (used for gasoline storage and fueling) were used at the property within the Maple Street right-of-way between approximately 1946 and 1981 and subsequently removed in 1997 and 2003; the sources of petroleum and benzene were assumed to be associated with these former USTs and possibly in comingled contamination from the adjacent former Chevron site. The source of metals (lead, arsenic, zinc, and copper) in soils and shoreline sediments may be associated with the portion of the property that was used for construction of marina-related equipment, boat wash, and maintenance from 1985 to 2000, and with the former foundry.

6.2.2 Nature and Extent of Contamination

This section presents the results of data collection activities within the C Street Properties subarea to delineate the nature and extent of COCs for soil, groundwater, sediment porewater, soil gas, sediment,[9] and NAPL. Pre-RI and RI data are presented and compared to Site-specific screening levels developed in Section 4. Appendix E contains Pre-RI data for constituents other than COCs for the C Street Properties subarea. In addition, the source references for Pre-RI data are provided below and a full reference is provided in Section 12.

6.2.2.1 Soil Nature and Extent

Soil COCs for the C Street Properties subarea include petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), VOCs (including benzene), PAHs, and metals (including arsenic, cadmium, copper, lead, mercury, nickel, and zinc). Numerous previous investigations have been performed within the C Street Properties subarea. These investigations focused on identifying the nature and extent of COCs for two separate properties as described in Section 6.2.1: the former Chevron Terminal and the Colony Wharf. Pre-RI soil data are extensive for both properties. Some of the Pre-RI data were not available in electronic format and source documents are referenced when a discussion of previous soil data is presented. Available pre-RI and RI soil data are compiled in Table 6-4 and summarized in Figures 6-4 to 6-7.

Environmental investigations at the former Chevron bulk fuel terminal and Colony Wharf property (referred to collectively as the C Street Properties subarea) have been conducted since the mid-1980s. Focused RI sampling during 2007 and 2008 was performed to fill data gaps to delineate the lateral and vertical extent of contamination. RI sampling included 15 surface soil sample stations throughout the C Street Properties subarea and 12 subsurface soil borings as shown in Figures 6-8a and 6-8b.

[9] Sediment sampling was performed as part of the Whatcom Waterway RI; however, the data are considered in this RI to evaluate potential offshore migration of contaminants from the Site.

Supplemental RI soil sampling in 2012 and 2013 included test pits and borings (including intertidal borings) sampling to support interim action design and completion, and geotechnical borings to support design of the Whatcom Waterway cleanup. Analytical results are presented in Table 6-4 and also in detail in Appendix A.

The results of recent surface (0 to 1 foot bgs) soil sampling indicated metals and PAHs exceeded Site-specific screening levels (this excludes data from 1990 through 1995). Metals exceedances included arsenic, copper, lead, mercury, and zinc, with at least one metal exceedance in 13 of 15 surface soil samples. cPAHs exceeded the screening level at three stations (CWSS-15, CWSB-1, and CWSB-2). Non-carcinogenic PAHs and petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO) were also tested and all recent results were below screening levels in surface soil.[10]

Subsurface soil impacts generally encompass most of the area of the former Chevron bulk fuel terminal and former UST areas. Petroleum hydrocarbon contamination generally extends from the west shoreline to Maple Street (Figures 6-4 and 6-5). Exceedances for TPH-G averaged 50 times the screening level, and TPH-D and TPH-MO exceeded the screening levels by a factor of approximately 4. The exceedance of benzene screening levels occurred specifically in the areas between the former Chevron North and South Tank Yards (in proximity to the west shoreline) and within the former coal storage and boat maintenance area. Subsurface soils at only one station (CWSB-5) exceeded the screening level for PAHs. Naphthalene was found to exceed the screening level in three stations: MW-8A(C), CWSB-11, and CWSB-12. Figure 6-6 shows total cPAH and naphthalene exceedances of screening levels in soils regardless of depth. Screening level exceedances of metals in subsurface soils occurred not only in the former Chevron terminal area, but also throughout the shoreline and eastern portions of the C Street Properties subarea, where historical metal refab and wood shop, boat storage, maintenance, wash areas, and former foundry operations were conducted.

[10] Separate discussions of nature and extent of contamination in surface and subsurface soils are provided because different migration and exposure pathways, as well as remedial technologies, may apply to soil at different depths. However, the standard point of compliance for soil under MTCA is 15 feet bgs.

6.2.2.2 Groundwater and Porewater Nature and Extent

Groundwater COCs for the C Street Properties subarea include total petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), benzene, PAHs, and metals (including arsenic, cadmium, copper, chromium, lead, mercury, nickel, zinc, and manganese). Pre-RI and RI groundwater data are compiled in Tables 6-5 through 6-7 and summarized in Figures 6-4 through 6-7.

RI sampling aided in filling the data gap on current conditions of shallow and deep groundwater quality. An additional deep monitoring well was installed and sampled (CWMW-2) in the center of the C Street Properties subarea to supplement existing deeper groundwater data along the perimeter of the subarea, including data from the southern portion of the landfill perimeter.[11] Supplemental sampling was performed during the RI/FS in July 2012 (Addendum No. 3) to provide empirical data along a transect perpendicular to the southern shoreline of the C Street Properties subarea along Whatcom Waterway regarding potential migration of petroleum-related groundwater impacts to aquatic receptors. Additional groundwater sampling was also conducted in November 2013 (Addendum No. 6) at locations MW-1(B) and RMW-7 to provide current dissolved metals in the nearshore areas of this subarea.

Groundwater results in Table 6-5a and Figures 6-4 through 6-6 indicate that total petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), benzene, and PAHs were present in most upland groundwater samples at concentrations above the groundwater screening levels. Total petroleum hydrocarbons and associated groundwater impacts extend from the southern portion of the former Chevron North Tank Yard to the southern shoreline of this subarea and from the west shoreline to Maple Street. TPH-D results indicate exceedances not only in the area described above, but also in the majority of the former Chevron North Tank Yard.[12] PAH exceedances (particularly naphthalene) in groundwater are centered on the south Maple Street right-of-way (monitoring wells MW-9B, MW-14B, MW-50C, MW-51C, and

[11] Deep groundwater wells are designated by a 'D' in the well identification in Table 6-5b (except for CWMW-2) and are screened from approximately 30 to 40 feet bgs, whereas the majority of wells at the Site are screened at depths shallower than 20 feet bgs.

[12] The nature and extent of TPH-D in groundwater presented in Figure 6-5 is conservative, and likely exaggerated, since groundwater samples collected prior to 2012 were not analyzed using silica gel cleanup. Therefore, these results include interference from unresolved complex matter as described in Central Waterfront RI/FS Work Plan Addendum No. 5 (Anchor QEA 2012d).

MW-74C), most probably associated with the gasoline storage and fueling operations at the two former USTs.

Deep groundwater monitoring results at CWMW-2 (located in the center of the C Street Properties subarea) showed exceedances for TPH-G and TPH-D, total copper, and one SVOC (BEHP) at a depth of 30 to 40 feet bgs in 2007/2008 (Table 6-5b). This well was sampled again in 2012 for TPHs and BTEX but only exceeded the screening level for TPH-D. Historical groundwater results for the other deep wells showed exceedances for TPH-D in the eastern part of the C Street Properties subarea (RMW-11D and RMW-12D) and metals immediately south of the landfill (RMW-6D). It is important to note that there was only one exceedance of screening levels at RMW-7D (for BEHP in 1999); RMW-7D is located downgradient of RMW-6D and is representative of groundwater quality that eventually discharges into Whatcom Waterway. Similarly, there were no exceedances of screening levels at RMW-13D, located in the southeast corner of the subarea and immediately adjacent to Whatcom Waterway.

As described in Section 2.2.3, groundwater, seep, and porewater sampling was performed in July 2012 along the southern shoreline of the C Street Properties subarea along Whatcom Waterway. Sampling was intended to specifically provide empirical data regarding potential migration of petroleum-associated groundwater impacts to porewater, and subsequently sediment and surface water (Appendix A). Groundwater was sampled from monitoring wells CWMW-18, CWMW-2, CWMW-65C, and MW-1(B). Groundwater seeps were sampled at two locations (CW-SP-01 and CW-SP-02; Table 6-6). Porewater samples were collected from six locations along the shoreline, immediately downgradient of the bulkheads, dock, and other shoreline features. Groundwater results are presented in Tables 6-5a and 6-5b, seep sample results are presented in Table 6-6, and porewater results are presented in Table 6-7. It is also helpful to refer to Appendix A (Figures 1 and 2), which are spatial presentations of the TPH-G/benzene data and TPH-D/TPH-MO data, respectively. Groundwater samples collected during this event exceeded screening levels for TPH-G, TPH-D, and benzene at MW-1B. Neither seep sample exceeded screening levels for TPH; however, one porewater sample (CW-PW-05) exceeded screening levels for TPH-MO and benzene. Based on the empirical data, the groundwater to surface water/sediments pathway is considered complete and is evaluated in the FS.

Additional groundwater, seep, and porewater samples were collected in July 2016 along the southern and western shorelines of the C Street Properties subarea adjacent to Whatcom Waterway. Sampling was performed along specific transects to assess potential migration of contaminants along groundwater flow paths into downgradient seeps and porewater. Transects targeted select nearshore areas of the C Street Properties subarea and adjacent to containment wall structures that were installed as stabilization and source control measures for the Phase 1 Whatcom Waterway cleanup. The July 2016 compliance monitoring was performed in accordance with RI/FS Work Plan Addendum No. 7 (Anchor QEA 2016b).

Two shallow monitoring wells (CWF-CW-1 and CWF-CW-2) were installed along the west and east ends of the aforementioned containment wall structures, respectively. Compliance groundwater monitoring was performed at these two new Site monitoring wells (CWF-CW-1 and CWF-CW-2) and at two existing upgradient monitoring wells (RMW-5, located in the Landfill subarea, and RMW-7, located along the C Street subarea's northwestern shoreline) during low tide conditions from July 20–23, 2016. Porewater was collected at three locations along the southern (CWF-PW-1) and western shorelines (CWF-PW-2 and CWF-PW-3) of the C Street Properties subarea using passive nylon mesh diffusion samplers. The passive samplers were deployed on July 6, 2016, and retrieved on July 19, 2016. In addition, one seep sample was collected from the eastern end of the Replacement Maple Street Bulkhead on July 20, 2016.

Groundwater results from the July 2016 compliance monitoring event are included in Tables 6-3a and 6-5a, seep sample results are included in Table 6-6, and porewater results are included in Table 6-7. Groundwater samples collected during this event exceeded groundwater screening levels for total and dissolved copper at monitoring well CWF-CW-2, along the southeastern shoreline (at the east end of the containment wall). Groundwater results for upgradient well RMW-5 are presented in Section 6.1.2.3. Seep concentrations at CWF-WS-1 exceeded groundwater screening levels for total and dissolved copper. Porewater concentrations exceeded screening levels for dissolved nickel at CWF-PW-1 and total cPAHs at CWF-PW-3. These results indicate that elevated copper levels are present in shallow groundwater in a localized area along the Site's southern shoreline (i.e., at monitoring well CWF-CW-2 and at seep location CWF-WS-1). In addition, elevated PAH levels are present in porewater at location CWF-PW-3. Results for these shoreline groundwater transects are also presented in Appendix H.

In November 2016, additional groundwater and porewater samples were collected in compliance with RI/FS Work Plan Addendum No. 8 (Anchor QEA 2016c) to address Ecology's concerns regarding the quality of nearshore groundwater and porewater along previously evaluated groundwater transects at the Site's southeastern shoreline and to evaluate the potential for an upland source of PAHs along another previously evaluated groundwater transect at the Site's southwestern shoreline. Groundwater sampling was performed at two existing (CWF-CW-2 and RMW-7) Site monitoring wells during low tide conditions on November 14, 2016. In addition, porewater was collected at one location (CWF-PW-4) immediately offshore of CWF-CW-2 using a drive-point piezometer.

Groundwater results from the November 2016 compliance monitoring event are included in Table 6-5a and porewater results are included in Table 6-7. Groundwater concentrations from the November 2016 monitoring event did not exceed groundwater screening levels. Porewater concentrations did not exceed screening levels, though the reporting limits for several non-detects (e.g., for dissolved copper and mercury) are slightly above screening levels. These results suggest that there is no clear upland source of PAHs in groundwater along the Site's southwestern shoreline (i.e., in the vicinity of porewater location CWF-PW-3, where elevated PAH levels were previously detected), and that elevated dissolved copper concentrations in shallow groundwater along the southern shoreline of the Site may be a source of copper contamination to Whatcom Waterway surface water and sediment. Results for these shoreline groundwater transects are also presented in Appendix H.

Groundwater impacted by metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, and manganese) historically extended throughout the western portion of this subarea and appeared to be contiguous with the landfill perimeter (Figure 6-7). Metal exceedances were also present in monitoring wells MW-4B and RMW-12D, where boat storage and maintenance facilities were formerly located.

When considering the nature and extent of individual metals in groundwater (Appendix E, Figures 9b, 10b, 11b, 12b, 13b, 14b, 15b, and 16b), distinct sources of select metals found in the landfill perimeter and C Street Properties subarea are apparent. For example, exceedances of the lead screening level in groundwater occur in the landfill and perimeter, as well as the southern shoreline of the C Street Properties subarea (Appendix E, Figure 13b), separated by an area in the west center of the C Street Properties subarea with lead concentrations below screening levels. Nickel and zinc concentrations in groundwater (Appendix E, Figure 15b and 16b, respectively) are highest along the southern portion of the C Street Properties subarea, whereas, lower concentration exceedances of these metals in groundwater occur along the landfill perimeter. Chromium (Appendix E, Figure 11b) appears to be associated primarily with the landfill, and attenuating with distance from the landfill, especially when taking into account time series data for monitoring wells MW-63C, MW-64C, and MW-12A(C), which did not exceed the chromium screening level during the most recent sampling events available (Table 6-5a).[13] Arsenic and copper exceedances of groundwater screening levels are prevalent throughout much of the C Street Properties subarea, with no distinct differentiation of sources (Appendix E, Figures 9b and 12b, respectively). A few localized exceedances of the cadmium screening level for groundwater have also been observed in the C Street Properties subarea (Appendix E, Figure 10b), with only one location (MW-51(C)) exceeding the screening level during the most recent sampling events available (Table 6-5a).

In the northern C Street Properties subarea, dissolved metals (in particular chromium and arsenic) in groundwater appear to be co-mingled with metals that have migrated from the landfill footprint and southern landfill perimeter. Therefore, the landfill to C Street Properties subarea groundwater-to-sediment/surface water pathway is considered complete and is addressed in the FS.

6.2.2.3 Sediment Nature and Extent

Surface sediment samples were collected offshore of the Site (within Whatcom Waterway) during Whatcom Waterway RI sampling events in 2002 and 2004. Sample locations AN-SS-36, AN-SS-37, CWB-1, CWB-2, and CWB-3 are shown in Figures 6-6 and 6-7. Sediment sampling results showed no exceedances of sediment quality standards for PAHs,

[13] It is important to note that groundwater sampling prior to 2007 was performed using bailers, which may have resulted in higher turbidity and associated total metals concentrations than low flow sampling methods in use by 2007/2008.

indicating that sediments are not impacted by PAHs, and providing empirical data that the groundwater-to-sediment pathway is not complete for PAHs at the C Street Properties subarea.

One sediment sampling station (CWB-3) was found to exceed screening levels of 390 mg/kg dry weight and 410 mg/kg dry weight for copper and zinc, respectively. TBT in sediment porewater also exceeded the SCO and the DMMP comparison value of 0.05 μg/L. The TBT concentration did not exceed the bioaccumulation trigger value of 0.15 μg/L.

Sediment bioassay results indicated exceedance of biological criteria at two sediment sampling locations, CWB-1 and CWB-3. Toxicity observed at CWB-3 corresponded with sediment quality standards exceedances of metals as described in the previous paragraph. However, no corresponding chemical exceedances in sediment were measured at CWB-1 (but sediments were not analyzed for total petroleum hydrocarbons). These sediments were removed as part of the Phase 1 Whatcom Waterway cleanup, completed in mid-2016 (see Section 2.4.1).

6.2.2.4 Soil Gas Nature and Extent

Petroleum hydrocarbons are the soil gas COCs for the C Street Properties subarea. RI soil gas data are summarized in Figure 6-9. A soil gas investigation was completed in 2007 in the western portion of the C Street Properties subarea to determine soil gas concentrations within the areas of historical LNAPL occurrence. It was established that the areas of historical LNAPL occurrence generally coincide with historical site features such as tanks, pipelines, loading racks, and documented petroleum releases to soil.

Soil gas samples were collected in 2007 from ten locations at 5 feet bgs; sample locations are illustrated in Figure 6-9. The suite of analyses included C5–C8 aliphatic, C9–C12 aliphatic, and C9–C10 aromatic hydrocarbons, 1,3-butadiene, BTEX, methyl-tertiary butyl ether (MTBE), naphthalene, and 2-methylnaphthalene. Eight constituents (1,3-butadiene, benzene, ethylbenzene, naphthalene, m,p-xylene, C5–C8 aliphatic hydrocarbons, C9–C12 aliphatic hydrocarbons, and C9–C12 aromatic hydrocarbons) were detected at concentrations above screening levels (Table 6-8).

The aliphatic hydrocarbon ranges (C5–C8 and C9–C12) exceeded the screening levels at all sample locations. In addition, soil gas concentrations of the C9–C12 aromatic hydrocarbon range, 1,3-butadiene, naphthalene, benzene, ethylbenzene, and m,p-xylene exceeded the screening levels at least once: MTBE and 2-methylnapththalene were not detected in vadose zone soil gases. O-xylene was detected at only one location (CWSB-8) below the screening level. Six locations exhibited detectable concentrations of 1,3-butadiene ranging from 40 to 73 micrograms per cubic meter ($\mu g/m^3$), approximately three orders of magnitude greater than the screening level of 0.08 $\mu g/m^3$.

Benzene was present in soil gas at detectable concentrations greater than the screening level of 0.324 $\mu g/m^3$ at all locations sampled; benzene concentrations ranged from 27 to 5,300 $\mu g/m^3$. Ethylbenzene was detected at concentrations above the screening level of 458 $\mu g/m^3$ at three locations. m,p-xylene was detected above the screening level at two locations and below the screening level at six locations; m,p-xylene concentrations ranged from 6.3 to 170 $\mu g/m^3$. Toluene was present in the soil gas at detectable concentrations less than soil screening levels at all locations. C9–C12 aromatic hydrocarbons were detected in five of the ten locations and their concentrations ranged from 51 to 1,200 $\mu g/m^3$, all greater than the screening level of 1.38 $\mu g/m^3$.

Locations CWSB-11 and CWSB-12 exhibited the highest concentrations of hydrocarbon fractions and benzene. Sample location CWSB-11 is adjacent to the former south yard truck loading rack and location CWSB-12 is in the proximity of the former USTs. Locations CWMW-1 and CWSB-7 exhibited the greatest concentrations of ethylbenzene and 1,3-butadiene, respectively. Free phase LNAPL was observed historically in adjacent monitoring wells; however, measurable free product is no longer observed at the Site. Although the lateral extent of hydrocarbon-impacted soil gas is not bound by fractionation data points in Figure 6-9, a PID was used in conjunction with landfill gas monitoring as described in Section 6.1.2.2 to screen for hydrocarbon or solvent vapor interferences to methane measurements. VOC concentrations measured via PID shown in Tables 6-2a through 6-2d are generally very low with the exception of sample locations within the western portion of the C Street Properties subarea and area of former LNAPL occurrence. Samples from locations immediately adjacent that form a semi-circle around this area had PID readings of 0 parts per million VOCs (MW-13(B), MW-10(B), MW-43(C), and

MW-53(C), and RMW-7 in Table 6-2b), effectively defining the lateral extent of hydrocarbons in soil gas.

6.2.2.5 NAPL Nature and Extent

Based on historical site use and TPH analysis, the Site is impacted with a weathered mix of gasoline and diesel. Measurable LNAPL thicknesses were observed historically in several monitoring wells within the C Street Properties subarea including MW-57(C), MW-67(C), and MW-72(C) during gauging events in 1999 to 2001, with thicknesses ranging from 0.01 to 4.04 feet. Gauging was performed again as part of the RI in 2007 and 2008. During the later events, no measurable LNAPL thickness was observed.

The groundwater table is unconfined in a silty sand lithology. The groundwater elevation is both tidally and seasonally influenced, with variations up to 4 feet. It is believed that the limited volume of LNAPL (apparent during the 1999 to 2001 investigations) has become smeared across the groundwater fluctuation zone, entrapping the LNAPL as residual. Petroleum sheens at the southwest corner of this subarea that were the subject of the 2013 interim action cleanup (Figures 6-4 and 6-5) are believed to have occurred due to failure of the bulkhead, erosion of the shoreline and bank, and subsequent exposure of residual petroleum impacts to surface water based on field observations. However, during the disturbance of soil and buried bulkheads resulting from the interim action removal, residual and/or petroleum impacts were mobilized (Anchor QEA 2013a).

A LNAPL mobility investigation was performed in 2007/2008 and included data collection of site-specific soil, groundwater, and LNAPL parameters to assess LNAPL mobility. During this investigation, the following data were collected for petrophysical testing: organic carbon data, physical properties data, free product mobility, Atterberg limits data, capillary pressure data, particle size analysis, soil borings, and monitoring well gauging data. No fluid samples were collected because free LNAPL was no longer present in any monitoring well. The remaining LNAPL exists only as residual fluid.

Free product mobility was determined by analyzing bulk density, water saturation, and NAPL saturation. The sample was then centrifuged and NAPL and water saturation were recalculated. Both core samples tested had a high starting water saturation of 82% and 72%

(percent of pore volume). After centrifuging, water saturation was reported to be 7% and 4%. In contrast, NAPL saturation was initially low at 10.1% and 12.3%. NAPL saturation after centrifuging was 9.5% and 10.1%, indicating that NAPL in the soil cores is not mobile.

Based on the LNAPL mobility data collection and analysis, this information allows for the development of a site-specific estimate for a residual saturation concentration for soil TPH within the C Street Properties subarea. Residual saturation is the concentration below which the LNAPL (i.e., "free product") is not mobile. Using the site-specific data collection and analysis, this equates to a soil TPH concentration of approximately 1.9 percent, or 19,000 mg/kg residual saturation value. Appendix F provides the rationale, development, data input, and calculation of the residual saturation value of 19,000 mg/kg soil TPH.

No measurable LNAPL thickness has been observed at the Site since 2001. However, areas of the Site with TPH concentrations exceeding the residual saturation concentration of 19,000 mg/kg are evaluated in the FS.

6.2.3 Contaminant Fate and Transport

Historical primary sources of petroleum hydrocarbons, metals, and PAH contamination within the C Street Properties subarea are no longer present at the former Chevron bulk fuel terminal area. Former operations have ceased and have been demolished. Colony Wharf operations have undergone improvements to control sources to soil, groundwater, and adjacent sediment and surface water. Colony Wharf is subject to inspection by the Port and stormwater discharge is managed under an Ecology-issued Boatyard General Permit.

Recent surface soil sampling has indicated that metals and PAH impacts have the potential to enter stormwater drainage; this source is addressed as part of the FS. Subsurface soils and groundwater impacted by TPH-G, TPH-D, BTEX, PAHs, and metals are present in this subarea and have the potential to migrate to the adjacent surface water and sediments; however, seep, porewater, and sediment[14] monitoring has shown limited migration of petroleum hydrocarbons, BTEX, and metals off shore. Both the upland and offshore migration of contamination are addressed in the FS.

[14] Sediment sampling was performed as part of the Whatcom Waterway RI.

6.2.4 Exposure Pathways and Receptors

Surface and subsurface soil, groundwater/porewater, and soil gas are impacted by various COCs at concentrations above the Site-specific screening levels. Assuming the full range of potential future land uses, and assuming no remedial action or protective control is in place, the current and future potentially complete pathways and receptors for the C Street Properties subarea include the following.

6.2.4.1 Soil Exposure Pathway

- Workers or patrons directly contacting contaminated soils and/or inhaling impacted dust or vapors from soil
- Workers directly contacting impacted soils (dermal contact, incidental ingestion) and/or inhaling impacted dust or vapors from soil during excavation or other construction-related activities
- Workers and patrons in buildings inhaling indoor air contaminated (via vapor intrusion) by volatile contaminants originating from soil
- Surface soils runoff to sediments from erosion of surface soils to the stormwater drainage system

6.2.4.2 Groundwater Exposure Pathway

- Workers directly contacting impacted groundwater (dermal contact, incidental ingestion) during excavation or other construction-related activities
- Workers and patrons in buildings inhaling indoor air contaminated (via vapor intrusion) by volatile contaminants originated from shallow groundwater
- Aquatic ecological receptors becoming directly exposed by groundwater migration to surface water and sediment
- Humans consuming aquatic biota contaminated by discharge of groundwater to surface water and sediment

6.2.4.3 Sediment Exposure Pathway

The Site does not include sediment in adjacent Whatcom and I&J Waterways. However, groundwater screening levels applied at the Site protect against sediment recontamination at the Whatcom and I&J Waterways (as described in Section 4.2.1). Sediment exposure pathways include the following:

- Direct exposure for benthic and aquatic organisms becoming directly exposed to surface water or sediment from groundwater migration
- Higher trophic food chain effects associated with the potential bioaccumulation of contaminants
- Humans consuming aquatic biota contaminated by discharge of groundwater to sediment or surface water
- Workers directly contacting impacted sediment (dermal contact) during excavation or other construction-related activities

6.2.5 Remedial Investigation Conclusions for C Street Properties Subarea

Petroleum hydrocarbons (TPH-G, TPH-D, and TPH-MO), benzene, PAHs, and metal concentrations in soils, groundwater, porewater, and soil gas within the C Street Properties subarea exceed Site-specific screening levels. Contaminated sediments in the adjacent Whatcom Waterway were remediated by dredging and capping completed during Phase 1 of the Whatcom Waterway cleanup (see Section 2.4.1). Although soil impacts are a definite source of contamination to groundwater and porewater, recent RI monitoring (i.e., in 2013 and 2016) indicates that groundwater contamination has generally not reached the southern shoreline of this subarea, except for at locations CW-PW-05, where petroleum hydrocarbons exceeded screening levels in porewater (this area was removed during shoreline stabilization completed during Phase 1 of the Whatcom Waterway cleanup); at CWF-WS-1 (a seep location), where copper levels exceeded screening levels in groundwater; and at CWF-CW-2 (a compliance monitoring well), where copper levels exceeded the screening levels in groundwater. Nearshore monitoring wells in this subarea indicate migration of metals from groundwater to adjacent surface water/sediments is a potential pathway that is addressed in the FS.

An evaluation of remedial alternatives for impacted surface and subsurface soils and groundwater at the C Street Properties subarea are developed in the FS. The FS takes into account cleanup for Whatcom Waterway as described in the Whatcom Waterway CD and associated remedial plans.

6.3 Hilton Avenue Properties Subarea

6.3.1 Contaminants of Concern and Sources

Total petroleum hydrocarbons (TPH-G), PAHs, and metals (arsenic and lead) are the COCs for the Hilton Avenue Properties subarea. Section 2.1.2 provides a description of the historical operations in this subarea. The sources of total petroleum hydrocarbons are historical releases from the former Time Oil fuel terminal located in the western area of this subarea. The sources of PAHs and metals are historical releases from the various historical operations and property uses in the eastern portion of this subarea.

The former Time Oil fuel terminal operated from approximately the early 1960s to the mid-1980s. This facility included approximately five aboveground storage tanks, a fuel dispensing area, and associated piping. Limited historical information is available describing the types of product handled. A supplemental RI investigation was performed in November 2013 to delineate the potential impacts; findings of this investigation indicated that petroleum hydrocarbon detections (TPH-G and TPH-D) are limited to within the immediate area of the former fuel terminal footprint.

The first use of the former Olivine Uplands area was sawmill and lumber mill operations by different companies from the 1880s to 1940s and again, from the 1950s to 1960s. Various trucking companies used the southeastern part of the area from 1959 to 1985, including the OMC trucking company who used an underground fuel storage tank. The source of PAHs and metals (other than nickel) in soil may be associated with ash from past on-site burning of materials from the sawmill demolition, fuel storage tank operations, and creosote-treated piles and timber bulkhead along the northern shoreline.

The Olivine processing facility began operations in 1963 and used olivine rock as the primary ore material; nickel is a constituent within olivine ore. The source of nickel in soil is associated with historical processing of olivine mineral and facility demolition and grading.

6.3.2 Nature and Extent of Contamination

This section presents the results of data collection activities within the Hilton Avenue Properties subarea to delineate the nature and extent of COCs for soil and groundwater. Pre-

RI and RI data are presented and compared to Site-specific screening levels developed in Section 4. Appendix E contains Pre-RI data for constituents other than COCs for the Hilton Avenue Properties subarea. In addition, the source references for Pre-RI data are included below and a full reference is provided in Section 8.

6.3.2.1 Soil Nature and Extent

Soil COCs for the Hilton Avenue Properties include TPH-G, PAHs, and selected metals (arsenic and lead). Pre-RI and RI soil data are compiled in Tables 6-9 to 6-10 and summarized in Figures 6-4 to 6-7. RI sampling included five surface soil sample stations and six subsurface soil borings throughout the Hilton Avenue Properties subarea, as shown in Figures 6-8a and 6-8b.

Soil sampling at the former Time Oil fuel terminal in November 2013 included TPHs and BTEX compounds. Results are summarized in Table 6-9. Total petroleum hydrocarbons were all below the unrestricted soil screening level with the exception of TPH-G at station CWSRI-04, where the detection limit was above the screening level of 30 mg/kg. This station is shown as a screening level exceedance in Figure 6-4.

A data quality review of the soil TPH analytical results for the former Time Oil area noted potential concerns with the TPH-G results. The data quality review was described in detail in a January 31, 2014, Memorandum (Anchor QEA 2014). As recommended in the January 31, 2014, Memorandum, the initial TPH-G results were flagged to reflect the influence of matrix interference from the method. It was requested that the analytical laboratory (Analytical Resources, Inc.) re-report the TPH-G data to ensure that the reported fractions do not overlap with the reported TPH-Dx results. The re-reported results were truncated at the diesel range to provide increased understanding of the relative contributions of matrix interference and diesel hydrocarbons to the apparent TPH-G concentrations. The truncated ranges resulted in TPH-G reported for the carbon range of C-6 to C-10, and TPH-Dx reported for the range of C-10 to C-24. Both the initial and re-reported TPH results are presented in Table 6-9. Soil BTEX results at the former Time Oil area were all at non-detect concentrations except station CWSRI-03, with all BTEX compounds reported at or below the screening level of 0.005 mg/kg. The reported non-detect benzene values for both

CWSRI-02 and CWSRI-03 were above the screening level and shown as an exceedance in Figure 6-4.

Soil sampling at the former Olivine processing facility was performed as part of pre-RI data collection activities and during RI and RI data gaps completion sampling. RI sampling focused on identifying current surface soil conditions. Analytical testing at the former Olivine processing facility has included metals, petroleum hydrocarbons, VOCs, PAHs, and SVOCs.

Surface soil RI sampling (0 to 1 foot bgs) was conducted at stations CWSS-19 to CWSS-23 but indicated PAHs exceeded Site-specific screening levels at a single station (CWSS-22; Table 6-10). All other analytes tested were below screening levels in surface soil. In addition, white sandy, fine-grained material (presumably "olivine sands") has been exposed in surface soils (the upper 1 to 2 feet) in the I&J Waterway shoreline due to bank erosion at the end of the east bulkhead adjacent to the former Olivine Uplands area. Sampling and analytical testing of this material will be conducted, at Ecology's request, in selected locations of the I&J Waterway shoreline to inform material composition and how it will be addressed in the CAP.

Historical soil sampling in the subsurface identified selected metals (arsenic and lead) and PAH contamination in isolated areas of the Hilton Avenue Properties footprint. Subsurface soil results are presented in Table 6-10. In the majority of impacted sample locations, the selected metals and PAH exceedances are co-located. Areas with elevated PAH, arsenic, and lead concentrations are presented in Figures 6-6 and 6-7, respectively.

Selected sample locations (TP-1, CWSS-19, and CWSS-21 through CWSS-23) had concentrations of other metals (such as nickel, mercury, and silver) that did not exceed soil direct contact screening levels but did exceed the SCO sediment criteria. With the exception of one location (CWSS-23, with a soil nickel concentration exceeding the SCO), the other three sample locations exceeding SCOs will be addressed by capping, which is the selected remedial technology identified in Section 11 to address direct contact exceedances of COCs (PAHs, arsenic, and lead). In addition to preventing direct contact, capping will also address the soil erosion pathway for nickel, mercury, and silver and prevent potential recontamination of adjacent marine sediment in the I&J Waterway. Recent sediment data collected from I&J Waterway adjacent to the Site show nickel concentrations are decreasing with time (Anchor QEA 2015). Based on current Site conditions, Ecology does not consider CWSS-23 to be a likely source of nickel contamination to I&J Waterway sediments.

6.3.2.2 Groundwater Nature and Extent

The only chemical that may currently exceed groundwater screening levels in the Hilton Avenue Properties subarea is total manganese.[15] As discussed previously, manganese is not a priority pollutant metal but a conventional parameter, which at high concentrations may be indicative of anaerobic conditions. The dissolved priority pollutant metals analysis performed on groundwater collected from shoreline wells in 2013 appropriately did not include manganese; however, none of the dissolved metals analyzed exceeded screening levels and, in fact, were mostly non-detect in the Hilton Avenue Properties subarea. Because no priority pollutant metals are currently present above screening levels, manganese is not expected to be present in dissolved phase or to drive evaluation of remedial alternatives for the Hilton Avenue Properties subarea. Therefore, it will not be carried forward as the sole metal COC for this subarea. No COCs are retained for groundwater in this subarea. Pre-RI and RI groundwater data are compiled in Tables 6-11 and 6-12 and summarized in Figures 6-4 to 6-7.

Groundwater sampling at the former Time Oil fuel terminal was performed in November 2013 at stations CWSRI-01, CWSRI-02, and CWSRI-04. Additional groundwater sampling was also performed in February 2014 to confirm the results from the November 2013 sampling. Testing included TPHs and BTEX compounds. As with the soil TPH-G results, the analytical laboratory re-reported the TPH-G groundwater data to ensure that the reported fractions do not overlap with the reported TPH-Dx results. Both the original and re-reported TPH groundwater data are provided in Table 6-11. Petroleum hydrocarbons and BTEX compounds were all below the groundwater screening levels.

The TPH-G results were detected below the MTCA Method A cleanup level of 800 µg/L in all monitoring wells at the former Time Oil area sampled in both November 2013 and February 2014. These data collaborate with the low benzene concentration detected at one monitoring well in November 2013 (this same well was non-detect for benzene in February 2014). The absence of benzene in groundwater and distance of the Time Oil area from the

[15] Total manganese was last sampled for in 2007.

I&J Waterway indicates that the groundwater-to-surface water and groundwater-to-sediment pathways are not complete for TPH-G concentrations at the former Time Oil area.

Groundwater sampling at the former Olivine processing facility was performed as part of pre-RI data collection activities and during RI and RI data gaps completion sampling. Analytical testing at the former Olivine processing facility has included total petroleum hydrocarbons, metals, VOCs, PAHs, metals, and SVOCs. Analytical results are presented in Table 6-12.

Existing monitoring wells at the former Olivine processing facility were sampled in 1999–2001, 2007, and 2013. Groundwater testing from 1999–2001 included eight monitoring wells and was performed as part of the independent RI under direction of the Port; however, the RI/FS report was not finalized or submitted to Ecology. Groundwater results from the 2007 RI sampling event are presented in Table 6-12 and indicated no exceedances of screening levels in all seven monitoring wells. In 2013, two nearshore monitoring wells (MW-4(O) and MW-8(O)) along the northern Site boundary were sampled and analyzed for dissolved metals and PAHs; results were all below screening levels.[16]

6.3.3 Contaminant Fate and Transport

Historical sources of petroleum hydrocarbons, metals, and PAH contamination within the Hilton Avenue Properties subarea are no longer present. Former operations have ceased and have been demolished.

Soil sampling has indicated that metals (arsenic and lead), total petroleum hydrocarbons, and PAH impacts at depths to 15 feet bgs are present and have the potential to enter stormwater drainage, and this source is addressed as part of the FS. Impacted subsurface soils remain in place; however, groundwater monitoring has shown that petroleum hydrocarbons, metals, and PAHs in soil are not a source of contamination to groundwater.

[16] 2013 groundwater samples were not analyzed for total or dissolved manganese. Note total manganese exceeded the screening level in the Hilton Avenue Properties subarea in groundwater samples collected prior to 2013. As discussed previously, manganese is a conventional parameter and is not carried forward as a metal COC for this subarea.

6.3.4 Exposure Pathways and Receptors

Petroleum hydrocarbons, metals, and PAHs are present in surface and subsurface soil at concentrations above the Site-specific screening levels. The groundwater to surface water/sediment pathway is not complete for this subarea. Assuming the full range of potential future land uses, and assuming no remedial action or protective control is in place, the current and future potentially complete pathways and receptors for the Hilton Avenue Properties subarea include the following:

- Workers or patrons contacting petroleum hydrocarbons, metals, and PAH-contaminated soils and/or inhaling impacted dust
- Workers directly contacting impacted soils (dermal contact, incidental ingestion) and/or inhaling impacted dust during excavation or other construction-related activities
- Runoff from surface soils to sediments from erosion of surface soils to the stormwater drainage system

6.3.5 Remedial Investigation Conclusions for Hilton Avenue Properties Subarea

Petroleum hydrocarbons, metals, and PAH concentrations in soils within the Hilton Avenue Properties subarea exceed its specific screening levels. The soil impacts are not a source of contamination to groundwater; monitoring over time has indicated empirically that soil contamination is not leaching to groundwater.

An evaluation of remedial alternatives for impacted surface soils at the Hilton Avenue Properties subarea is developed in the FS. This evaluation will focus on eliminating the potential for direct contact exposure and contaminated soil to enter the stormwater drainage and runoff to adjacent sediments.

6.4 Remedial Investigation Conclusions and Recommendations for Feasibility Study

This RI has been completed in accordance with the SOW for AO DE 3341, the RI/FS Work Plan (RETEC 2007), and all subsequent addenda. The RI presents the information and data collection results from investigations and cleanup actions since the mid-1980s, including extensive soil and groundwater testing as well as pathway specific sampling (e.g., porewater) to provide empirical data to confirm Site modeling efforts. These many soil borings and monitoring well installations have provided an extensive characterization of Site hydrogeology and previous test pitting has delineated the extent of landfill refuse from historical municipal landfill operations.

Based on the comprehensive Site characterization presented in Sections 1 through 6, the nature and extent of contamination has been defined sufficiently to proceed with development of the FS for the Site. Site data were used to evaluate media specific pathways to effectively identify the potential for exposure to contaminants by associated receptors. Table 6-13 provides a summary of the COCs and principle RI findings and conclusions for each subarea. Figure 6-10 depicts areas of soil and groundwater that exceed Site-specific screening levels developed as part of the RI process; these areas represent subareas that are addressed in the FS. The FS describes the cleanup level development process.

After completion of the RI/FS and CAP, the final Site cleanup will address areas of remaining upland contamination and will protect human health and ecological receptors by eliminating exposure pathways and recontamination potential to the Whatcom and I&J Waterway sites. The final Site cleanup will be coordinated with these adjacent sediment cleanup projects to ensure protectiveness.

7 CLEANUP ACTION REQUIREMENTS

This section describes the cleanup action requirements that must be met by the cleanup of the Site. Consistent with MTCA requirements, this section addresses three types of requirements:

- **Remedial Action Objectives (RAOs).** Remedial action objectives are specific goals to be achieved by the remedial alternatives and designed to adequately protect human health and the environment under a specific land use. RAOs address the threats that Site contaminants pose to humans and environmental resources.
- **Applicable or Relevant and Appropriate Requirements (ARARs).** ARARs are regulatory information that is "to be considered" in the development of remedial alternatives.
- **Cleanup Standards.** Cleanup standards include both cleanup levels (chemical- and media-specific concentration of a contaminant that is protective of human health and the environment via all exposure pathways) and a point of compliance (the location where the cleanup level must be attained to achieve protectiveness). Cleanup standards will be consistent with the current and anticipated future land use.

While the Site includes contaminated sediments, the cleanup of these areas will be accomplished by the cleanups occurring at the Whatcom and I&J Waterways sediment sites. As a result, cleanup requirements for the sediment areas of the Site are not addressed in this document.

7.1 Remedial Action Objectives

The RAOs for surface/subsurface soil, groundwater, landfill-associated gas, refuse, and soil gas consider the applicable exposure pathways for those media (previously described in the CSM; see Section 6). Table 7-1 summarizes the RAOs by the various Site subareas.

Each RAO will be achieved by terminating the associated exposure pathway. This can be done through contaminant treatment or removal to meet chemical- and media-specific cleanup standards (cleanup levels in Section 7.3 and points of compliance in Section 7.4) that are based on the specific exposure pathways, and/or otherwise by preventing exposure through containment with associated engineering and/or institutional controls.

7.2 Applicable, Relevant, and Appropriate Requirements

In addition to meeting environmental standards set in applicable laws, the cleanup action must also comply with elements of other environmental ARARs and permits. WAC 173-340-710 provides that MTCA cleanup actions must comply with applicable state and federal laws. Though a cleanup action performed under formal MTCA authorities (e.g., an order or a decree) is exempt from the procedural requirements of most state and all local environmental laws, the action must comply with the substantive requirements of such laws (Revised Code of Washington [RCW] 70.105D.090 and WAC 173-340-710). In addition, any applicable federal permits must be obtained.

ARARs typically fall into three categories:

- **Chemical-specific requirements.** These are typically health- or concentration-specific limits for a particular chemical. For this Site, potential ARARs include, Washington State Ambient Water Quality Criteria for Marine Waters (WAC 173-201A-040), Federal National Recommended Water Quality Criteria (Clean Water Act 304), Federal National Toxics Rule (40 CFR 131.36), Sediment Management Standards (WAC 173-204), and natural background levels. The most stringent concentration of the listed ARARs was selected as the groundwater criteria for the Site.
- **Location-specific requirements.** These are related to protection of a specific area or type of area. For this Site, potential ARARs include NPDES.
- **Action-specific requirements.** These requirements typically regulate discrete actions or are triggered by performance of a specific action. For this Site, potential ARARs include National and State Environmental Policy Act (NEPA and SEPA).

Table 7-2a presents ARARs that were applied in the selection of chemical-specific cleanup levels at the Site. Table 7-2b presents action- or location-specific ARARs that apply depending on the selected remedial activities.

It is anticipated that the cleanup action will be conducted under a Consent Decree entered into by Ecology and the Port. In performing the cleanup action under a Consent Decree, the Port would be exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW, and of any laws requiring or authorizing local government permits or approvals; however, the Port must still comply with the substantive requirements of such permits or approvals (WAC 173-340-520), as described below.

7.2.1 Permits Exemptions and Substantive Requirements

The following state and local requirements are identified as applicable but procedurally exempt for cleanup actions at the Site:

- Washington State Shoreline Management Act (RCW 90.58) and City of Bellingham Shoreline Permit under Shoreline Master Program, Bellingham Municipal Code (BMC) Title 22
- Major Grading Permit; City of Bellingham Grading Ordinance, BMC Title 16.70
- City of Bellingham Stormwater Requirements, BMC Title 15.42
- Critical Areas Report; City of Bellingham Critical Areas Ordinance, BMC Title 16.55

The applicable substantive requirements of these permits or approvals are identified in Table 7-3. Substantive requirements may be further identified during remedial design, and their approval shall reflect Ecology's determination on what substantive requirements apply.

7.3 Site Cleanup Levels

The MTCA Cleanup Regulations (WAC Sections 173-340-720, -730, and -740) establish procedures to develop cleanup levels for groundwater, soil, and air. The approach used in the development of screening levels in the RI followed these MTCA protocols for cleanup level establishment. This methodology has been consistently applied across cleanup sites throughout Bellingham Bay. As such, proposed groundwater, soil, and air (soil vapor) cleanup levels addressing potentially complete exposure pathways are compatible with the respective screening levels developed in the RI (Section 4).

Tables 7-4, 7-5, and 7-6 present the proposed cleanup levels for groundwater, soil, and air (soil vapor) respectively, consistent with the potentially complete exposure pathways identified in the CSM in Section 6. Table 7-4 includes the most stringent of the groundwater screening levels based on protection of the adjacent marine environment (surface water and sediment) or vapor intrusion to future structures (indoor air) or outdoor ambient air on the Site, as described in Section 4.2.1. Table 7-5 includes the soil screening levels for human direct contact and soil-to-groundwater leaching pathways, based on unrestricted land use, as described in Section 4.2.2. Table 7-6 includes the air (soil vapor) screening levels based on protection of indoor air and landfill gas (methane) pathways, as described in Section 4.2.3.

7.3.1 Remediation Level

A site-specific soil TPH remediation level of 19,000 mg/kg is proposed as protective of the soil-to-groundwater pathway (protective of LNAPL accumulation) and is applicable exclusively to the C Street Properties subarea. Since this concentration is not protective of the soil direct contact pathway or for soil leaching to groundwater for unrestricted (residential) use, this concentration is not a soil cleanup level.

As described in Appendix F, 19,000 mg/kg for soil TPH corresponds to the residual saturation concentration (which is a conservative value below which the LNAPL [i.e., "free product"] is not mobile). This residual saturation concentration threshold has been used to identify remaining high concentrations of gasoline-, diesel-, and motor oil-range TPH and potentially mobile LNAPL occurrence within the C Street Properties subarea, which has historically had elevated petroleum contamination in soil and groundwater.

This soil TPH remediation level is retained in this RI/FS.

Section 9.1.4 describes the application of the soil TPH remediation level for a specific hotspot in the C Street Properties subarea.

7.4 Points of Compliance

The point of compliance is the specific location(s) at which measurements are performed to demonstrate compliance of a cleanup action with the established Site cleanup levels. The proposed points of compliance for the groundwater, soil, and air (soil vapor) cleanup levels are described below.

7.4.1 Groundwater

The standard groundwater point of compliance under MTCA (WAC 173-340-720 (8)) is defined as "…established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth, which could potentially be affected by the Site," regardless of whether groundwater is potable or not.

For volatile groundwater contaminants that can pose a risk via vapor intrusion, protectiveness is achieved by meeting vapor intrusion-based groundwater cleanup levels throughout Site groundwater or wherever structures would be built on grade in the future. Therefore, for vapor intrusion protection, the point of compliance for Site groundwater is throughout the shallowest aquifer (Site Groundwater Unit).

At this Site, where groundwater's highest beneficial use is discharge to marine water, protectiveness of that beneficial use is dependent on meeting marine-protection-based groundwater cleanup levels at the points where groundwater discharges to marine sediment (bioactive zone) and then the marine water column of Whatcom and I&J Waterways and Bellingham Bay. Therefore, a groundwater conditional point of compliance protective of the sediment bioactive zone would achieve protection of the marine environment (sediment and water column).

According to WAC 173-340-720(8)(c), "Where it can be demonstrated under WAC 173-340-350 through 173-340-390 that it is not practicable to meet the cleanup level throughout the site (e.g., within the refuse) within a reasonable restoration timeframe, Ecology may approve a conditional point of compliance that shall be as close as practicable to the source of hazardous substances, and except as provided under (d) of this subsection, not to exceed the property boundary. It is anticipated that it would not be practicable[17] (as demonstrated in the Disproportionate Cost Analysis [DCA] in Section 10) to meet groundwater cleanup levels throughout the Site within a reasonable timeframe with a standard point of compliance. Where a conditional point of compliance is proposed, the person responsible for undertaking the cleanup action shall demonstrate that all practicable methods of treatment be used in the site cleanup."

As demonstrated in subsequent sections, the only alternative that could potentially achieve groundwater cleanup levels at the standard point of compliance within a relatively short

[17] Practicability is based on a determination that a more permanent cleanup action is not practicable based on the disproportionate cost analysis in WAC 173-340-360(3)(e).

timeframe is Alternative F, which consists of the full excavation of contaminated soils and refuse in the three subareas. However, as demonstrated in the DCA in Section 10, the costs are clearly disproportionate because a small incremental environmental benefit is achieved compared to the other remedial alternatives.

At this Site, due to the solid waste landfill, groundwater conditional points of compliance may be defined at the landfill north and south perimeters (between the area of known contamination [Landfill footprint] and the shorelines), and also throughout the C Street Properties subarea, as the standard points of compliance. The final groundwater point(s) of compliance will be established as part of the CAP.

7.4.2 Soil

The standard soil point of compliance under MTCA (WAC 173-340-740 (6)) is defined as follows:

(b) *For soil cleanup levels based on protection of groundwater, the point of compliance shall be established throughout the Site;*

(c) *For soil cleanup levels based on protection from vapors, the point of compliance shall be established throughout the Site from the ground surface to the uppermost groundwater saturated zone;*

(d) *For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance shall be established in the soils throughout the Site from the ground surface to 15 ft bgs.*

All of these points of compliance are applicable to this Site.

Under WAC 173-340-740 (6)(f), Ecology recognizes that soil cleanup levels may not be met at the points of compliance listed above. Therefore, the cleanup action is determined to comply with cleanup standards, provided the following conditions are met:

- The selected remedy is permanent to the maximum extent practicable using the procedures in WAC 173-340-360.
- The cleanup action is protective of human health.

- The cleanup action is protective of terrestrial ecological receptors under WAC 173-340-7490 through 7494.
- Institutional controls are put in place that prohibit or limit activities that could interfere with the long-term integrity of the containment system.
- Compliance monitoring and periodic reviews are designed to ensure the long-term integrity of the containment system.
- The types, levels, and amounts of hazardous substances remaining on site and the measures that will be used to prevent migration and contact with those substances are specified in the draft CAP.

The above information has been taken into consideration in the development of the remedial alternatives discussed in Section 9. The final soil point(s) of compliance and any associated institutional controls will be established as part of the CAP.

7.4.3 Air (Soil Vapor)

The standard air point of compliance under MTCA (WAC 173-340-750 (6)) is ambient air throughout the Site, whether indoors or outdoors.

It is assumed that, given the range of current and potential future land uses, air (soil vapor) hazards at the Site are primarily associated with enclosed spaces (e.g., buildings). Engineering controls such as under-building venting systems have been incorporated in the remedial alternatives discussed in Section 9, including passive venting for methane gas associated with the Landfill footprint and Perimeter subarea and vapor intrusion controls for VOCs/TPH soil gases associated with the C Street Properties subarea. In addition, institutional controls requiring the use of these engineering controls will also be established.

8 IDENTIFICATION AND SCREENING OF REMEDIAL TECHNOLOGIES

This section reviews available remedial technologies, identifies and screens out those that are not applicable, and selects a range to be assembled into remedial alternatives. The remedial technologies for this Site are based on the RAOs described in Section 7 and are evaluated for their effectiveness for removal, treatment, and/or control of contamination; their implementability at the Site, and their relative cost (Table 8-1). The retained remedial technologies may be applicable to specific subareas of the Site because of impacts from different contaminants (Table 8-2) and combined within and among the subareas to provide effective remedial alternatives, which are developed in Section 9.

8.1 Institutional Controls

Institutional controls are measures to "limit or prohibit activities that may interfere with a cleanup action or result in exposure of humans to hazardous substances at the site" (WAC 173-340-200). Institutional controls are required to assure both the continued protection of human health and the environment and the integrity of remedial actions due to the presence of hazardous substances remaining at the Site above applicable cleanup levels and, therefore, cannot be considered a stand-alone remedial technology.

Institutional controls that can be implemented at cleanup sites are described in the MTCA regulations (WAC 173-340-440), including physical restrictions or administrative/legal tools. Potentially applicable institutional controls include the following:

- Fences and warning signs to limit access to the Site or specific areas on the Site
- Deed restrictions addressing land use and soil excavation
- Deed restrictions to preclude drinking water use
- Use restrictions to prevent disturbance of caps or other engineered controls
- Provision for long-term inspection and maintenance of cleanup actions including long-term monitoring
- Specific worker protection standards applicable to specific areas of the Site
- Identification of responsibilities for institutional controls implementation (including those of the Port, City, and future land owner)

The specifics of the institutional controls required as a component of the selected cleanup action for this Site will be developed by Ecology and the Port, in consultation with stakeholders including the City of Bellingham, during preparation of Ecology's CAP and Consent Decree for the cleanup action.

The details of the required institutional controls and their implementation will be further defined in an Institutional Controls Plan specific to the Site's cleanup action. It is anticipated that the Institutional Controls Plan will be prepared as a component of the cleanup Consent Decree.

Institutional controls have been carried forward in the FS for alternatives development.

8.2 Engineering Controls

Engineering controls are physical mitigation strategies to effectively reduce or eliminate the potential for exposure to a COC. Engineering controls can be combined with institutional controls to prevent exposure at sites where complete removal or treatment is not completed. Potential engineering controls at the Site include vapor intrusion controls for VOCs and TPH and a gas collection system for methane.

Engineering controls have been carried forward in the FS for alternatives development.

8.3 Containment

Containment involves confining contaminants in soil and/or groundwater through placement of a barrier system, which is designed to prevent, or significantly reduce, direct contact exposures and migration or erosion of the impacted contaminants. Long-term barrier integrity can be ensured through implementation of appropriate institutional controls and routine inspection and maintenance. The ability of a cover to reduce the potential for groundwater impacts is dependent on the design of the barrier, the main purpose of which is to reduce infiltration of surface water through the isolated media. This is achieved through a balance of surface water conveyance (i.e., runoff) at the top of the barrier, water percolation or evaporation within the barrier, lateral water conveyance (i.e., drainage) within the barrier, and infiltration retardation (i.e., permeability reduction) at the base of the barrier.

Containment technologies provide a relatively low, cost-effective method of reducing the potential for exposure to impacted contaminants.

8.3.1 Physical Barrier Capping

Physical barrier capping may include the installation of light asphalt paving, gravel, or soil cover over soils above cleanup criteria. The cover prevents direct contact with impacted soils but does not inhibit the infiltration of surface water. Institutional controls and cover maintenance and monitoring would be required to ensure the integrity of the cover over time.

Physical barriers have been carried forward in the FS for alternatives development.

8.3.2 Reduced-permeability Capping

Reduced-permeability capping is generally defined as capping reducing infiltration by 50%, up to 70%, compared to undeveloped conditions, and may include asphalt paving, concrete (e.g., building construction), or geomembrane systems. In areas where site development has already reduced infiltration sufficiently, a reduced-permeability cap might consist of a physical barrier combined with institutional controls so that future development would not increase infiltration to above acceptable levels.

According to RETEC (1996, 1997) and ThermoRetec (2001), the landfill operation contract required placement of at least 2 feet of soil cover over the refuse upon landfill closure. The final height at which municipal refuse was placed was 20 feet above MLLW in most of the landfill, with soil cover being applied between elevations 20 and 22 feet above MLLW. During pre-design testing conducted in 1997, it was confirmed that municipal wastes are largely restricted to elevations below 20 feet above MLLW. The soil cover, known as the Landfill Cover Soils Unit (see Section 3.2.1.1), has a varying thickness across the landfill footprint, ranging from 2 to more than 10 feet in some areas. Examples of the lateral and vertical extent of pre-warehouse landfill cover soils are shown in representative cross sectional views in Figures 3-2a and 3-2b.

The Landfill Cover Soils Unit consists of fill materials placed following closure of the landfill, including sediments removed during construction of the ASB, stockpile soils from the Chestnut Street relocation project, and additional soil and wood waste from the GP log yard (RETEC 1996). This unit is primarily composed of a mixture of loosely compacted sand, gravel, and silt. Localized areas contain a large percentage of fine lime, wood, and other materials. Also present are layers typically less than 1 foot thick composed of heterogeneous mixtures of gravel, sand, silt, clay, fine lime, cobbles, wood, and building materials such as cinder blocks, bricks, and wood planking (RETEC 1997). Visual observations of soil samples and drill cuttings indicate that the percentage of sand and silt in the Landfill Cover Soils Unit increases from east to west.

In addition to the landfill soil cover, GP constructed in 2000 and 2001 a 250,000-square-foot warehouse building over the central portion of the landfill. The landfill area was also graded and capped and a methane control system was installed beneath the warehouse. The warehouse and associated paved areas have eliminated infiltration within the building footprint and significantly reduced infiltration over a large portion of the landfill. The Roeder Avenue RI/FS (ThermoRetec 2001) estimated that a net decrease of approximately 50% in the precipitation recharge of groundwater was achieved within the landfill area after completion of the project.

Existing cover conditions at the Landfill footprint subarea sufficiently reduce infiltration through the refuse/wood waste and consist of soil covers, asphalt paving, and a warehouse structure constructed on top of the landfill area. These cover conditions have limited migration of dissolved contaminants in groundwater toward the landfill perimeter areas and clay berm.

Reduced-permeability capping has been carried forward in the FS for alternatives development.

8.3.3 Low-permeability Capping

Low-permeability capping is generally defined as capping reducing infiltration more than 70%, compared to undeveloped conditions. It may include low-permeability asphalt paving (hot mix asphalt plus a dense graded aggregate base), compacted clay layer with geosynthetic drainage, concrete (e.g., building construction), or geomembrane systems.

Low-permeability capping has been carried forward in the FS for alternatives development.

8.3.4 Composite Capping

Composite capping is constructed of various layers of soil and engineered materials, such as flexible membrane liners, geonets, or geosynthetic clay liners. The additional impermeable layer prevents infiltration to underlying soils from occurring as well as prevents direct exposure and controls erosion. This type of cap is the typical design employed in new landfill construction, which could be considered a more protective option under certain site conditions but is also a more expensive alternative. Implementation of composite capping in an existing landfill (for example, within the Landfill subarea at the Site) would be difficult because of placement around existing buildings, therefore, not fully confining contaminants in soil and/or groundwater through a barrier system in a continuous manner.

Due to limited implementability in an existing landfill, relatively higher costs, and small incremental benefits, composite capping has not been carried forward in the FS for alternatives development.

8.4 Physical Diversion

Physical diversion systems are barriers that can be used to contain or capture groundwater or modify groundwater flow patterns. The barrier systems can be used to fully or partially encircle a site, or they can be applied in a more selective manner to alter certain elements of groundwater flow. Depending on the intended use of the system, barrier walls could be installed as a “hanging” wall or keyed in to the low-permeability material below the sand layer. A “hanging” wall would not contain groundwater within the Site but rather divert groundwater and increase its flow path and travel time, prior to discharge to adjacent surface water. A wall which is “keyed in” to the low-permeability layer below the sand, would contain groundwater within the Site and/or divert it to other points of discharge depending on whether the wall fully or partially encircles the Site. The influence of fully penetrating barrier systems on groundwater flow patterns would depend on the length, placement, and permeability of the barrier system, and on any other actions performed in parallel with the barrier system.

Technology options include sheetpile walls, slurry walls, grout curtains, and polymer wall designs.

8.4.1 Clay Berm and ASB Water Levels

As discussed in Section 2.1.2, a clay berm was constructed in 1964 along the western shoreline of the Landfill subarea, extending north-south on top of the tide flats between the Hilton Avenue bulkhead and the Chevron property (at D Street). According to the City of Bellingham records (RETEC 1996, 1997), the berm was constructed of clay obtained from a quarry near Squalicum Parkway in Bellingham. The berm height was 15 feet above MLLW but raised to 22 feet above MLLW in 1972 in order to accommodate the additional refuse volume, and aerial photographs show the berm width of about 20 feet (Appendix G).

Therefore, the clay berm is currently performing as an effective “hanging” low-permeability physical diversion wall extending from the ground surface to native soils, not only containing groundwater within the Landfill subarea, but also diverting it and increasing its flow path and travel time prior to discharging to the adjacent surface water. Based on empirical data (see Section 6.1.2.3), the shallow and deep groundwater-to-surface water and sediment pathways for groundwater flowing from the landfill around and underneath the clay berm are not considered complete. Both shallow and deep groundwater contamination from the landfill footprint attenuates over time and with distance and depth.

In addition, under current conditions, the ASB water levels and groundwater elevations in adjacent areas of the landfill indicate that they are within a half-foot of each other, as evidenced by a relatively flat groundwater gradient and area of stagnation (see Section 3.3.3.2).

The function of the clay berm in conjunction with the current ASB water level conditions as a physical groundwater diversion wall has been carried forward in the FS for alternatives development.

8.4.2 Sheet Pile Wall

A sheet pile wall is a subsurface barrier that retains soil, using steel sheet sections with interlocking edges. Sheet piles are installed in sequence to design depth along the planned excavation perimeter or seawall alignment. The interlocked sheet piles form a wall for permanent or temporary lateral earth support with reduced groundwater inflow. Anchors can be included to provide additional lateral support if required.

Vibratory hammers are used to install sheet piles. If soils are too hard or dense, an impact hammer can be used to complete the installation. At certain sites where vibrations are a concern, the sheets can be hydraulically pushed into the ground.

Sheet pile wall has been carried forward in the FS for alternatives development.

8.4.3 Slurry Wall

A slurry wall is a subsurface barrier that consists of a vertically excavated trench filled with a slurry, which hydraulically shores the trench to prevent collapse during excavation. Slurry wall composition provides a barrier with low permeability and chemical resistance at low cost.

Most slurry walls are constructed of a soil, bentonite, and water mixture. The bentonite slurry is used primarily for wall stabilization during trench excavation. After design depth is reached, a soil-bentonite backfill material is then pumped through a tremie pipe to the bottom of the trench (displacing the slurry) and steel reinforcement is inserted to create the cut-off wall. Other wall compositions, such as cement/bentonite, pozzolan/bentonite, attapulgite, organically modified bentonite, or slurry/geomembrane composite, may be used if greater structural strength is required or if chemical incompatibilities between bentonite and site contaminants exist.

Slurry wall has been carried forward in the FS for alternatives development.

8.4.4 Grout Wall

A grout wall is a subsurface barrier that consists of flowable particulate grouts injected into the soil matrix slowly and under relatively low pressure in order to avoid excessive hydrofracturing of the soil, in an effort to permeate or encapsulate the individual soil grains (without otherwise disturbing the natural state of the soil). The grouted mass becomes a "wall" that has an increased strength and stiffness, and reduced permeability, therefore, decreasing groundwater flow through soil. Grout spread is governed by soil type, degree of soil compaction, grain size distribution, grout type (e.g., solution or suspension), gel time, grout rheology, and grouting pressure.

Sleeve pipes are the key enabling apparatus involved. They are installed prior to grouting by being placed and encapsulated in a weak mix of bentonite and cement in a series of drilled holes intersecting the target soil mass. A sleeve pipe (typically a PVC or steel pipe), contains several sets of small holes along its length that are enveloped by protective, expandable, rubber sleeves. The sleeves act as one-way valves, keeping fluids outside the pipe from getting in, but allowing fluid on the inside—once sufficiently pressurized—to get out. Grout is injected via the grout pump at surface, through the grout tube across the sleeve and into the interstitial space between the individual soil grains.

Grout wall has been carried forward in the FS for alternatives development.

8.5 *In Situ* Treatment

8.5.1 Monitored Natural Attenuation

Natural attenuation relies on natural processes (physical, chemical, or biological) that can lead to the reduction of mass, toxicity, mobility, volume, or concentration of organic contaminants in soil and/or groundwater. These processes include biodegradation, dispersion, mixing, sorption, volatilization, and various chemical reactions of COCs.

Evidence of ongoing natural attenuation was presented in the RI report for COCs in soil and soil gas in the Landfill footprint subarea (Section 6). As described in the RI report, groundwater at the Site flows southward and northward towards Whatcom Waterway and I&J Waterway, respectively. However, migration of impacted groundwater may potentially occur only from the C Street Properties subarea towards the western and southern shorelines, because of the presence of metals and TPH. A memorandum entitled "*Groundwater Quality Evaluation for Total Petroleum Hydrocarbons and Dissolved Metals in the C Street Properties Subarea, Central Waterfront Site*" (Appendix H; dated February 10, 2017; prepared at Ecology's request), presents additional lines of evidence that demonstrate that natural biodegradation and/or chemical degradation of metals and TPH is occurring and will continue to occur at reasonable rates at the C Street Properties subarea. The memorandum also evaluates geochemical indicators and microbial reactions involved in biological/chemical degradation of petroleum-contaminated groundwater based on Washington State Department of Ecology's guidance (Ecology 2005).

In accordance with the requirements presented in WAC 173-340-370(7)(c), both the RI findings and Appendix H favor the viability of natural attenuation at the Site, because it can be an effective means for containment and eventual cleanup of contaminated groundwater.[18] It is anticipated that monitoring will be required to verify the performance of natural attenuation (therefore, the term "monitored natural attenuation" [MNA]). The information from the RI and Appendix H provide a baseline against which long-term monitoring data can be compared.

MNA has been carried forward in the FS for alternatives development.

8.5.2 Bioremediation

Bioremediation is a technology that uses microorganisms to degrade organic contaminants in soil and/or groundwater. The microorganisms break down contaminants by using them as an energy source or co-metabolizing them with an energy source. A delivery system that provides one or more of the following is generally required: an energy source (electron donor), an electron acceptor, and nutrients. Different types of microbial electron acceptor classes can be involved in bioremediation, such as oxygen-, nitrate-, manganese-, iron (III)-, sulfate-, or carbon dioxide-reducing, and their corresponding reduction/oxidation (redox) potentials (the latter provide an indication of the relative dominance of the electron acceptor classes).

[18] With the exception of a potentially complete groundwater-to-surface water/sediment pathway for dissolved copper in the southeastern shoreline of the C Street Properties subarea, where an active remedial technology would be necessary to address any residual groundwater contamination.

To stimulate and enhance microbial activity, one option is to add microorganisms (bioaugmentation) or amendments (biostimulation), such as air, organic substrates or other electron donors/acceptors, nutrients, and other compounds that affect and can limit treatment in their absence. Biostimulation can be used where the bacteria necessary to degrade the contaminants are present but conditions do not favor their growth (e.g., anaerobic bacteria in an aerobic aquifer, aerobic bacteria in an anaerobic aquifer, lack of appropriate nutrients or electron donors/acceptors). Bioaugumentation can be used when the bacteria necessary to degrade the contaminants do not occur naturally at a site or occur at a population that is too low to be effective.

Because there is strong evidence at the Site that natural attenuation processes are active (indicating established anaerobic conditions) and will continue to occur, bioremediation (as biostimulation) is retained to complement and enhance other viable technologies.

Bioremediation has been carried forward in the FS for alternatives development.

8.5.3 Soil Vapor Extraction

Soil vapor extraction (SVE) is an *in situ* unsaturated (vadose) zone soil remediation technology, in which a vacuum is applied to the soil to induce the controlled flow of air and remove VOCs and SVOCs from the soil. Geomembrane covers are often placed over soil surface to prevent pulling in clean air from above, reduce short circuiting, and increase the radius of influence of the wells. The off-gases (extracted contaminated air and vapors) are treated to remove any harmful contaminants.

VOCs and SVOCs at the Site are generally located in the saturated zone; however, lowering the water table could expose more media to the SVE extraction and, if the thickness of the vadose zone is deemed sufficient, the application of this technology may be viable without compromising effectiveness.

SVE has been carried forward in the FS for alternatives development.

8.5.4 Air Sparging

Air sparging is an *in situ* remediation technology that involves the injection of air or oxygen through a contaminated aquifer, reducing concentrations of VOCs and SVOCs adsorbed to soils and dissolved in groundwater. Injected air traverses horizontally and vertically in channels through the soil column, creating an underground stripper that removes contaminants by volatilization. The injected air helps to flush the contaminants into the unsaturated zone. Additionally, air sparging introduces oxygen into groundwater and vadose-zone soils, enhancing biodegradation of contaminants below and above the water table.

Air sparging has been used to address a broad range of VOC and SVOC groundwater and soil contaminants, including gasoline and other fuels and associated BTEX components and chlorinated solvents. Sites with relatively permeable, homogeneous soil conditions favor the use of air sparging due to greater effective contact between sparged air and the media being treated and effective migration/extraction of volatilized vapors.

Air sparging has been carried forward in the FS for alternatives development.

8.5.5 Chemical Oxidation

In situ chemical oxidation (ISCO) is an aggressive remediation technology that has been applied to a wide range of volatile and semivolatile hazardous contaminants. Chemical oxidation typically involves redox reactions that chemically convert hazardous compounds to non-hazardous or less toxic compounds that are more stable, less mobile, or inert. The oxidizing agents most commonly used for treatment of contaminants in groundwater are hydrogen peroxide with/without catalysts, potassium and sodium permanganates, sodium persulfate, and ozone, all of which have a list of advantages, limitations, and specific applications. At this Site, the use of ISCO systems is not appropriate due to existing elevated chromium concentrations in groundwater, which under strong oxidizing conditions can transform the less-toxic trivalent form of chromium into the more toxic and more mobile hexavalent form.

Chemical oxidation has not been carried forward in the FS for alternatives development.

8.5.6 Permeable Reactive Barrier

A permeable reactive barrier (PRB) is an *in situ* subsurface emplacement of reactive materials through which a dissolved contaminant plume flows under natural gradient. The reactive materials adjust geochemical conditions to immobilize contaminants, reduce toxicity, and treat groundwater, preventing contaminant migration downgradient of the constructed barrier. PRBs can be installed as continuous permeable walls, in which the reactive media are more permeable than surrounding soils, allowing groundwater to pass through the wall; or as "funnel and gate" walls in which impermeable sections ("the funnel") direct the groundwater plume toward a permeable treatment zone with reactive material ("the gate"). Because groundwater behind a funnel and gate type-PRB will often mound behind the wall and create a downward gradient, funnel and gate PRBs require keying into an underlying low-permeability layer to prevent underflow.

Reactive media are commercially available to treat multiple contaminants with different chemical characteristics, including organics and inorganics in a single system. Apatite (bone meal) and granular activated carbon (GAC) are examples of highly effective reactive treatment media for metals and TPH, respectively.

Permeable reactive barriers have been carried forward in the FS for alternatives development.

8.5.7 Solidification/Stabilization

The term "solidification/stabilization" refers to treatment processes that both solidify and stabilize the contaminant matrix, including solids and liquids. Solidification and stabilization are each distinct technologies, as follows:

- Solidification refers to processes that encapsulate a waste to form a solid material and/or coat the waste with low-permeability materials to restrict contaminant migration by decreasing the surface area exposed to leaching. Solidification can be accomplished by mechanical processes or by a chemical reaction between a waste and binding (solidifying) reagents, such as cement, kiln dust, or lime/fly ash. The desired changes usually include an increase of the compressive strength, a decrease of permeability, and encapsulation of hazardous constituents.

- Stabilization refers to processes that involve chemical reactions that reduce the leachability of a waste. Stabilization chemically immobilizes hazardous materials or reduces their solubility through a chemical reaction. This process may or may not change the physical nature of the waste. The desired changes for stabilization include converting contaminants into a less soluble, mobile, or toxic form.

Solidification/stabilization is a demonstrated effective treatment technology on metals and inorganic contaminants, as they are converted into insoluble precipitates. Solidification/ stabilization becomes much less effective with increasing concentrations of organic contaminants, such as TPH and PAHs (contaminants present in the C Street Properties subarea); without additives, organics usually are sorbed or encapsulated in the matrix pores, with leachability depending on the solubility of the compound in water and its diffusivity through the waste matrix.

This technology is not implementable at sites with excessive debris (such as debris present in the Landfill footprint subarea). Debris causes interference with the solidification/ stabilization equipment and must be pre-excavated. In addition, it cannot be applied beneath pile-supported buildings and could not be applied to previously developed portions of the Site.

Solidification/stabilization has not been carried forward in the FS for alternatives development.

8.5.8 Electrical Resistance Heating

Electrical resistance heating treatment is the application of heat through alternating electricity to enhance the volatilization or destruction of contaminants in soil. As the electric current is passed through a targeted soil volume between subsurface electrode elements, the contaminants change into a gaseous phase, which are then captured by a subsurface vapor recovery system and conveyed to the surface along with recovered air and steam.

Electrical resistance heating is highly effective on VOCs (especially dense or light nonaqueous phase liquids, such as petroleum hydrocarbons), but it is not effective on inorganic compounds (in fact, metals may distort the electric current paths). This technology allows soil to be treated *in situ* (without being excavated and transported) and is commonly applied under active buildings, but the capital costs associated with the system installation and startup are significant. In addition, treatment generally requires longer restoration time periods and there may be uncertainty in treatment homogeneity because of variable characteristics in the soil and the aquifer. Because of the high variability of Site conditions in the three subareas and the presence of elevated inorganic contaminants, effectiveness of electrical resistance heating across the Site may be limited.

Electrical resistance heating has not been carried forward in the FS for alternatives development.

8.5.9 Vitrification

The vitrification technology uses an electric current through electrodes to melt contaminated soil at elevated temperatures (1,600 to 2,000 °C or 2,900 to 3,650 °F). Upon cooling, the vitrification product is a chemically stable, leach-resistant, glass, and crystalline material similar to basalt rock. The high temperature component of the process destroys or volatilizes most organic pollutants by pyrolysis and the off-gasses need to be treated before release. Radionuclides and heavy metals are retained within the vitrified product.

This technology is not compatible with highly organic matrices, excessive debris, presence of pipes, or potentially flammable or explosive atmospheres.

Vitrification has not been carried forward in the FS for alternatives development.

8.6 *Ex Situ* Treatment

8.6.1 Pump and Treat

Pump and treat systems can be used to hydraulically contain areas of contaminated groundwater and control its migration. This technology includes a series of vertical extraction wells or subsurface collection trenches that establish an appropriate target capture zone for subsequent treatment and/or discharge. The effectiveness of this technology to completely capture impacted groundwater is often limited at sites with heterogeneous soils and where contaminants are not soluble.

Where water production rates are relatively low and where water treatment disposal options are readily available, hydraulic capture by pump and treat can be a cost-effective and implementable approach for site containment. Pumping wells and associated piping can typically be installed in inconspicuous areas with minimal impacts to property use. Based on the groundwater quality measured at the Site, direct discharge to the sanitary sewer (publicly owned treatment works) may be feasible without pretreatment. Discharge to surface waters would require a discharge permit and groundwater treatment. Discharge to the publicly owned treatment works is assumed as the likely disposal method for groundwater from a pump and treat system.

A pump and treat technology may be used at the Site in conjunction with physical containment and capping technologies that would minimize water production rates.

Pump and treat has been carried forward in the FS for alternatives development.

8.6.2 Landfarming/Composting

Landfarming/composting is an *ex situ* bioremediation technology, which requires excavation and placement of contaminated soils. The contaminated media is applied into lined beds, periodically turned over/tilled to aerate the waste. Soil conditions are often controlled to optimize the rate of contaminant degradation, such as moisture content (usually by irrigation or spraying), aeration (by tilling the soil with a predetermined frequency, the soil is mixed and aerated), pH (buffered near neutral pH by adding crushed limestone or agricultural lime), or other amendments (e.g., soil bulking agents, nutrients, etc.).

Application of landfarming/composting at the Site is limited by the large amount of space required for the lined beds. Currently, there is no available area for on-site treatment of contaminants.

Landfarming and composting have not been carried forward in the FS for alternatives development.

8.6.3 Soil Washing

Soil washing is an *ex situ* water-based separation process for scrubbing soils to remove contaminants. The process removes contaminants from soils in one of the following two ways: a) by dissolving or suspending them in the wash solution (which can be sustained by chemical manipulation of pH for a period of time); or b) by concentrating them into a smaller volume of soil through particle size separation, gravity separation, and attrition scrubbing. The concept of reducing soil contamination through the use of particle size separation is based on the finding that most organic and inorganic contaminants tend to bind, either chemically or physically, to clay, silt, and organic soil particles.

Soil washing is generally considered a media transfer technology. The contaminated water generated from soil washing needs to be treated afterwards with a technology(s) suitable for the contaminants.

A complex mixture of contaminants in the soil (such as a mixture of metals, nonvolatile organics, VOCs, and SVOCs) and heterogeneous contaminant compositions throughout the soil mixture make it difficult to formulate a single suitable washing solution that will consistently and reliably remove all of the different types of contaminants. For these cases, sequential washing, using different wash formulations and/or different soil to wash fluid ratios, may be required. Therefore, the application of this technology at the Site may be limited due to complex contaminant mixtures (e.g., metals with organics).

Soil washing has not been carried forward in the FS for alternatives development.

8.6.4 Thermal Desorption

Thermal desorption is an *ex situ* treatment technology that removes organic contaminants from soil by heating them in a "thermal desorber" to volatilize the contaminants. Evaporation changes the contaminants into vapors (gases) and separates them from the solid material. Typically, a carrier gas or vacuum system transports the volatilized water and organics to a treatment system (recovery unit). Many organic contaminants can be removed by thermal desorption, including VOCs and some SVOCs; while VOCs (such as solvents and gasoline) evaporate easily when heated (200 to 600 °F), SVOCs require higher temperatures to evaporate

(600 to 1,000°F). Thermal desorption is generally effective for VOCs and SVOCs, achieving 90% to 99.7% destruction efficiencies for PAHs, but it is not effective for metals.

The key cost driver for this technology is the moisture content of the waste material, which causes high-energy requirements (increase in fuel costs), resulting in a technology that is more expensive than other *ex situ* treatment options.

Thermal desorption has not been carried forward in the FS for alternatives development.

8.7 Removal

8.7.1 Excavation

Excavation of contaminated media is a common remedial approach for source removal and it is usually coupled with various off-site treatment or disposal options.

Because the Site has been redeveloped over the years, existing structures at the Site would have to be removed and demolished to provide access for excavation of the contaminated media. In addition, any excavation of any subsurface contaminated soil in the three Site subareas would require a planned sequence for control of surface and groundwater, shoring of slopes to prevent damage to Roeder Avenue utilities and buildings on adjacent properties, segregation and containment of materials, stockpiling for treatment or disposal, transportation impacts for shipment of excavated materials, and excavation backfilling and regrading. Excavation methods would also have to incorporate actions to prevent contaminant suspension and further degradation of groundwater quality, and the need for dewatering/water management (if excavation occurs below the groundwater table). Disadvantages of this technology include transportation impacts (e.g., dust, odors) associated with mass excavation of any subsurface contaminated soil in the three Site subareas and would likely result in some disruption to the community. However, excavation of the areas could potentially be coordinated with future development plans, thereby limiting community disruption.

Excavation has been carried forward in the FS for alternatives development.

8.8 Disposal

8.8.1 On-site Disposal, Treatment, and Reuse

On-site disposal, treatment, and reuse is an option for management of excavated soils. However, this option is limited at this Site by the lack of available area for on-site treatment of contaminated soil. On-site disposal, consolidation, and containment is less costly than off-site landfill disposal but requires long-term, on-site management of impacted materials. On-site treatment of solid waste is, on the other hand, cost-prohibitive.

On-site disposal, treatment, and reuse have not been carried forward in the FS for alternatives development.

8.8.2 Off-site Landfill Disposal

Impacted materials from the Site may be transported to an off-site, permitted disposal facility. This disposal method provides for secure, long-term containment of non-hazardous and hazardous solid wastes. While this can be cost prohibitive for larger volumes of material, off-site landfill disposal is the most likely alternative for management of excavated materials.

Off-site landfill disposal has been carried forward in the FS for alternatives development.

8.8.3 Incineration

Incineration is the process of burning hazardous materials at temperatures high enough to destroy contaminants. Excavated wastes may require further preparation, such as grinding or removing large rocks and debris, or removing excess water. The materials are then placed in the combustion chamber of an incinerator where they are heated to an extremely high temperature (1,600 to 2,500 °F) for a specified period of time.

Many different types of hazardous materials can be treated by incineration, including soil, sludge, liquids, and gases. Although it destroys many kinds of harmful chemicals, such as solvents, PCBs, and pesticides, incineration does not destroy metals, such as lead and chromium.

Incineration has extremely high costs and could potentially generate byproducts that would offset the environmental benefit associated with volume reduction.

Incineration has not been carried forward in the FS for alternatives development.

8.9 Summary of Retained Remedial Technologies

The following technologies are retained for development of remedial alternatives for the Site:

- Institutional controls
- Engineered controls, including landfill gas collection and vapor intrusion controls
- Engineered capping, including physical barrier, reduced-permeability, and low-permeability capping
- Barrier walls, including sheetpile, slurry, and grout walls
- *In situ* treatment, including monitored natural attenuation, bioremediation, soil vapor extraction, air sparging, and permeable reactive barrier
- Soil excavation and off-site disposal

9 DESCRIPTION OF REMEDIAL ALTERNATIVES

Remedial alternatives have been assembled to meet the RAOs (described in Section 7) and based on the retained remedial technologies (described in Section 8). This section provides a detailed description of the six remedial alternatives with specific actions performed in each subarea of the Site and associated costs. These remedial alternatives are carried forward into the detailed MTCA evaluation in Section 10.

The six proposed remedial alternatives described in this section are presented in order of increasing remedial scope, in terms of long-term effectiveness, permanence, and cost. The six remedial alternatives are summarized as follows:

- **Alternative A:** primarily relies on capping, groundwater MNA, clay berm/ASB water level physical diversion wall on the western boundary of the Landfill footprint subarea, contingent targeted groundwater treatment on the southeastern boundary of the C Street Properties subarea, engineering controls for vapor intrusion/landfill gas, institutional controls, and a hotspot removal in the C Street Properties subarea.
- **Alternative B:** in addition to the elements of Alternative A, Alternative B includes a targeted shoreline groundwater treatment for the C Street Properties subarea.
- **Alternative C:** in addition to the elements of Alternative A, Alternative C includes a targeted shoreline groundwater treatment for the Landfill footprint and the C Street Properties subareas.
- **Alternative D:** in addition to the elements of Alternative C, Alternative D includes *in situ* soil and groundwater treatment for the C Street Properties subarea.
- **Alternative E:** in addition to the elements of Alternative B, Alternative E includes *in situ* soil and groundwater treatment for the C Street Properties subarea, and a groundwater barrier wall at the downgradient boundary of the Landfill footprint subarea.
- **Alternative F:** full excavation, transport, and off-site disposal of contaminated soils and refuse in the three subareas, including the hotspot in the C Street Properties subarea.

Table 9-1 presents the remedial technologies applied to each subarea. Table 9-2 summarizes the assembly of remedial alternatives by subarea. Figures 9-1 through 9-6 depict the remedial elements for the six remedial alternatives.

The remedial alternatives are independent of other Site-specific redevelopment and interim remedial actions, but they have been assembled to be compatible with these actions (see Section 9.1.5).

9.1 Common Assumptions

This section describes common elements and details pertinent to several remedial alternatives. Groundwater compliance monitoring, engineering controls, and institutional controls apply to the scope of Alternatives A through E. The hotspot removal and previously completed and planned interim remedial actions and cleanups are common elements to all remedial alternatives.

9.1.1 Groundwater Compliance Monitoring

Groundwater compliance monitoring is expected to be the key element of an overall compliance monitoring program. The MTCA cleanup regulations describe three types of compliance monitoring (WAC 173-340-410):

- Protection monitoring, to confirm that human health and the environment are adequately protected during construction and the operation and maintenance of the cleanup action
- Performance monitoring, to confirm that the cleanup action has attained the cleanup levels and other performance standards
- Confirmational monitoring, to confirm the long-term effectiveness of the cleanup action

Although a groundwater compliance monitoring plan will be developed after the CAP is finalized, groundwater protection, performance, and confirmational monitoring activities are assumed for cost purposes in this RI/FS and are developed specifically for the scope of the various remedial alternatives. For Alternatives A through E, which rely on containment and treatment, groundwater monitoring would continue for long periods of time. Long-term compliance monitoring is not anticipated for Alternative F, which involves full excavation of contaminated soils and refuse, because achievement of cleanup levels would occur immediately after construction completion.

Gauging and sampling frequency would depend on groundwater concentrations, constituent concentration trends, geochemical indicators and microbial reactions involved in biological/chemical degradation. The groundwater monitoring program assumed includes semiannual sampling (to provide a dry/wet seasonal record of constituent concentrations), with gradual decreases in frequency to annual or potentially less frequent sampling intervals, if data trends are relatively stable.

The compliance monitoring plan will address specific reporting requirements. The following reports are representative of what may be required for this project:

- Groundwater compliance monitoring and well maintenance plan: describes the long-term groundwater monitoring program for the Site to comply with MTCA requirements (Chapter 173-340 WAC).
- Periodic groundwater monitoring report: describes the groundwater monitoring results for activities conducted during the reporting period. Any modifications to the groundwater monitoring program would be recommended in the periodic reports.
- Periodic cleanup action activity report: describes the cleanup action activities conducted the reporting period and associated monitoring results from those activities. This report would include required regulatory reporting for the various cleanup action components implemented at the Site.
- Period (5-year) review report: provides an overall assessment of the activities conducted at the Site during the previous 5 years, as well as any recommendations for modifications to the groundwater monitoring and cleanup action activities.

As described in Section 3.6.3, the Port cleanup and plans include the development of a marina within the current ASB footprint. This action would result in groundwater flow and associated potential contaminant transport from the landfill toward the future tidally influenced marina. It is assumed that surface water receptors would consequently be potentially affected. The timeline for the marina development is currently unknown by the Port. However, if the marina development occurs, monitoring of shallow groundwater and intertidal porewater would potentially be required when ASB is breached to evaluate groundwater flow and contaminant transport from the landfill into the marina. Results from this monitoring would be the basis to inform the decision on whether or not a treatment action in the western shoreline of the landfill is necessary.

9.1.2 Engineering Controls for Vapor Intrusion/Landfill Gas

Any existing, occupied, and future building located in an area containing subsurface impacts that pose a vapor intrusion risk (e.g., methane gas in the Landfill footprint and VOCs/TPH in the C Street Properties subareas) may be potentially required to incorporate vapor intrusion controls and/or a landfill gas collection system beneath them. The need for engineering controls would be evaluated during the remedial design phase and the determination on the type of system would be specific to the building and its current and future use. A typical system that could be installed in conjunction with construction of future buildings would likely include a vapor barrier, a permeable gas collection layer in the subgrade, perforated pipe laterals, venting risers, and an in-building detector. As assessed during remedial design, any existing occupied buildings could be retrofitted with ventilation controls and subject to indoor air monitoring.

Long-term compliance monitoring of engineering controls in existing and future buildings is expected to be another key element of an overall compliance monitoring program. Although a compliance monitoring plan for the landfill gas collection systems and indoor air will be developed after the CAP is finalized, vapor intrusion and landfill gas monitoring activities in existing buildings are assumed for cost purposes in this RI/FS and are developed specifically for the scope of the various remedial alternatives; however, costs associated with monitoring of future buildings are not included in this RI/FS because development projects are out of the scope of the remedial action funding.

For future buildings, it is anticipated that construction quality assurance monitoring would be conducted during installation of the engineered control. In addition, indoor air monitoring would be done prior to occupancy and during normal operation to screen for potential accumulations of gases in the building and vent monitoring to evaluate gas conditions below concrete slabs, confirming the mitigation system performance. Sampling frequency would depend on gas and vapor concentrations and constituent concentration trends, so performance of the mitigation system can be tracked over time.

Furthermore, future buildings will require Ecology approval because the Environmental Covenant for the Site will have prohibitions on disturbing the existing cap without prior Ecology approval.

Currently, it is estimated that the Site area covered by buildings is approximately 30%, 7%, and 17% in the Landfill footprint and Perimeter, C Street Properties, and Hilton Avenue subareas, respectively, within their corresponding remediation areas (Appendix I, Figure 1 and Table 2). A detailed building inventory for each subarea would be conducted during the remedial design phase.

For FS costing purposes, it was assumed that all existing[19] buildings would be subject to engineering controls.

9.1.3 Institutional Controls

Institutional controls are an integral element of Alternatives A through E and would include the following:

- Fences and warning signs to limit access to the Site or specific areas on the Site
- Deed restrictions addressing land use and soil excavation
- Prohibition on breaching the ASB (i.e., development of a marina within the current ASB footprint) without prior Ecology approval. Shallow groundwater and intertidal porewater monitoring would potentially be required when the ASB is breached to evaluate groundwater flow and contaminant transport from the landfill into the marina. Results from this monitoring would be the basis to inform the decision on whether or not a treatment action in the western shoreline of the landfill is necessary.
- Prohibition to extraction of groundwater and its preclusion for consumptive use
- Restrictions to prevent disturbance of caps without Ecology approval

[19] With the exception of the Landfill warehouse, for which a methane control system was installed beneath the warehouse building in 2001.

- Engineered controls in future buildings to address potential landfill gas or vapor intrusion
- Provision for long-term inspection and maintenance of cleanup actions including long-term monitoring
- Specific worker protection standards applicable to specific areas of the Site
- Future development would be required to include vapor intrusion controls appropriate to the design of the buildings
- Identification of responsibilities for institutional controls implementation (including those of the Port, City, and future land owner)

9.1.4 Hotspot Removal

The C Street Properties subarea has historically had elevated petroleum contamination in soil and groundwater. The soil TPH remediation level of 19,000 mg/kg (see Section 7.3.1) was used to identify areas with remaining exceedances of gasoline-, diesel-, and motor oil-range TPH and potentially mobile LNAPL occurrence in this subarea.

Along the southern shoreline of the C Street Properties Subarea, two test borings (CW-TP-09 and CWSB-17) indicate that the petroleum impacts exceed the soil TPH remediation level. Soil samples collected from test pit CW-TP-09 (completed on July 2, 2012) had TPH concentrations of 32,000 mg/kg[20] (6.3 to 7.3 feet bgs) and 20,900 mg/kg (10 to 11 feet bgs). Soil boring CWSB-17 (completed on May 8, 2012) had a TPH concentration of 25,100 mg/kg (6 to 8 feet bgs). These sample locations are in the area immediately adjacent to and upland of the West Central Waterfront sheetpile wall, installed as part of the Whatcom Waterway Phase 1 cleanup. Appendix I (Figure 2) presents the location of the impacted soil. These nearshore occurrences have been identified for removal because they represent an ongoing source of contamination to the Site groundwater and the adjacent surface water.

Although petroleum impacts extend upland beyond this hotspot area, and overall in the C Street Properties Subarea, based on the available data they do not currently exceed the residual saturation concentration; therefore, they are not contributing to potentially mobile

[20] Silica gel treated.

LNAPL. These remaining areas with residual TPH contamination are addressed with various remedial technologies as part of the RI/FS remedial alternatives presented in Section 9.

Based on the RI data, the hotspot was delineated to require an excavation depth of 12 feet below existing grade, for an estimated volume of 1,000 cubic yards. Assuming an average soil density of 1.5 tons/cubic yard, this volume equates to 1,500 tons of soil. Appendix I (Figure 2) presents the anticipated extent of TPH soil concentrations exceeding the 19,000 mg/kg TPH remediation level.

Each of the six remedial alternatives includes the hotspot removal as a source control for the C Street Properties subarea.

9.1.5 Previously Completed and Ongoing Interim Actions/Cleanups

Previously completed and ongoing interim actions/cleanups at the Site include the following:

- Chevron Area Interim Action
- All American Marine Building Interim Action
- C Street Terminal Interim Action
- Whatcom Waterway Cleanup in Phase 1 Site Areas

For costing purposes, each of the six remedial alternatives includes these interim actions and cleanups that are planned, in progress, or have been completed as part of the Site-wide remedial action.

9.1.5.1 Chevron Area Interim Action

The Chevron Area interim action was conducted in January 2013 at the former Chevron Property area beach to address nearshore occurrences of contaminated soil and sediment with elevated TPH concentrations, which represented an ongoing source of contamination to Site groundwater and the adjacent surface water of Whatcom Waterway (Anchor QEA 2013a). The interim action was performed to achieve permanent control of localized petroleum product sources to sediment, groundwater, and surface water through isolation and removal of contaminated soil for off-Site disposal. In addition, the beach was restored with imported clean sand and gravel materials and armored to minimize beach erosion.

Components of the Chevron Area interim action included the following:

- **Piling and debris removal.** Wood debris was removed from the Site, and exposed wood pilings were cut off at the bottom of the excavation.
- **Soil and sediment excavation.** Excavation of 800 cubic yards of contaminated material was conducted during nightly low tides. The bottom surface of the excavation at elevation +2 feet MLLW was observed for visual or olfactory evidence of petroleum impacts and, due to a strong petroleum-like odor, an additional 2 feet of material was removed.
- **Free product containment.** Separate phase oily liquid was encountered and flowed out of the side slopes between elevations +8 feet and +3 feet MLLW on the landward side of the excavation. This liquid was contained in a sump and was pumped with a 3-inch submersible pump to an on-site 18,000-gallon storage tank.
- **Off-site disposal.** A total of 1,181 tons of soil and sediment were disposed of in an off-site landfill.
- **Backfill.** A sheet of impermeable geomembrane (20 mil thick high-density polyethylene [HDPE]) was placed along the excavated side slope and 10 feet of the adjacent excavation bottom. A 2-foot thick layer of sand was placed over the entire excavated area, followed by layers of filter gravel (1-foot thick) and armor stone (1.5-feet thick). A layer of fish mix was placed over the armor stone to fill the interstitial spaces.
- **Water management.** Stormwater and groundwater were collected during the excavation, pumped directly into liquid storage containers for settling, and sent to an oil-water separator. Approximately 17,000 gallons of water were discharged to the ASB, in compliance with the existing NPDES Permit for the ASB.

9.1.5.2 All American Marine Building Interim Action

The All American Marine (AAM) Building project is located south of Hilton Avenue, and includes the construction of a new 54,000-square-foot marine manufacturing building and associated launch route from the building to the Squalicum Harbor boat launch.

Soil impacts and landfill refuse were identified in the area of the AAM project and pose potential risk to Site workers and the public via direct contact and indoor air inhalation.

Therefore, soil impacts in the immediate area of the AAM project were addressed as an interim cleanup action. The goal of the AAM interim action is to achieve permanent control of localized soil sources to groundwater, surface water, and sediment, and prevent exposure to Site workers and the public through isolation and removal of contaminated soil for off-Site disposal and landfill gas control. Specific goals for this interim action are as follows:

- **Reduce mass of contaminants in soil through subsurface excavations for construction of utilities and footings.** Excavation was performed within the AAM building footprint to construct grade beams varying between 30 and 48 inches in width, and 30 to 72 inches in depth. Some excavation also resulted from the installation of the stone structural columns throughout the building footprint. Utility trenches were excavated throughout the building and parking lot footprint for electrical, gas, potable water, stormwater, and gas conveyance lines. On average, it is assumed that the subgrade will be 20 inches below the finished grade surfaces, including the finished slab of the building and the finished grade surface around the building. This results in an estimated excavation of 6,757 cubic yards of soil[21] to date.
- **Prevent potential exposure via direct contact to contaminated soils located in the footprint of the project by capping.** Hardscape caps in the AAM building footprint will consist of buildings, asphalt, and concrete, at a minimum of 3 inches hardscape material underlain by a 4-inch minimum gravel base. Landscape caps will consist of a minimum 24 inches of uncontaminated material (topsoil/clean soil) with a marker fabric to define the base of the cap. Gravel surfacing and the launch route for the AAM project is still under design and may be considered an environmental cap in coordination with Ecology at a later date.
- **Prevent potential indoor air exposure by installing a landfill gas collection system in conjunction with the construction of the AAM building.** Although the majority of the AAM building footprint is outside of the landfill waste boundary, after constructing the building slab, the surface will be relatively impermeable and buildup of landfill gas could occur. Considerations, including proximity to the landfill and the lack of landfill gas source controls, are the basis for implementing a mitigation system to provide ongoing ventilation and protection against indoor accumulation of landfill gas. The landfill gas control system generally consisted of four components:

[21] Quantity based on tonnage and assuming a conversion factor of 1.5 tons per cubic yard.

1) landfill gas collection layer (to capture rising landfill gas and convey it to a strip geocomposite); 2) strip geocomposite (to convey landfill gas to vents that discharge above the roofline); 3) vapor barrier (impermeable liner below the building slab to prevent vapor intrusion); and 4) landfill gas vents (a series of vents that connect the strip geocomposite to the atmosphere).

Interim action-related work completed is summarized as follows:

- Approximately 1,757 cubic yards of soil[22] were hauled off site for disposal in an approved Subtitle D landfill.
- Approximately 5,000 cubic yards of soil[23] were determined to be chemically suitable[24] and geotechnically suitable for on-site reuse.
- Approximately 13,978 square yards of hardscape and softscape (landscape) caps were constructed[25]; caps include asphalt pavement, concrete pavement, and landscape area.
- A landfill gas collection system was installed to provide ventilation to protect against accumulation of landfill gas in the AAM building.

The AAM launch route will be constructed in the summer of 2017.

9.1.5.3 C Street Terminal Interim Action

The C Street Terminal project is located in the C Street Properties subarea. It is a development plan proposed by the Port to rehabilitate utilities and upland infrastructure, and to enhance stormwater collection and treatment of the existing C Street waterfront terminal and adjacent right-of-way areas located at C Street and Maple Street (Anchor QEA 2016a).

In mid-2016, the project was divided into phases due to limited funding available for construction. The first phase, which involved rehabilitation of utilities, stormwater

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[22] Quantities include asbestos-impacted soils, based on tonnage and assuming a conversion factor of 1.5 tons per cubic yard.

[23] Quantity based on tonnage and assuming a conversion factor of 1.5 tons per cubic yard.

[24] Chemical suitability was based on the soil screening levels included in the Interim Action Work Plan (Anchor QEA 2016a).

[25] Approximately 6,722 square yards of asphalt pavement, 800 square yards of concrete curbs and sidewalks, 6,156 square yards of reinforced concrete foundation, and 300 square yards of soft landscape cap were constructed.

improvements, and road surfacing along the C Street rights-of-way, was substantially completed in late January 2017. The second phase of work is intended to enhance existing upland infrastructure in support of the marine trades in the Whatcom Waterway area and may include new marine electrical service along the bulkhead, lighting, and water supply; and resurfacing the terminal for heavy vehicle use and stormwater collection. Final design of the second phase of work is ongoing and a construction timeframe is yet to be determined.

Soil impacts have been identified in the area of the C Street Terminal project and represent an ongoing source of contamination to Site groundwater, surface water, and sediment, and pose potential risk to Site workers and the public via direct contact and indoor air inhalation. Therefore, soil impacts in the immediate area of the C Street Terminal Phase 1 project were addressed as an interim cleanup action approved by Ecology (Anchor QEA 2016a); the second phase of the project will likely be addressed under the same interim cleanup action.

The goal of the C Street Terminal interim action (both phases) is to achieve permanent control of localized soil sources to groundwater, surface water, and sediment, and prevent exposure to Site workers and the public through isolation and removal of contaminated soil for off-Site disposal. Specific goals for this interim action are as follows:

- **Reduce mass of contaminants in soil through subsurface excavations for construction of utilities.** An estimated total of 8,000 cubic yards of impacted soils will be excavated from the footprint of the C Street Terminal in conjunction with both phases of work. Approximately 4,000 cubic yards of excavation will be required along C Street and at the terminal for asphalt/concrete paving. In addition, 5,500 feet of trenching will be required to install underground utilities and stormwater conveyance piping, producing approximately 3,000 cubic yards of excavated material. Up to 10 stormwater vaults may be installed to a maximum depth of about 10 feet. Excavations for vault installation will generate an additional 1,000 cubic yards of material.
- **Prevent potential exposure via direct contact to contaminated soils located in the footprint of the project by capping.** Hardscape caps in the C Street Terminal footprint will consist of asphalt and concrete, at a minimum of 3-inch depth hardscape material underlain by a 4-inch minimum depth gravel base.

Interim action-related work completed under Phase 1 of the project is summarized below[26]:

- Approximately 5,663 cubic yards of soil were excavated and analyzed to determine soil reuse suitability.
- Approximately 3,315 cubic yards of soil were determined to be chemically suitable[27] and geotechnically suitable for on-site reuse.
- Approximately 2,348 cubic yards of soil[28] were hauled off site[29] for disposal in an approved Subtitle D landfill; these soils were determined to be chemically unsuitable and/or geotechnically unsuitable for on-site reuse.
- Four stormwater vaults were installed in the C Street right-of-way.
- 4,360 square yards of cap were constructed[30]; caps include asphalt and concrete pavement, asphalt overlays, and concrete patching.

9.1.5.4 Whatcom Waterway Cleanup in Phase 1 Site Areas

Phase 1 of the Whatcom Waterway cleanup began in mid-2015 and was completed in mid-2016. Adjacent to the Site, the project included work along the southern Site boundary, including in-water work (dredging and engineered capping construction), shoreline stabilization, source control structure construction (containment walls), and structure demolition and removal.[31] The following activities have been completed to-date for the first phase of work:

- **Dredging**
  - Removal of 50,650 cubic yards of contaminated sediments within the Inner Whatcom Waterway area

[26] Based on quantities provided by the contractor.
[27] Chemical suitability was based on the soil screening levels included in the Interim Action Work Plan (Anchor QEA 2016a).
[28] This quantity of soil disposal represents the final project quantities, which were tracked in tons, and are converted to cubic yards, assuming a conversion factor of 1.5 tons per cubic yard.
[29] Soils hauled off site for landfill disposal included soils that exceeded soil screening levels, in addition to soils that were excavated below the groundwater table; soils excavated below the groundwater table were required, by contract, to be disposed of without soil testing.
[30] Approximately 1,700 square yards of asphalt pavement and overlays, 2,600 square yards of concrete pavement, and 60 square yards of concrete patching were constructed.
[31] Additional dredging, capping, shoreline stabilization, and structure removal occurred in other Whatcom Waterway areas (Bellingham Shipping Terminal, Log Pond, South Shoreline) as part of the first phase of work but are not relevant to the Site RI/FS.

- Disposal of contaminated dredged materials at the Columbia Ridge Landfill (Oregon), a permitted upland Subtitle D landfill
- Dewatering, treatment, and discharge of treated water from the barge ramp excavation area to the ASB to facilitate completion of dredging and capping activities at the Maple Street Bulkhead

- **Capping**
  - Placement of engineered capping materials in the eastern, central, and western portions of the Site adjacent to the East and West Central Waterfront walls and Maple Street Bulkhead. The engineered caps consist of a combination of sand, gravel filter, and rock armor. Cap placement occurred over an area of approximately 450,000 square feet in the Inner Whatcom Waterway.

- **Shoreline stabilization**
  - Removal of shoreline debris throughout the southern Site shoreline area
  - Upland excavation of soils to facilitate installation of the shoreline containment walls
  - Re-grading of shoreline area to accommodate installation of shoreline containment walls and placement of engineered caps
  - Installation of partially exposed sheet pile containment wall along the western (former Chevron Property) and eastern (former Colony Wharf Property) portions of the Site to minimize risks of recontamination associated with contaminated soil and groundwater, consistent with cleanup and source control requirements and to facilitate safe completion of shoreline dredging and capping. The walls are composed of 25- to 60-foot lengths of sheet piling and are installed along approximately 360- and 130-linear-foot sections of the shoreline.
  - Installation of steel sheetpile bulkhead wall, tie-back soil anchors, and a fender system at the Maple Street Bulkhead
  - Construction of sheet pile wall pile cap along the East and West Central Waterfront areas
  - Re-grading of the uplands in west central waterfront shoreline area to meet post-construction grades and elevations
  - Inspection of sheetpile interlock joints and sealant performance

- **Structure demolition, removal, and replacement**
  - Upland demolition of concrete slabs and steel barge ramp throughout the southern Site shoreline area, and debris removal in the nearshore to facilitate installation of the shoreline containment walls
  - Removal of existing creosote-treated timber piling, dolphins, and bulkheads to facilitate in-water cleanup activities
  - Installation of fender piles at the Maple Street Bulkhead and steel dolphin piles along the Central Waterfront shoreline area
  - Installation of replacement floats, mooring piles, and a concrete crane pad at Colony Wharf lift/launch area east of the Maple Street Bulkhead

The Phase 2 project will address remaining Whatcom Waterway areas and will use a combination of dredging, capping, confined aquatic disposal, and institutional controls to achieve cleanup levels. These activities may be performed in association with certain waterfront redevelopment activities.

9.2 Other Assumptions

- In order to generate cost estimates, FS-level assumptions were made regarding the type of capping, *in situ*/shoreline treatment, and disposal technologies. These assumptions were made for cost comparison purposes only and may be subject to change during remedial design.
- Capital and annual costs are derived specifically for each subarea. Capital costs assume fixed, one-time expenses associated with the remedial elements, and annual costs assume long-term operation and maintenance of those elements, including long-term inspection, monitoring, and maintenance.
- Other costs (design/permitting, contingency, project management/additional reporting, and construction management) were applied as typical FS-level percentages, based on best professional judgement and similar recent projects. Tax is also included at 8.7% to account for Washington State, Whatcom County, and the City of Bellingham taxes.

- Site-wide costs are applied to all remedial alternatives, independently of the subarea, and include mobilization/demobilization (variable by remedial alternative), groundwater monitoring, and institutional controls.
- Spent costs are applied to all remedial alternatives, independently of the subarea, and include costs for previously completed or ongoing interim actions or cleanups (see Section 9.1.5): Chevron Area Interim Action, All American Marine Building Interim Action, C Street Terminal Interim Action, and Whatcom Waterway Cleanup in Phase 1 Site Areas.
- All remedial alternatives require engineering controls to mitigate vapor intrusion risk in current buildings. Costs associated with stormwater collection and conveyance are not included in these FS cost estimates. The need for stormwater improvements will be evaluated as part of capping during remedial design.
- The need for a potential targeted removal of Olivine sands (top 2 feet of the shoreline) and capping at the end of the east bulkhead adjacent to the former Olivine Uplands area (within the Hilton Avenue subarea) to address bank erosion will be further evaluated during remedial design.
- Costs for remediation and/or removal of sediment in the Whatcom and I&J Waterways are not included in the scope of the Central Waterfront remedial action.
- Costs for each of the remedial alternatives are presented on a net present value basis in 2017 dollars, using a discount factor of 0.7 percent, based on the 30-year real discount rate of November 2016 Office of Management and Budget Circular A-94 (Federal Programs 2016).

9.3 Alternative A

Alternative A consists of the following cleanup action elements (Figure 9-1):

- Reduced-permeability caps in the Landfill footprint and in the C Street Properties subareas
- Physical barrier cap in the Hilton Avenue Properties subarea
- Clay berm/ASB water level physical diversion wall on the western boundary of the Landfill footprint subarea
- Contingent targeted groundwater treatment on the southeastern boundary of the C Street Properties subarea

- Groundwater MNA in the Landfill Perimeters and throughout the C Street Properties subarea
- Engineering controls for vapor intrusion for VOCs and TPH and a landfill gas collection system for methane
- The use of appropriate institutional controls
- Hotspot removal in the C Street Properties subarea, transportation, and off-site disposal
- Previously completed and ongoing interim actions/cleanups at the Site

Capping would consist of a combination of existing asphalt pavement, concrete in building foundations, new buildings and pavement, and/or new soil covers. Existing conditions on the Landfill footprint subarea (approximately 30% covered by buildings, 49% covered by concrete/asphalt, and 21% covered in gravel, within the remediation area) and on the southern-western portion of the C Street Properties subarea (approximately 2% covered by buildings, 41% covered by concrete/asphalt, and 57% covered in gravel, within the remediation areas) are expected to limit infiltration sufficiently to meet the requirements of a reduced-permeability cap. Institutional controls would require that infiltration be controlled below acceptable levels. For FS costing purposes, it was assumed that in these two subareas only a physical barrier is needed to supplement existing conditions to meet the requirements of a reduced-permeability cap. The physical barrier would consist of a 2-foot gravel cap with a marker/separation layer, to be placed on the contaminated areas currently with gravel cover (a minimum of 12 inches of uncontaminated soil and 12 inches of gravel). The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces.

A physical barrier cap in the Hilton Avenue Properties subarea addresses the soil pathway for direct contact and erosion of surface and subsurface contaminated soils, as infiltration reduction is not required. A 2-foot gravel cap (consisting of 12 inches of uncontaminated soil and 12 inches of gravel with a marker/separation layer) was assumed for FS costing purposes as the physical barrier cap, to be placed on the contaminated areas currently with gravel cover. The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces.

Annual cap inspections, maintenance, and repair activities for 30 years were also accounted for in Alternative A.

As described in Section 8.4.1, the clay berm is currently performing as an effective "hanging" low-permeability physical diversion wall down to the native layer, not only containing groundwater within the Landfill subarea, but also diverting it and increasing its flow path and travel time prior to discharging to adjacent surface water. Also, under current conditions, ASB water levels and groundwater elevations in adjacent areas of the landfill indicate that they are within a half-foot of each other, as evidenced by a relatively flat groundwater gradient and area of stagnation.

For cost estimating purposes, a contingent[32] PRB was assumed as the targeted groundwater treatment at the southeastern boundary of the C Street Properties subarea to address contaminant migration (mainly copper) and provide added protection of downgradient groundwater discharging to surface water and sediments.[33] The PRB would extend along the eastern Site boundary, and adjacent to the East Central Waterfront Wall; the base of the barrier would be keyed into the glacial marine till (approximately 30 feet bgs) and would be approximately 4 feet wide and 120 feet long. For FS costing purposes, it was assumed that the permeable barrier would consist of a reactive amendment (an apatite/limestone mixture, 10%/90% by mass, respectively) to sequester metals migrating from the former Colony Wharf area. This alternative also assumed that the reactive materials would not need to be replaced over the lifetime of the remedial action. Treatability studies would need to be performed to verify applicable reactive amendments, determine corresponding dosages, establish reactions kinetics, and calculate the overall design life of a PRB or other groundwater treatment.

Alternative A uses MNA, in addition to the clay berm/ASB water level physical diversion wall and the contingent targeted groundwater treatment as described above, to address

[32] At Ecology's request, design-level groundwater monitoring will be conducted in the summer of 2017 to evaluate the seasonal influence in groundwater migration of dissolved metals at the southeastern boundary of the C Street Properties subarea and, therefore, refine the need for this contingent action during remedial design.
[33] The actual type of groundwater treatment would be determined during engineering design and could consist of chemical injections in source areas rather than a PRB.

groundwater contamination at the Site. It is assumed that groundwater monitoring will occur at select wells within the existing monitoring network at the Site in addition to some newly installed wells. For FS costing purposes, the network assumed 14 shallow wells (distributed between the Landfill Perimeter and the C Street Properties subarea and shoreline) and 5 deep wells (along the landfill shoreline). Semiannual (years 1 to 5) and annual (years 6 to 10 and in 5-year intervals afterwards) sampling events would take place during a 30-year period. Groundwater analyses would include metals (total and dissolved), BTEX, PAHs, and TPH compounds.

Engineering controls for vapor intrusion for VOCs and TPH and landfill gas collection system for methane will be required as described in Section 9.1.2.

Institutional controls will be required as described in Section 9.1.3.

Hotspot removal in the C Street Properties subarea is included in Alternative A, as described in Section 9.1.4.

Previously completed and ongoing interim actions/cleanups at the Site are included in Alternative A, as described in Section 9.1.5.

The total estimated cost for Alternative A is $13,495,000, which includes capital, annual, and other costs for the three subareas ($2,659,000), site-wide costs ($904,000), and spent costs ($9,931,000) (Table 9-3). All costs are presented as net present value in 2017 dollars (Appendix I).

9.4 Alternative B

Alternative B consists of all of the cleanup action elements of Alternative A, with the addition of the following (Figure 9-2):

- Targeted groundwater treatment for the western shoreline of C Street Properties subarea

In Alternative B, a PRB was assumed as the targeted groundwater treatment at the shoreline for the C Street Properties subarea to address contaminant migration and provide added protection of downgradient groundwater discharging to surface water and sediments. The PRB would extend along the western shoreline of the former Chevron bulk fuel terminal; the base of the barrier would be keyed into the glacial marine till (approximately 30 feet bgs) and would be approximately 4 feet wide and 250 feet long. The permeable barrier would be installed as two permeable wall segments[34] consisting of reactive amendments targeting specific contaminants in each. For FS costing purposes, it was assumed that the northern segment of the PRB would use an apatite/limestone mixture (10%/90% by mass, respectively) to sequester metals migrating from the Landfill footprint subarea, and the southern segment of the PRB would use an apatite/limestone/GAC mixture (10%/80%/10% by mass, respectively) to adsorb both metals and organics sourcing in the C Street Properties subarea. This alternative also assumed that the reactive materials would not need to be replaced over the lifetime of the remedial action. Treatability studies would need to be performed to verify applicable reactive amendments, determine corresponding dosages, establish reactions kinetics, and calculate the overall design life of the PRB.

Capping in Alternative B would consist of a combination reduced-permeability cap in the Landfill footprint (to reduce infiltration) and physical barrier caps in the Hilton Avenue Properties and C Street Properties subareas (to address soil direct contact and erosion). As for Alternative A, existing conditions on the Landfill footprint subarea are expected to limit infiltration sufficiently to meet the requirements of a reduced-permeability cap. For FS costing purposes, it was assumed that in the Landfill footprint only a physical barrier is needed to supplement existing conditions to meet the requirements of a reduced-permeability cap. The physical barrier would consist of a 2-foot gravel cap with a marker/separation layer to be placed on the contaminated areas currently with gravel cover, with the same design characteristics described in Alternative A. This alternative includes the same level of annual cap inspections, maintenance, and repair activities as for Alternative A.

[34] Currently, a box culvert outfall is located where C Street (city right of way) ends to the west of the Site. The shoreline treatment system would be designed to accommodate this structure, while performing the anticipated remedial function.

Alternative B uses MNA to address groundwater contamination at the Site. Under this alternative, groundwater monitoring will occur at select wells within the existing monitoring network at the Site in addition to some newly installed wells, for a 30-year period and sampling frequency, as assumed for Alternative A.

Engineering controls for vapor intrusion for VOCs and TPH and landfill gas collection system for methane will be required as described in Section 9.1.2.

Institutional controls will be required as described in Section 9.1.3.

Hotspot removal in the C Street Properties subarea is included in Alternative B, as described in Section 9.1.4.

Previously completed and ongoing interim actions/cleanups at the Site are included in Alternative B, as described in Section 9.1.5.

The total estimated cost for Alternative B is $16,231,000, which includes capital, annual, and other costs for the three subareas ($5,345,000), site-wide costs ($954,000), and spent costs ($9,931,000) (Table 9-3). All costs are presented as net present value in 2017 dollars (Appendix I).

9.5 Alternative C

Alternative C consists of all of the cleanup action elements of Alternative A, with the addition of the following (Figure 9-3):

- Targeted groundwater treatment for the western shoreline of Landfill footprint and the C Street Properties subareas

In Alternative C, a PRB was assumed as the targeted groundwater treatment at the shoreline for the Landfill footprint and C Street Properties subareas to address contaminant migration and provide added protection of downgradient groundwater discharging to surface water and sediments. The PRB would extend along the western shoreline of the landfill and the former Chevron bulk fuel terminal; the base of the barrier would be keyed into the glacial marine till (approximately 30 feet bgs) and would be approximately 4 feet wide and 1,370 feet long. The barrier would be installed as two permeable wall segments[35] consisting of reactive amendments targeting specific contaminants in each. While the northern segment of the PRB would extend along the shoreline from C Street to the northwest landfill boundary, the southern segment of the PRB would include the shoreline south of C Street. The reactive amendments, mixture proportions, and treatability study scope included in Alternative C are similar to those assumed for Alternative B.

Capping in Alternative C would consist of physical barrier caps in the Hilton Avenue Properties, Landfill footprint, and C Street Properties subareas, to address soil direct contact and erosion. For FS costing purposes, a 2-foot gravel cap with a marker/separation layer was assumed to be placed on the contaminated areas currently with gravel cover, with the same design characteristics described in Alternative A. This alternative includes the same level of annual cap inspections, maintenance, and repair activities as for Alternative A.

Alternative C uses MNA to address groundwater contamination at the Site. Under this alternative, groundwater monitoring will occur at select wells within the existing monitoring network at the Site in addition to some newly installed wells, for a 30-year period and sampling frequency, as assumed for Alternative A.

Engineering controls for vapor intrusion for VOCs and TPH and landfill gas collection system for methane will be required as described in Section 9.1.2.

Institutional controls will be required as described in Section 9.1.3.

Hotspot removal in the C Street Properties subarea is included in Alternative C, as described in Section 9.1.4.

Previously completed and ongoing interim actions/cleanups at the Site are included in Alternative C, as described in Section 9.1.5.

[35] Currently, a box culvert outfall is located where C Street (city right of way) ends to the west of the Site. The shoreline treatment system would be designed to accommodate this structure, while performing the anticipated remedial function.

The total estimated cost for Alternative C is $19,090,000, which includes capital, annual, and other costs for the three subareas ($8,155,000), site-wide costs ($1,004,000), and spent costs ($9,931,000) (Table 9-3). All costs are presented as net present value in 2017 dollars (Appendix I).

9.6 Alternative D

Alternative D consists of all of the cleanup action elements of Alternative C, with the addition of the following (Figure 9-4):

- *In situ* soil and groundwater treatment for the C Street Properties subarea

In Alternative D, the *in situ* soil and groundwater treatment for the C Street Properties subarea would be implemented in the form of an air sparging system. Injection of oxygen into groundwater through air sparging would reduce the concentrations of VOCs and TPH adsorbed onto soils and dissolved in groundwater, through a combination of volatilization and biodegradation, therefore decreasing contaminant migration into surface water and sediments. The air sparging system would consist of approximately 75 sparging wells for a total treatment area of 154,000 square feet, including the areas of the former Chevron bulk fuel terminal and the former coal storage and boat maintenance. Each sparge well would have a target zone of injection of 17.5 feet (approximately 10 feet below the seasonal low groundwater table) with an estimated radius of influence of 15 feet. The sparging system would be designed to operate at low pressure and low air flow rates to introduce oxygen into groundwater for enhanced biodegradation. Although some volatilization would likely occur, it is anticipated to be minimal, and extraction/capture of generated vapors during the aeration process would not be required (therefore, an SVE system is not deemed necessary). Pilot studies would need to be conducted to establish optimum air injection rates and confirm that the vapor emissions would be below the levels required by air regulations. The air sparging system would be operated for a period of 10 years; therefore, maintenance and vapor monitoring associated with this *in situ* treatment were included in Alternative D.

Capping in Alternative D would consist of physical barrier caps in the Hilton Avenue Properties, Landfill footprint, and C Street Properties subareas (including the area addressed by in situ soil and groundwater treatment), to address soil direct contact and erosion. For FS costing purposes, a 2-foot gravel cap with a marker/separation layer was assumed to be placed on the contaminated areas currently with gravel cover, with the same design characteristics described in Alternative A. This alternative includes the same level of annual cap inspections, maintenance, and repair activities as for Alternative A.

Alternative D uses MNA to address groundwater contamination at the Site. Under this alternative, groundwater monitoring will occur at select wells within the existing monitoring network at the Site in addition to some newly installed wells, for a 30-year period and sampling frequency, as assumed for Alternative A.

Engineering controls for vapor intrusion for VOCs and TPH and landfill gas collection system for methane will be required as described in Section 9.1.2.

Institutional controls will be required as described in Section 9.1.3.

Hotspot removal in the C Street Properties subarea is included in Alternative D, as described in Section 9.1.4.

Previously completed and ongoing interim actions/cleanups at the Site are included in Alternative D, as described in Section 9.1.5.

The total estimated cost for Alternative D is $20,512,000, which includes capital, annual, and other costs for the three subareas ($9,527,000), site-wide costs ($1,054,000), and spent costs ($9,931,000) (Table 9-3). All costs are presented as net present value in 2017 dollars (Appendix I).

9.7 Alternative E

Alternative E consists of all of the cleanup action elements of Alternative B, with the addition of the following (Figure 9-5):

- *In situ* soil and groundwater treatment for the C Street Properties subarea
- Groundwater barrier wall at the downgradient boundary of the Landfill footprint subarea

In Alternative E, the *in situ* treatment for the C Street Properties subarea would be implemented in the form of an air sparging system, reducing the concentrations of VOCs and TPH adsorbed onto soils and dissolved in groundwater, through a combination of volatilization and biodegradation, therefore decreasing contaminant migration into surface water and sediments. The air sparging system for Alternative E would have a similar conceptual design and operation as for Alternative D.

Alternative E assumed a slurry wall would be used to create a groundwater barrier wall, located along the downgradient boundaries of the Landfill footprint subarea. The slurry wall would be used to partially encircle the Landfill footprint subarea and contain and capture the upgradient contaminated groundwater. The base of the wall would be keyed in to the glacial marine till (approximately 30 feet bgs) to prevent groundwater migration to Bellingham Bay, and would be approximately 3 feet wide and 4,000 feet long. For FS costing purposes, it was assumed the trench would be filled with a soil-cement-bentonite (SCB) slurry, which provides a more rigid system that can support greater overlying loads with a maximum permeability of 1×10^{-6} centimeters per second.

Groundwater extraction wells would be installed upgradient of the barrier wall to maintain hydraulic control. Use of a barrier wall without a pumping system would result in groundwater mounding and is not recommended. A total of 14 groundwater extraction wells would be sited along the Landfill footprint subarea boundary to maintain groundwater heads slightly below those outside the barrier wall. Currently, the hydraulic conductivity ranges from 5 to 400 feet/day. For FS costing purposes, an average of 8,500 gallons per day (5.9 gallon/minute) was assumed; however, actual rates would vary seasonally and would depend on the performance of the groundwater barrier wall and cap system. Final remedy design would include revised estimates of groundwater pumping rates and specific control requirements for slurry wall installation. In addition, and based on existing groundwater quality data, the discharge of the extracted groundwater to the publicly owned treatment works is assumed without pre-treatment; however, appropriate permits from the publicly owned treatment works may require pre-treatment prior to discharge to the sanitary sewer.

Capping in Alternative E would consist of physical barrier caps in the Hilton Avenue Properties, Landfill footprint, and C Street Properties subareas, to address soil direct contact and erosion. For FS costing purposes, a 2-foot gravel cap with a marker/separation layer was assumed to be placed on the contaminated areas currently with gravel cover, with the same design characteristics described in Alternative A. This alternative includes the same level of annual cap inspections, maintenance, and repair activities, as for Alternative A.

Alternative E uses MNA to address groundwater contamination at the Site. Under this alternative, groundwater monitoring will occur at select wells within the existing monitoring network at the Site in addition to some newly installed wells, for a 30-year period and sampling frequency, as assumed for Alternative A.

Engineering controls for vapor intrusion for VOCs and TPH and landfill gas collection system for methane will be required as described in Section 9.1.2.

Institutional controls will be required as described in Section 9.1.3.

Hotspot removal in the C Street Properties subarea is included in Alternative E, as described in Section 9.1.4.

Previously completed and ongoing interim actions/cleanups at the Site are included in Alternative E, as described in Section 9.1.5.

The total estimated cost for Alternative E is $26,300,000, which includes capital, annual, and other costs for the three subareas ($15,265,000), site-wide costs ($1,104,000), and spent costs ($9,931,000) (Table 9-3). All costs are presented as net present value in 2017 dollars (Appendix I).

9.8 Alternative F

Alternative F consists of the following cleanup action elements (Figure 9-6):

- Demolition and removal of existing structures, buildings, and pavement
- Removal and stockpiling of overburden uncontaminated soil
- Full excavation of contaminated soils and refuse in the Hilton Avenue Properties, Landfill footprint, and C Street Properties subareas

- Transportation and off-site disposal of contaminated soils and refuse
- Backfill of the remedial excavation area with imported clean soil

Under Alternative F, all contaminated soils and refuse would be excavated in the Hilton Avenue Properties, Landfill footprint, and C Street Properties subareas, and transported to be disposed of in an off-site landfill. Any structures, buildings, pavement, or other construction material overlying excavation areas would be required to be demolished and/or removed prior to excavation activities, and these materials would be disposed of as construction debris. Soil and refuse removal would be accomplished with conventional excavation and soil handling equipment. For FS costing purposes, it was assumed that the top 2 feet of overburden soil would be clean; therefore, it would be stockpiled for on-site reuse. Soil confirmation testing would be performed to confirm the suitability of this clean stockpile soil for use as backfill. Subsurface soil excavation depths would vary depending on the subarea: an average of 9 feet bgs for the Hilton Avenue Properties subarea, an average of 23 feet bgs for the Landfill footprint subarea, and an average of 7.5 feet bgs for the C Street Properties subarea were assumed in this RI/FS, with an over-excavation depth of 1 foot. Soil confirmation sampling would be conducted to document soil concentrations of contaminants at the base and sidewalls of the excavation and to compare against cleanup levels to determine compliance. It was assumed that approximate 10 samples per acre would be sufficient to characterize the excavation area, and analyses would include metals, VOCs, PAHs, and TPH compounds.

Upon completion of excavation activities, the Site would be backfilled with uncontaminated fill material from a local borrow and compacted to allow for future redevelopment. Temporary shoring and water management would likely be required for subsurface soil excavations, especially along portions of Whatcom Waterway without bulkheads or barrier walls and I&J Waterway.

Groundwater MNA and engineering and institutional controls would not be required for Alternative F.

Hotspot removal in the C Street Properties subarea is included in Alternative F, as described in Section 9.1.4.

Previously completed and ongoing interim actions/cleanups at the Site are included in Alternative F, as described in Section 9.1.5.

The total estimated cost for Alternative F is $262,765,000, which includes capital, annual, and other costs for the three subareas ($252,334,000), site-wide costs ($500,000), and spent costs ($9,931,000) (Table 9-3). All costs are presented as net present value in 2017 dollars (Appendix I).

10 EVALUATION OF ALTERNATIVES

This section performs the comparative evaluation of the remedial alternatives for the cleanup of the Site, based on the MTCA evaluation criteria presented below.

10.1 MTCA Minimum Requirements

Under MTCA, remedial alternatives are evaluated within the framework of minimum requirements, including threshold requirements, other requirements, and additional minimum requirements, as specified in WAC 173-340-360.

10.1.1 MTCA Threshold Requirements

The four threshold requirements (WAC 173-340-360(2)(a)) for all cleanup actions are:

- Protect human health and the environment
- Comply with cleanup standards
- Comply with applicable state and federal laws
- Provide for compliance monitoring

All of the remedial alternatives developed and presented in this RI/FS are designed to meet the threshold requirements.

10.1.2 Other MTCA Requirements

After meeting the threshold requirements, MTCA requires that a remedial alternative meet three other requirements (WAC 173-340-360(2)(b)):

- **Use permanent solutions to the maximum extent practicable** (WAC 173-340-360(3)): MTCA specifies that when selecting a cleanup action, preference is given to permanent solutions to the maximum extent practicable. To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, MTCA requires that costs and benefits of each of the remedial alternatives be balanced using a DCA. The criteria for conducting this analysis are described in Section 10.2.

- **Provide for a reasonable restoration timeframe** (WAC 173-340-360(4)): MTCA places a preference on those alternatives that, while equivalent in other respects, can be implemented in a shorter period of time. Determining reasonable time to achieve cleanup standards based upon requirements and procedures in MTCA provides no specific reasonable restoration time requirement but allows for a comparison of restoration timeframes among the remedial alternatives.
- **Consider public concerns** (WAC 173-340-600): Public concerns will be addressed following the public comment period for the RI/FS.

10.1.3 MTCA Additional Requirements

Additional requirements (WAC 173-340-360(2)(c)(i), (e)(iii), (f), and (g)) are considered under MTCA for the evaluation of remedial alternatives:

- Require permanent groundwater cleanup actions, to achieve the cleanup levels for groundwater at the standard point(s) of compliance, where a permanent cleanup action is practicable
- Not rely primarily on institutional controls and monitoring, where it is technically possible to implement a more permanent cleanup action for all or a portion of the site
- Prevent or minimize present and future site releases and migration of hazardous substances
- Not rely primarily on dilution and/or dispersion, unless the incremental costs of any active remedial measures over the costs of dilution and dispersion grossly exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion

10.2 MTCA Disproportionate Cost Analysis

MTCA requires that remedial alternatives use permanent solutions to the maximum extent practicable. To evaluate practicality, MTCA considers cost effectiveness. Costs are disproportionate to benefits if the incremental costs of a more permanent remedial alternative are greater than the incremental degree of environmental benefits achieved by that alternative over that of lower cost remedial alternatives (WAC 173-340(3)(e)(i)). Remedial alternatives, which exhibit such disproportionate costs, are considered “impracticable”. This determination is made based on the DCA process in which: 1) the most practicable, permanent remedial alternative serves as the baseline; and 2) the benefits of the remedial alternatives to human health and the environment are evaluated and compared to the costs. Where the qualitative and quantitative benefits of two remedial alternatives are equivalent, MTCA specifies that Ecology will select the less costly alternative (WAC 173-340-360(e)(ii)(c)).

10.2.1 DCA Evaluation Criteria

The following criteria are used in completing a DCA under MTCA:

- **Protectiveness:** Overall protectiveness of human health and the environment includes the degree of overall risk reduction, the time required to reduce risk and attain cleanup levels, on-site and off-site risks resulting from implementing the alternatives, and the improved overall quality of the environment at a site.
- **Permanence:** The long-term success of an alternative can be measured by the degree to which an alternative permanently reduces the toxicity, mobility or volume of hazardous substances, including the originally impacted material and post-treatment residual materials.
- **Cost:** Cost considerations include design, construction, and installation costs; the net present value of long-term costs; and agency oversight costs. Long-term costs include operation and maintenance, monitoring, equipment replacement, and maintaining institutional controls.
- **Long-term Effectiveness:** An alternative's long-term effectiveness is based on the reliability of treatment technologies to meet and maintain cleanup levels and, if using engineering or institutional controls, on their reliability to manage residual risks. Long-term reliability is also influenced by uncertainties associated with potential long-term risk management.
- **Short-term Risk Management:** Short-term risk management evaluates the risk posed by the cleanup action during its implementation (including construction and operation), based on potential impacts to the community, workers, and the environment, and the effectiveness and reliability of protective or mitigative measures.
- **Implementability:** An alternative's implementability is evaluated on the basis of whether it is easy or difficult to implement depending on practical, technical, or legal

difficulties that may be associated with construction and implementation, including scheduling delays. The implementability also depends upon the ability to measure the remedy's effectiveness and its consistency with MTCA and other regulatory requirements.

- **Consideration of Public Concerns:** Potential public concerns, whether from individuals, community groups, local governments, tribes, and federal and state agencies, about a proposed cleanup alternative are addressed by means of MTCA's public involvement process during Ecology's remedy selection process.

10.2.2 DCA Weightings

The MTCA evaluation criteria presented in WAC 173-340-360 (3)(f) were weighted based on experience with similar projects and consistent with Ecology guidance. The weightings emphasize the core purpose of protecting human health and the environment and reflect site-specific considerations, such as the size, complexity, uncertainty, and potential restoration timeframes involved in the remedial alternatives. The sum of the weightings equals 100%.

"Protectiveness" represents the ultimate objective of implementing a remedial alternative. It considers many factors such as the extent to which human health and the environment are protected and the degree to which overall risks at the Site are reduced. Both on-site and off-site risks resulting from implementing the alternative are considered. Finally, it measures the improvement of the overall environmental quality at the Site. Therefore, overall protectiveness ratings were weighted 30%.

A weighting of 20% was assigned to the "permanence" criterion. In evaluating the remedial alternatives under this criterion, MTCA focuses on the degree that the toxicity, mobility, or volume of hazardous substances is reduced, and considers the extent to which contamination is removed from the Site rather than leaving it in place.

"Effectiveness over the long-term" is an important requirement because it addresses how well the remedy reduces risks, such as whether contamination is removed or left in place to be managed over the long-term, and whether controls are adequate to maintain protection against exposures to contamination left in place in the long-term. This criterion therefore received a weighting of 20%.

A weighting of 10% was assigned to the "management of short-term risk" criterion. This weighting considers the duration of the remedial alternatives, and therefore, the short-term risks to workers, the community, and the environment. Generally, short-term risks are actively monitored during the period the risks exist.

A weighting of 10% was assigned to the "technical and administrative implementability" criterion. This weighting reflects the fact that implementability is less associated with environmental concerns than with the relative difficulty and uncertainty of implementing the project. It includes both technical factors and the administrative factors associated with permitting and completing the cleanup.

Consideration of public concerns is assigned a weighting of 10%. This weighting reflects most public concerns that are embodied by the other criteria of the DCA. In other words, the degree of risk reduction, the long-term reliability, the community and environmental impacts during construction, and cost to the local economy embed and are all represented in public comments and in the other metrics of the DCA. It is acknowledged that all remedial alternatives have some public concerns.

Cost is not a weighted benefit but is used in the DCA to evaluate the benefit of each remedial alternative relative to its cost.

The remedial alternatives are ranked for each DCA criterion with the lowest score of 1 (indicating the criterion is satisfied to a very low degree) and the highest score of 10 (indicating the criterion is satisfied to a very high degree). For each remedial alternative, these ratings are then weighted and summed for an overall environmental score of the benefits achieved.

The benefit-to-cost ratio is a relative measure of the cost effectiveness of the remedial alternative. It was obtained by dividing the remedial alternative's overall environmental benefit score by its estimated total cost (on a net present value basis, as 2016 dollars).

10.3 Comparative Evaluation of Alternatives

This section presents the comparative evaluation of the remedial alternatives (described in Section 9) against the MTCA minimum requirements and DCA criteria. A preferred remedial alternative under MTCA is therefore identified in Section 11.

10.3.1 Evaluation with Respect to MTCA Threshold Requirements

The six remedial alternatives are evaluated for compliance with the MTCA threshold criteria in this section. Evaluation results are summarized in Table 10-1.

10.3.1.1 Protection of Human Health and the Environment

Alternatives A through E achieve the protection of human health and the environment through a combination of: 1) hotspot removal in the C Street Properties subarea; 2) capping; 3) groundwater MNA; 4) groundwater diversion by the clay berm and ASB water levels; 5) vapor intrusion/landfill gas controls; 6) targeted groundwater treatment in the southeastern boundary of the C Street Properties and the western shoreline of the C Street Properties and/or Landfill footprint subareas; 7) *in situ* soil and groundwater treatment in the C Street Properties subarea; 8) groundwater barrier wall in the Landfill footprint subarea; and 9) institutional controls. These actions are intended to eliminate a soil source of contaminants, limit direct contact and soil erosion, reduce groundwater generation by preventing infiltration, prevent groundwater contamination that migrates into sediments and surface water, and address soil gas/vapor intrusion.

Alternative F provides protection of human health and the environment through full excavation of all contaminated soils and refuse in the three subareas eliminating all sources of soil and groundwater contamination.

10.3.1.2 Compliance with Cleanup Standards

Alternatives A through E would comply with soil cleanup standards through containment and/or treatment of soils exceeding cleanup levels, and would comply with groundwater cleanup standards through natural attenuation and/or treatment throughout the Site.

Alternative F would achieve cleanup standards upon completion of remedy construction, through contaminated soil removal and off-site disposal.

10.3.1.3 Compliance with Applicable State and Federal Laws

All remedial alternatives will comply with applicable state and federal laws identified in Section 7.2. Institutional controls will be addressed in detail as part of the CAP, Consent Decree, and project implementation measures.

10.3.1.4 Provisions for Compliance Monitoring

All six remedial alternatives provide for compliance monitoring.

Alternatives A through E include groundwater compliance monitoring for an assumed period of 30 years with semiannual, annual, and potentially less frequent sampling events. These remedial alternatives also include cap monitoring, maintenance, and inspection.

Alternative F includes confirmational soil sampling to verify removal of all impacted soil and refuse.

10.3.1.5 Conclusion

All remedial alternatives meet threshold requirements and are carried forward to the detailed evaluation.

10.3.2 Evaluation with Respect to MTCA Other Requirements

10.3.2.1 Provisions for a Permanent Solution to Maximum Extent Practicable

To determine whether the remedial alternatives use permanent solutions to the maximum extent practicable, costs and benefits of each are balanced using a disproportionate cost analysis with the evaluation of the six criteria described in Section 10.2.1. The DCA results are presented in Table 10-2 and discussed in Section 10.3.4.

10.3.2.2 Provisions for a Reasonable Restoration Timeframe

A cleanup action is considered to have achieved restoration once cleanup standards have been met. As discussed in Section 10.3.1.2, all remedial alternatives are expected to comply with cleanup standards.

The restoration timeframe for Alternatives A through C is the time to meet groundwater cleanup levels at the standard points of compliance throughout the C Street Properties subarea,[36] which is estimated to be between 20 and 25 years (see Appendix H for supporting information on ongoing natural attenuation in this subarea). The *in situ* soil and groundwater treatment under Alternative D would shorten the restoration timeframe to approximately 10 years (assumed to be equivalent to the operation of the air sparging system), due to the volatilization of contaminants adsorbed to soils and dissolved in groundwater, and enhanced biodegradation with the oxygen injection. In addition to the *in situ* treatment, the groundwater barrier wall under Alternative E would contribute to a shorter 5-year restoration timeframe, resulting from containment of most upgradient contaminated groundwater migrating from the Landfill footprint into the C Street Properties subareas. For Alternative F, the restoration timeframe is assumed to be equal to the implementation timeframe (solely driven by the excavation rate), which is estimated between 2 and 3 years.

WAC 173-340-360(4)(b) provides a list of factors to be considered in determining whether a cleanup action provides for a reasonable restoration timeframe. Table 10-3 presents an evaluation of the remedial alternatives with respect to these factors. Based on that evaluation, all remedial alternatives are expected to provide for a reasonable restoration timeframe.

10.3.2.3 Consideration of Public Concerns

All of the remedial alternatives have some public concerns. Public concerns will be addressed following the public comment period for the RI/FS.

[36] However, conditional points of compliance may be defined at the north and south Landfill perimeters, between the area of known contamination (Landfill footprint) and the shorelines.

10.3.3 Evaluation with Respect to MTCA Additional Requirements

Alternatives A through E will require groundwater MNA with the required performance monitoring of groundwater quality and confirmation of continued attainment of cleanup levels at the designated point of compliance. Alternative F will require confirmational soil sampling to verify removal of all impacted soil and refuse. Therefore, no additional permanent groundwater cleanup actions are necessary.

Institutional controls are not the primary remedial action for Alternatives A through E, but rather are used to limit groundwater usage and to ensure that the protection and integrity of the remedy elements. Alternative F does not include any institutional controls in its remedial scope.

Present and future releases and migration of contaminants in the environment will be prevented and minimized by all remedial alternatives, based on the various combinations of engineering and institutional controls in their remedial scopes.

None of the remedial alternatives rely primarily on dilution and/or dispersion.

10.3.4 MTCA DCA

Table 10-2 presents a detailed summary of the qualitative DCA evaluation criteria for each of the remedial alternatives. The DCA also provides the relative rankings of the environmental benefits assigned to each remedial alternative (with 1 representing the lowest score, indicating a criterion that is satisfied to a very low degree, and 10 representing the highest score, indicating a criterion that is satisfied to a very high degree), the weighted scores (based on weightings presented in Section 10.2.2), the overall environmental benefit scores, total costs (as net present value), and the resulting benefit-to-cost ratios. This section identifies the recommended remedial alternative for the Site, consistent with MTCA requirements and assumptions for the various remedial alternatives.

10.3.4.1 Overall Protectiveness

All remedial alternatives are protective of human health and the environment and improve the overall environmental quality by reducing the long-term risks to varying degrees, based on the technologies used to achieve that protectiveness. Alternative F is potentially the most protective (score of 10) because it would likely meet the soil and groundwater cleanup levels throughout the Site immediately after construction (through Site-wide removal and off-site disposal of contaminated soils and refuse) and provides the highest level of certainty that protectiveness will be maintained in the long term. However, some on-site and off-site short-term risks (associated with excavation and transport of the soils/refuse resulting from implementing this remedial alternative) may be increased and may outweigh the long-term risk reduction.

Alternatives A through E are also protective as they would likely meet the soil and groundwater cleanup levels throughout the C Street Properties subarea over time. These alternatives would have increasing degrees of protectiveness (scores varying from 5 to 9) of the potential exposure pathways, through a combination of hotspot removal in the C Street Properties subarea, capping, groundwater MNA, groundwater diversion by the clay berm and ASB water levels, vapor intrusion/landfill gas controls, targeted groundwater treatment in the C Street Properties and/or Landfill footprint subareas, *in situ* soil and groundwater treatment in the C Street Properties subarea, groundwater barrier wall in the Landfill footprint subarea, and institutional controls.

10.3.4.2 Permanence

Alternative F is considered the most permanent alternative (score of 10) because all contaminated soils and refuse would be removed from the Site and contained in an off-site engineered landfill. With this alternative, contaminant mobility would be addressed, but not toxicity or volume (although contaminants may continue to naturally attenuate in the landfill).

Alternatives A through E would permanently reduce mobility of the contaminants with highest TPH concentrations in soil, through the hotspot removal in the C Street Properties subarea. Mobility via erosion is also effectively addressed in these alternatives via capping, and institutional controls would be implemented to protect the integrity of the caps and provide for periodic inspection and maintenance.

Natural attenuation is already effectively reducing groundwater contaminant mass in the C Street Properties subarea, and would continue to do so in Alternatives A through E. In addition, the targeted groundwater treatment in these alternatives would reduce contaminant mass and toxicity in groundwater in: 1) the southeastern portion of the C Street Properties as it migrates from the former Colony Wharf into surface water and sediments (Alternative A); and 2) the western shoreline of the C Street Properties as it migrates from the Landfill footprint and the C Street Properties subareas, through the PRB, and into surface water and sediments (Alternatives B through E). Also, Alternatives D and E include an additional permanent element (*in situ* soil and groundwater treatment) that destroys contaminants in soil and groundwater, reducing their toxicity, mobility, and volume. Contaminant mobility in groundwater would be significantly reduced by the groundwater barrier wall in Alternative E, capturing upgradient contaminated groundwater migrating from the Landfill footprint into the C Street Properties subareas.

Based on the above considerations, Alternatives A through E were scored increasingly from 5 to 9, for the permanence criterion.

10.3.4.3 Long-Term Effectiveness

Alternative F has the highest certainty for long-term effectiveness (score of 10) because all contaminated soils and refuse would be removed from the Site, eliminating all sources of contamination and any residual risk.

For Alternatives A through E, the hotspot removal provides long-term effectiveness for the C Street Properties subarea. These alternatives would rely on the long-term groundwater monitoring, cap inspection/maintenance/repairs, and institutional controls to ensure reliability and effectiveness of management of any residual risks.

In addition, the clay berm and ASB water level groundwater diversion wall in Alternatives A and B and the targeted treatment in Alternatives A, B, C, D, and E would effectively reduce groundwater contamination in the long-term, because it would treat metals and TPH before migrating into surface water and sediments. Also, Alternatives D and E include *in situ* soil and groundwater treatment, which would effectively volatilize contaminants adsorbed to soil and/or dissolved in groundwater over time. The groundwater barrier wall in Alternative E would be an additional element of long-term effectiveness, by capturing upgradient contaminated groundwater from migrating into the C Street Properties subarea.

Based on the above considerations, Alternatives A through E were scored increasingly from 6 to 9, for the long-term effectiveness criterion.

10.3.4.4 Short-Term Risk Management

Alternative A is the alternative with the highest score (9) for short-term risk management because there are minimal short-term risks (e.g., worker safety, dust and erosion control) associated with capping and hotspot removal and some short-term risks associated with the construction of the contingent targeted groundwater treatment in the southeastern boundary of the C Street Properties subarea. Alternatives B through E have some short-term risks associated with the construction of an additional (and longer) targeted groundwater treatment in the western shoreline of the C Street Properties subarea, but the overall potential risks to human health and the environment as a result of construction and implementation are not substantial. Alternatives D and E have slightly more short-term risks associated with installation of the *in situ* soil and groundwater treatment system because of worker safety; however, best management practices would be implemented to control these risks through planning and oversight. Alternative E has some short-term risks associated with the construction of the groundwater barrier wall in the Landfill footprint subarea, because the barrier wall will require trenching during installation; existing utilities would need to be located to allow the slurry wall to be installed around them.

Alternative F includes extensive excavation and intrusive activities, posing the most potential short-term risks associated with implementation. Dewatering and soil management, transport, and off-site disposal would be critical components of this work because large excavations would occur along the shorelines and within the Landfill footprint and C Street Properties subareas. Additional risks of exposure (airborne contaminants and dust) would be created due to transportation of soils through the community and for long distances; local truck traffic could be impacted. However, these risks can be minimized with pre-mobilization planning, oversight, and close implementation management.

Based on the above considerations, Alternatives B, C, D, and E were scored 8, 6, 5, and 4, respectively. Alternative F was scored with the lowest score (1) for the short-term risk management criterion.

10.3.4.5 Technical and Administrative Implementability

Alternative A is the easiest to implement (score of 9). Low to moderate technical challenges for Alternatives A through E are associated with extensive capping in the three subareas and the hotspot removal. Some administrative challenges are anticipated regarding the effective implementation of institutional controls, if parcels are sold.

Moderate technical challenges are anticipated for Alternatives A through E, related to the installation of the targeted groundwater treatment, because it will require extensive work along the western Site shoreline and southeastern Site boundary, and accommodating for existing utilities and other structures; shoreline permitting for the PRB could imply some administrative challenges (also increased by the PRB length). Minor challenges are anticipated for Alternatives D and E in relation to the installation of the *in situ* soil and groundwater treatment system in the C Street Properties subarea, which could be accomplished with conventional drilling equipment. Based on the above considerations, Alternatives B, C, D, and E were scored 8, 5, 4, and 3, respectively.

Alternative F was scored the lowest (1) for implementability because the magnitude and complexity of earthwork would be technically, logistically, and administratively difficult.

10.3.4.6 Consideration of Public Concerns

All of the remedial alternatives have some public concerns. Past public concerns and comments received for projects adjacent to and/or near the Site provide a basis for the public concern scores assumed in the DCA. Alternative F would be expected to be the most desirable by the public because it is the most permanent alternative and involves full excavation and off-site disposal of contaminated soils and refuse from the Site. It ensures protection of human health and the environment over the long-term and eliminates all sources of contamination; however, public concerns may be significantly higher for short-term risks due to the invasive nature of excavation and increase of local traffic when transporting materials off site for disposal.

It is anticipated that Alternatives A through E achieve the protection of human health and the environment through a combination of cleanup action elements. These alternatives would address public concerns related to maintaining the long-term integrity of the existing cap, and therefore, preventing waste migration. In addition, the incremental cleanup action elements (groundwater MNA, clay berm and ASB water levels groundwater diversion wall, vapor intrusion/landfill gas controls, targeted groundwater treatment, *in situ* soil and groundwater treatment, and groundwater barrier wall) would address public concerns seeking long-term protection against groundwater migration into surface water and sediments and exposure to contaminated soil.

Based on the above considerations, Alternatives A through F were scored incrementally from 1 to 10. Public concern scores will be adjusted if necessary following the public comment period for the RI/FS.

10.3.4.7 Environmental Benefit Score, Total Costs, and Benefit-to-Cost Ratios

The overall environmental benefit score, estimated total costs, and benefit-to-cost ratios for the six remedial alternatives are presented in Table 10-2. Figure 10-1 depicts a graphic summary of the DCA and compares overall environmental benefits and estimated total costs of each remedial alternative relative to Alternative F, which represents the most permanent remedial alternative. Consistent with MTCA requirements, Alternative F serves as the baseline against which the relationship between incremental remedy benefits and incremental costs are evaluated.

Overall, environmental benefits resulted in a similar range of scores: 5.6 (Alternative A), 6.1 (Alternative B), 6.5 (Alternative C), 7.4 (Alternative D), 7.9 (Alternative E), and 8.2 (Alternative F). The estimated total costs of the remedial alternatives under consideration ranged from $13.5 million to $263 million.[37] These costs are expressed in 2017 dollars on a net present value basis, using a 0.7% discount factor.

[37] The expected accuracy for FS-level costs range from +50% to – 30% around these probable cost estimates.

As the most permanent remedial alternative, Alternative F presents a relatively high environmental benefit score due to its high degree of overall protectiveness, permanence, and long-term effectiveness (these criteria account for 70% of the total DCA weighing), but with corresponding high total costs, being the most expensive remedial alternative evaluated in this RI/FS. Incremental costs associated with Alternative F are considered disproportionate over the other remedial alternatives for the relatively similar environmental benefits achieved. This is also reflected in the lowest benefit-to-cost ratio (which is a relative measure of cost-effectiveness) among all the remedial alternatives, with a benefit score per million dollars of 0.03 for Alternative F.

Similar to Alternative F, Alternatives D and E are equivalent in qualitative and quantitative benefits (i.e., same range of overall environmental benefits scores from 7.4 to 7.9), but because MTCA specifies that the less costly remedial alternative (relative to benefit) should be selected (WAC 173-340-360(3)(e)(ii)(c)), these remedial alternatives do not rank as high as Alternatives A through C.

The remaining remedial alternatives in the evaluation are Alternatives A through C. Of these three remedial alternatives, Alternative A provides the highest benefit-to-cost ratio of 0.41 (per million dollars), based on a good overall environmental benefit score (5.6) and relative low total cost ($13.5 million). This remedial alternative provides for distinguishable environmental benefits in the short-term (through elimination of a major soil source of contaminants [e.g., hotspot removal in the C Street Properties subarea and previously completed and ongoing interim actions/cleanups]) and easy technical and administrative implementability. The overall protectiveness, permanence, and long-term effectiveness of Alternative A are comparable to Alternatives B and C, because they all would likely meet the soil and groundwater cleanup levels throughout the C Street Properties subarea over time, but with additional costs for Alternatives B and C and little added environmental benefit. Alternative A would be dependent on groundwater and cap compliance monitoring and would need institutional controls to remain in place to ensure reliability and effectiveness of management of any residual risks.

10.3.4.8 DCA Conclusion

Based on the analysis of disproportionate costs, Alternative A is the most cost-effective of the six remedial alternatives evaluated in the RI/FS. Therefore, Alternative A meets the MTCA threshold requirements and the definition of permanent to the maximum extent practicable, per WAC 173-340-360(3)(e), because cleanup standards are achieved.

11 SUMMARY AND CONCLUSIONS

The Central Waterfront RI/FS is a combined effort that aided in delineating current Site conditions (such as physical characteristics, source areas), defining the nature and extent of impacted media and potential contaminant migration pathways, and developing six remedial alternatives with the objective to protect human health and the environment. The remedial alternatives were evaluated with respect to criteria defined by MTCA, including a comparative analysis to determine the relative environmental benefits and associated estimated costs of each, so that the most permanent solution to the maximum extent practicable is established. This section presents the preferred alternative based on these evaluations.

11.1 Preferred Remedial Alternative

This section presents the preferred cleanup alternative for the Site. The actual cleanup remedy will be selected in the CAP developed by Ecology and may vary from the preferred cleanup alternative described herein.

Alternative A was identified in the DCA (Section 10.3.4) as the remedial alternative that is permanent to the maximum extent practicable for the Site and is, therefore, the preferred remedial alternative. The preferred remedial alternative consists of the following cleanup action elements:

- Reduced-permeability caps in the Landfill footprint and in the C Street Properties subareas that limit infiltration of surface water and mobility of contaminants into groundwater and prevent direct contact and erosion
- Physical barrier cap in the Hilton Avenue Properties subarea, to control the soil direct contact exposure and soil erosion pathways for contaminated soils, currently exceeding soil cleanup levels for an unrestricted land use
- Clay berm/ASB water level groundwater diversion wall on the western boundary of the Landfill footprint subarea
- Contingent targeted groundwater treatment on the southeastern portion of the C Street Properties subarea to prevent metal-contaminated groundwater from migrating into surface water and sediments

- Groundwater MNA through performance sampling, to address residual contamination in groundwater that exceeds applicable groundwater cleanup standards
- Engineering controls constructed beneath existing and future buildings for vapor intrusion for contaminants in soil vapor and groundwater and a landfill gas collection system for methane, to prevent the inhalation
- The use of appropriate institutional controls, including a prohibition on consumptive use of groundwater, restrictions to protect and maintain remedy elements and provide for long-term monitoring and stewardship of the cleanup action, and notification requirements
- Hotspot removal in the C Street Properties subarea, transportation, and off-site disposal of soils exceeding the TPH remediation level of 19,000 mg/kg
- Previously completed and ongoing interim actions/cleanups at the Site

The preferred remedial alternative design concept is presented in Figure 9-1. It is anticipated that the preferred remedial alternative will comply with soil cleanup standards upon completion of remedy design and construction (estimated at 1 to 2 years) and will comply with groundwater cleanup standards throughout the Site between 20 to 25 years. The total estimated cost for the preferred remedial alternative is $13.5 million.

12 REFERENCES

AECOM, 2012. Memo to: Brian Sato, Department of Ecology. Re: Central Waterfront RI/FS Work Plan Addendum 2. April 13, 2012.

AGRA, 1995. *Limited Geotechnical Engineering Evaluation, Chevron Terminal, Bellingham, Washington*. Prepared for Chevron. June 1995.

Anchor Environmental (Anchor Environmental, L.L.C.), 2000. *Bellingham Bay Comprehensive Study: Final EIS*. Prepared for Washington State Department of Ecology.

Anchor QEA (Anchor QEA, LLC), 2010. Pre-Remedial Design Investigation Data Report – Whatcom Waterway Cleanup Site. Prepared for the Port of Bellingham.

Anchor QEA, 2012a. Letter to: Lucy McInerney, Department of Ecology. Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan Addendum No. 3. July 2, 2012.

Anchor QEA, 2012b. *Interim Action Work Plan, Central Waterfront Site, Chevron Subarea*. Prepared for the Port of Bellingham. September 2012.

Anchor QEA, 2012c. Letter to: Lucille McInerney, Department of Ecology. Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan Addendum #4 Supplemental Central Waterfront Shoreline Design Investigation. October 19, 2012.

Anchor QEA, 2012d. Letter to: Brian Sato, Washington State Department of Ecology. Re: Central Waterfront Interim Action Work Plan Amendment No. 1 RI/FS Work Plan Addendum #5. October 23, 2012.

Anchor QEA, 2013a. *Completion Report Central Waterfront Site Chevron Subarea Interim Action*. Prepared for the Port of Bellingham. June 2013.

Anchor QEA, 2013b. Letter to: Brian Sato, Washington State Department of Ecology. Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan Addendum #6. October 18, 2013.

Anchor QEA, 2015. Final Engineering Design Report Whatcom Waterway Cleanup in Phase 1 Site Areas. Prepared for the Port of Bellingham. February 2015.

Anchor QEA, 2016a. Interim Action Work Plan, Central Waterfront Site, All American Marine Building and C Street Terminal. Prepared for the Port of Bellingham. March 2016.

Anchor QEA, 2016b. Letter to: Brian Sato, Washington State Department of Ecology. Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan Addendum #7. July 8, 2016.

Anchor QEA, 2016c. Letter to: Brian Sato, Washington State Department of Ecology. Re: Central Waterfront Site – Agreed Order No. DE 3441 – RI/FS Work Plan Addendum #8. November 10, 2016.

Anchor QEA, 2017. Memorandum: I&J Waterway Site-Specific Nickel AET. Prepared for Lucy McInerney, Washington State Department of Ecology. March 24, 2017.

Bentall, R., 1963. Methods of determining permeability, transmissibility, and drawdown. U.S. Geological Survey Water-Supply Paper 1536-I, p. 272-282 and 331-340.

Blumen and Associates, 2008. New Whatcom Redevelopment Project Draft Environmental Impact Statement. Prepared for the Port of Bellingham. January 2008.

Echelon Engineering, Inc., 2012. *Inspection and Assessment of Bornstein Wharf and Bulkhead, Bellingham, WA*. Prepared for Anchor QEA, LLC. July 2012.

Ecology (Washington State Department of Ecology), 2005. Guidance on Remediation of Petroleum-Contaminated Ground Water by Natural Attenuation. Toxics Cleanup Program Publication No. 05-09-091 (Version 1.0). July 2005.

Ecology, 2009. Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action. October 2009.

Erskine, A.D., 1991. The Effect of Tidal Fluctuation on a Coastal Aquifer in the UK. *Ground Water* Vol. 29, No. 4:556-62. July-August 1991.

Federal Programs, 2015. Circular A-94. Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs. Office of Management and Budget, White House. November 2015. Available from: https://www.whitehouse.gov/omb/circulars_a094/a94_appx-c

GeoEngineers, 1990. *Phase 1 Environmental Site Assessment. Colony Wharf Site, Bellingham, Washington*. Prepared for Bellingham Marine Industries. May 1990.

GeoEngineers, 1992. *Phase 2 Environmental Site Assessment, Bellingham Marine Industries, Bellingham, Washington.* March 1992.

GeoEngineers, 1998. *Environmental Site Assessment, Proposed Squalicum Peninsula Project, Bellingham, Washington.* Prepared for Port of Bellingham. November 24, 1998.

GeoEngineers, 2000. *Subsurface Exploration and Chemical Testing, Former Army Reserve Site, Hilton and Roeder Avenues, Bellingham, Washington.* Prepared for Port of Bellingham. December 7, 2000.

GeoEngineers, 2002. *Results of Waterfront Material Characteristics and Limited Metals Assessment*. Prepared for B.C. Investment Corporation. October 2002.

Harding Lawson Associates, 1995. *Soil, Sediment, and Groundwater Investigation.* U.S. Coast Guard Olivine Site, Bellingham, Washington. Prepared for the U.S. Coast Guard.

KHM, 2002. *Remedial Investigation Workplan, Chevron Products Company, Former Bulk Plant 100-1350, 1020 C St., Bellingham, Washington*. May 2002.

Landau, 1994. Environmental Assessment of the Former Olivine Site. Prepared for the U.S. Coast Guard.

Merit, 1996. Glacial Marine Drift

PacRim (PacRim Geotechnical), 1997. Sand Unit interpretation

Port (Port of Bellingham), 2010. *The Waterfront District Redevelopment Project (formerly known as New Whatcom) Final EIS*. July 2010.

Port, 2012. *The Waterfront District Redevelopment Project EIS Addendum*. December 2012.

Port/City (Port of Bellingham/City of Bellingham), 2013. *The Waterfront District Sub-Area Plan.*

RETEC, 1996. *Feasibility Analysis for the Roeder Avenue Warehouse Project: Phase 1 – Framework for Decision-Making.* Prepared for Port of Bellingham. Seattle, WA: Remediation Technologies.

RETEC, 1997. *Pre-Design Testing Report for the Roeder Avenue Warehouse Project.* Prepared for Port of Bellingham. Seattle, WA: Remediation Technologies.

RETEC, 2007a. *Draft Central Waterfront RI/FS Sampling and Analysis Plan and Quality Assurance Project Plan*. Prepared for the Port of Bellingham by The RETEC Group, Inc. and S.S. Papadopulos & Associates. March 2007.

RETEC, 2007b. Letter to: Phil Kovacs, Washington State Department of Ecology. Re: Central Waterfront RI/FS Work Plan Addendum. July 17, 2007.

Tetra Tech, 1996. Letter to: John Vogel, U.S. Coast Guard FD&CC. Re: Results of Test Pit Sampling, USCG Station Bellingham Relocation, Contract No. DTCG50-94-D0643R10, TC No. 0908-01. April 17, 1996.

ThermoRetec, 2001. Remedial Investigation and Feasibility Study, Roeder Avenue Landfill. Prepared for the Port of Bellingham. Seattle, Washington. October.

Toy, K.A., N.L. Polissar, S. Liao, and G.D. Mittelstaedt, 1996. A fish consumption survey of the Tulalip and Squaxin Island tribes of the Puget Sound region. Tulalip Tribes, Department of Environment, Marysville, Washington. October 1996.

USEPA (U.S. Environmental Protection Agency), 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*. USEPA Federal Register Notice (FRL-7414-4). Volume 67, Number 230. November 29, 2002.

WCEC (West Central Environmental Consultants), 2000. *Work Plan for a Remedial Investigation/Feasibility Study at the Olivine Site at Hilton Avenue*. Prepared for the Port of Bellingham by West Central Environmental Consultants, Inc. June 8, 2000.

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Summary of Environmental Studies for the Central Waterfront Site

Site Area/Study	Date	Author	Well Logs	Description/Comments
Central Waterfront Site-wide				
Historical Ground Water Monitoring Data Analysis: Bellingham Bay Central Waterfront Site	12/2/2003	Ecology	No	Washington State Department of Ecology Technical Memorandum - groundwater data analysis
Central Waterfront Agreed Order	9/26/2006	Ecology	No	Agreed Order
Central Waterfront RI/FS Work Plan-DRAFT	3/9/2007	RETEC	No	Draft RI/FS Work Plan
Central Waterfront RI/FS Work Plan Addendum	7/17/2007	ENSR/AECOM	No	Work Plan Addendum
Draft RI/FS for the Central Waterfront Site	8/2009	AECOM	Yes	Draft AECOM RI/FS report submittal to Ecology
Quality Assurance Evaluation of Central Waterfront RI/FS	1/16/2012	AECOM	No	Quality assurance review of RI/FS following cost error findings in spreadsheets
Central Waterfront Agreed Order Amendment	7/12/2012	Ecology	No	Agreed Order amendment for Chevron area interim action
RI/FS Work Plan Addendum No. 2 for the Central Waterfront Site	04/13/12	AECOM	No	Work Plan Addendum for beach test pits and borings to investigate sheen and scope Chevron area interim action
Technical Memorandum for Central Waterfront RI/FS Work Plan Addendum No. 2	8/30/2012	AECOM	Yes	Technical Memorandum presenting results of beach investigation performed in accordance with RI/FS Work Plan Addendum No. 2
RI/FS Work Plan Addendum No. 3 for the Central Waterfront Site	July 2012	Anchor QEA	No	Work Plan Addendum for Supplemental Shoreline Investigation
Interim Action Work Plan, Central Waterfront Site, Chevron Subarea	9/27/2012	Anchor QEA	No	Interim Action Work Plan to excavate and remove NAPL petroleum and petroleum-impacted soil and sediments from the Chevron subarea beach to prevent petroleum sheen on Whatcom Waterway
Supplemental Central Waterfront Shoreline Investigation Work Plan Addendum No. 4	10/19/2012	Anchor QEA	No	Work Plan for Central Waterfront Shoreline Geotechnical Investigation
Central Waterfront RI/FS Work Plan Addendum No. 5	10/23/2012	Anchor QEA	No	Technical Memorandum providing technical support for use of silica gel cleanup before determining diesel range TPH concentrations in site soil and groundwater
Whatcom Waterway Engineering Design Report	Feb 2013	Anchor QEA	No	Design report for Whatcom Waterway that includes Central Waterfront Investigations
Central Waterfront Supplemental Investigation	Feb 2013	Anchor QEA	No	Appendix H to the Whatcom Waterway Engineering Design Report. Presents results of July 2012 supplemental investigation at Central Waterfront.
Results of Additional Geotechnical and Environmental Testing Along the Central Waterfront Site	Feb 2013	Anchor QEA	No	Appendix M to the Whatcom Waterway Engineering Design Report. Presents results of July 2012 supplemental investigation at Central Waterfront.
Completion Report, Central Waterfront Site, Chevron Subarea Interim Action	6/5/2013	Anchor QEA	No	Completion Report documenting Chevron beach area interim action activities and completion

Table 2-1
Summary of Environmental Studies for the Central Waterfront Site

Site Area/Study	Date	Author	Well Logs	Description/Comments
Central Waterfront RI/FS Work Plan Addendum No. 6	10/1/2013	Anchor QEA	No	Work Plan Addendum for Data Gaps Investigation to support the Draft RI
Former Chevron Terminal				
Report of Geotechnical Services – Diesel Fuel Leak	12/16/1986	GeoEngineers	Yes	Reports site conditions and recovery system construction/monitoring. Completion of 5 borings and monitoring wells (MW-1 to MW-7). Well construction table for shallow wells installed by hand auger.
Subsurface Explorations and Testing	3/18/1987	GeoEngineers	Yes	Subsurface testing including monitoring well installation and 18 borings, including 9 hand auger and 9 truck mount. 18 monitoring wells installed (MW-8 to MW-25).
Subsurface Contamination Investigation	1988	GeoEngineers	Yes	Subsurface testing including monitoring well installation
Phase-Separated Hydrocarbon Recovery Operations And Subsurface Exploration	9/1989	Thorne Environmental	Yes	Subsurface testing including monitoring well installation and product recovery testing. Installed 10 monitoring wells and completed 5 soil borings for sampling (MW-33 to MW-42 and B-1 to B-5). Two samples analyzed for PCBs (B-2, B-5) at non-detect concentrations (Aroclors).
Results of Biotreatability Investigation: Proposed In-Situ Bioremedial Soil and Water Cleanup	1/17/1990	Thorne Environmental	No	Biotreatability testing results
Comprehensive Soil and Groundwater Remediation Plan Volume 1	6/12/1990	Thorne Environmental	Yes	Summary of previous environmental work and site conditions. Includes MW-26 to MW-32 and MW-42 to MW-45 well logs.
Comprehensive Soil and Groundwater Remediation Plan Volume 2	6/12/1990	Thorne Environmental	No	Summary of remedial activities including excavation, on-site biotreatment, product recovery, and monitoring
Status Update: July 1990	8/20/1990	Thorne Environmental	No	Groundwater and product monitoring/recovery
Status Update: August 1990	9/12/1990	Thorne Environmental	No	Groundwater and product monitoring/recovery
Early Notice Letter - Port of Bellingham/ Chevron	1/17/1991	Ecology	No	Ecology early notice letter
Surface Soil Sampling Activities and Analytical Results	1/28/1991	Thorne Environmental	No	Dock and South Tank area surface soil sampling results (locations DAS-1 to DAS-5). Investigation initiated from heavy equipment storage and maintenance
Draft - Excavation and Biotreatment Cell Construction/Operation Specifications	3/1991	Thorne Environmental	Yes	Summary of excavation and biotreatment activities
Seawall Investigation and Recommendations	6/28/1991	Applied Geotechnology	Yes	Test pit investigation along Whatcom Waterway . Logs for test pits TP-3 and TP-4 and observations of hydrocarbon contamination.
Plan for Importing Soil	7/11/1991	Applied Geotechnology	No	Soil excavation and backfill

Table 2-1
Summary of Environmental Studies for the Central Waterfront Site

Site Area/Study	Date	Author	Well Logs	Description/Comments
Draft - Site Investigations - June and September 1991	6/1/1992	Applied Geotechnology	Yes	Soil investigation including test pits and hand augers. 38 test pits and 5 hand augers completed. Analytical results for test pits TP-23 to TP-38 and HA-1 to HA-5. Test pit logs for all test pits - includes hydrocarbon observations at those locations where samples were not analyzed.
Proposed Plan of Action - Site Restoration	10/7/1993	Applied Geotechnology	No	Summary of treated soil reuse options
Draft - Site History	11/16/1993	Applied Geotechnology	No	Summary of history to date - 1993
Limited Geotechnical Engineering Evaluation	6/22/1995	AGRA Earth & Environmental	Yes	Geotech engineering evaluation re: excavation backfill (logs for MW-5A , MW-6A, MW-8A, MW-10A and MW-12A available)
Additional Site Assessment and Project Status Update	6/28/1995	AGRA Earth & Environmental	Yes	Review of previous environmental work (investigation/cleanup), identification of data gaps, and additional investigation work. Installed MW-1A to MW-12A monitoring wells with analytical results - TPH, BTEX, and PAH-soil and groundwater.
Summary of Backfill and Leveling Operations	1/8/1996	AGRA Earth & Environmental	No	Excavation backfill summary
Spill at Property located at 1020 C Street	8/20/1997	Ecology	No	Response to spill observed in Bellingham Bay. Includes checklist and reporting information.
Response Activities - Soil Probe Investigation	9/3/1997	Pacific Environmental Group	Yes	Test pit and temporary probe borings to investigate "oil seep" at shoreline. 32 temporary soil probes completed (P-1 to P-19 and SP-1 to SP-13). No analytical sampling - only observations. Installed 4 temporary 1-inch casings at P-14, P-17, P-19, and SP-3 to observe product accumulation.
Dual Vacuum Extraction/Entrainment Extraction Pilot Study	10/31/1997	Terra Vac	Yes	Pilot for product recovery. Installation of wells N-1 to N-2; no analytical sampling - only product recovery testing.
Letter of October 9, 1997 - Prep for Ecology site hazard assessment	11/14/1997	Chevron	No	Chevron letter to Ecology summarizing site in preparation for Ecology site hazard assessment. Includes history and description of site. Includes selected data from previous investigations.
Monitoring Well Installation Report	1/20/1999	Gettler-Ryan	Yes	Monitoring well installation. MW-50 to MW-62. Includes soil sampling results.
Monitoring Well Installation Report	1/27/1999	Chevron	Yes	As above with full appendices - analytical data reports
Preliminary Estimate of Remediation Costs for the Chevron Terminal Property	5/31/2000	RETEC	No	Draft letter report - site background and cleanup options/costs
Site Hazard Score Worksheets	6/15/2000	Ecology	No	Ecology site hazard index score information
Site Conceptual Model Report	10/27/2000	RRM Engineering	Yes	Summary of site history, investigations, and remediation activities. Includes good collection of well logs.

Table 2-1
Summary of Environmental Studies for the Central Waterfront Site

Site Area/Study	Date	Author	Well Logs	Description/Comments
Environmental Remediation Activities	3/28/2002	KHM Environmental	No	Excavation description for shoreline "seep" area
Request for Review: Independent Remedial Action	2/26/2002	Ecology	No	Voluntary Cleanup Program application
Environmental Investigation Work Plan	7/2002	KHM Environmental	No	Work Plan for RI activities
Groundwater Monitoring Report - Event of November 3, 4, 5, and 6, 2003	1/19/2004	Gettler-Ryan	No	Groundwater monitoring report - November 2003 sampling. Includes analytical report.
Colony Wharf / Bellingham Marine Industries				
Phase 1 Environmental Site Assessment	5/24/1990	GeoEngineers	No	Phase 1 assessment
Phase 2 Environmental Site Assessment	3/18/1992	GeoEngineers	Yes	Phase 2 investigation report. Analytical results for soil and groundwater (MW-1 to MW-12).
Phase 3 Environmental Site Assessment	7/7/1992	GeoEngineers	Yes	Phase 3 investigation report. Analytical results for soil and groundwater (MW-13 to MW-19 and B-1 to B-3, and C-1 to C-2).
Site Environmental Review	11/22/1995	Landau Associates	No	Review of current conditions and remedial issues/cost estimating
Results of Waterfront Material Characterization and Limited Metals Assessment	10/23/2002	GeoEngineers	Yes	Shoreline soil investigation and groundwater metals sampling. Three soil samples and two groundwater samples (MW-3 and MW-13).
Biological Evaluation: Shoreline Improvements	2/2002	Anchor Environmental	No	Biological evaluation for shoreline work impacts
Methane Sampling at Bellingham Marine Industries	2/13/2002	Whatcom Environmental Services, Inc.	No	Methane monitoring in buildings
Hydrocarbon Contamination Summary and Draft Cleanup Action Plan	5/29/2003	GeoEngineers	No	Site history and draft cleanup plan - includes UST removal report (summarizes previous data-no new data)
Metals in Soil & Groundwater in Former Foundry Area	4/16/2004	GeoEngineers	No	Soil and groundwater metals investigation report including cover letter to City of Bellingham
Former Roeder Avenue Landfill				
Historic Landfill documents	1965	Various	No	Historic landfill documents
Site Inspection Report for Old Bellingham Landfill	6/12/1987	Ecology and Environment	No	Landfill inspection worksheets
Resource Protection Well Report(s)	1994	Ecology	Yes	Ecology logs
Roeder Avenue Landfill - Ecology background	3/22/1996	Dept. of Health	No	Department of Health determination of hazardous waste to landfill
Evaluation of Groundwater Contamination at Roeder Avenue Landfill	9/1996	Ecology	No	Ecology groundwater evaluation

Table 2-1
Summary of Environmental Studies for the Central Waterfront Site

Site Area/Study	Date	Author	Well Logs	Description/Comments
Pre-Design Testing Report for the Roeder Avenue Warehouse Project	12/16/1997	RETEC	Yes	Pre-design testing for warehouse project including borings (RGB-1 to RGB-6) and wells/gas probes (RGP-1 to RGP-4), and test pits (RTP-1 to RTP-46)
Preliminary Geotechnical and Environmental Design Input - Warehouse	7/14/1998	Golder Associates	Yes	Geotechnical investigation for proposed warehouse
Methane and H_2S (Hydrogen Sulfide) Emission Inventory	2/18/1999	Antec Env. Services	No	Vapor evaluation
Determination of Potential Liable Person Status	2/3/2003	Ecology	No	Determination status
Draft Remedial Investigation/Feasibility Study	10/1/2001	ThermoRetec	Yes	RI/FS report for investigation and feasibility study evaluation (draft)
Former Olivine Upland				
Environmental Site Assessment - Proposed U.S. Coast Guard Search and Rescue Station	7/15/1994	USCG	Yes	Phase 1 information and upland/sediment sampling
Soil, Sediment, and Groundwater Investigation	3/27/1995	Harding Lawson Associates	Yes	Investigation of soil, groundwater, and sediment
Environmental Assessment for Relocation and Expansion	6/1996	USCG	No	Evaluation to proceed with Environmental Impact Statement
Recommended Design Wind and Wave Conditions For the New Boathouse Facility	8/1997	Northwest Weathernet, Inc.	No	Environmental stress evaluation
Fisheries Habitat Survey at I&J Waterway	9/2/1997	SAIC	No	Preliminary eelgrass and macroalgae habitat survey
Draft Work Plan for a Remedial Investigation/Feasibility Study	10/28/1998	WCEC	No	RI/FS Work Plan for uplands and sediments
Work Plan for a Remedial Investigation/Feasibility Study	6/8/2000	WCEC/ThermoRetec	No	RI/FS Work Plan for uplands and sediments
Subsurface Exploration and Chemical Testing-Former Army Reserve Site	12/7/2000	GeoEngineers	Yes	Investigation at neighboring former Army Reserve property. Limited test pit investigation and geotech study. Two former USTs at the property.

Notes:
BTEX = benzene, toluene, ethylbenzene, and xylene
Ecology = Washington State Department of Ecology
NAPL = non-aqueous phase liquid
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
RI/FS = Remedial Investigation/Feasibility Study
TPH = total petroleum hydrocarbon
USCG = U.S. Coast Guard
UST = underground storage tank

Table 2-2
Summary of Underground Storage Tank Decommission and Cleanup Actions

Area with UST(s)	UST ID	Cleanup/Decommission Action	References	Additional Notes
Former Absorption Products Plant / U.S. Army Reserve	#1	Two USTs were removed in 1994 (2,000-gallon Bunker C UST and 500-gallon diesel heating oil UST).	GeoEngineers 2000	Diesel-related soil contamination found during the UST excavation; 5 cubic yards of soil were over-excavated as part of removal. Confirmation sampling results were below MTCA Method A Cleanup Levels for TPH and BTEX.
Former Olivine Facility and Track Dispatch	#2	One UST was decommissioned and removed in 1998 (1,000-gallon heating oil UST).	Pinner Engineering 1998; AECOM 2009	Post-excavation soil and groundwater samples were above MTCA Method A Levels for TPH-D. Follow-up testing did not detect BTEX.
Bornstein Seafood	#3	Two USTs were decommissioned in place using the "cement/slurry" method (12,000-gallon diesel UST and 700-gallon gasoline UST).	Port of Bellingham - Bornstein Lease Documents (Tenant Checklist), 1994	No report of UST removal or confirmation sampling.
Former Hawley's Hilton Marina	#4	One UST was removed in 1990 (12,000-gallon gasoline UST).	Ecology 1991 (NFA Letter); GeoEngineers 1996	Limited excavation of contaminated soil (5 cubic yards total). Trench soil samples did not detect TPH contamination. No Further Action (NFA) letter issued by Ecology on March 12, 1991. Additional follow-up sampling conducted in 1996 did not detect TPH impacts in area of former UST.
Colony Wharf / BMI	#5	Two USTs were decomissioned and removed (a 3,600-gallon gasoline UST in 1997 and a 2,000-gallon gasoline UST in 2003).	GeoEngineers 1990, 2003	USTs were located south of the C Street intersection in the Maple Street Right-of-Way. Groundwater in this area is impacted by TPH.
Colony Wharf / BMI	#6	Two USTs, one containing gasoline and one containing diesel, were removed in 1989.	GeoEngineers 1990	USTs were located in the former "Boat Storage Area."
Colony Wharf / BMI	#7	One UST was removed in 1987 (1,000-gallon gasoline UST).	GeoEngineers 1990	UST was located in former "Metal Refab and Wood Shop" area. In November 1997, an explosion, fire, and resulting fuel spill from this tank resulted in final removal.

Notes:

BMI = Bellingham Marine Industries
BTEX = benzene, toluene, ethylbenzene, and xylene
MTCA = Model Toxics Control Act
NFA = no further action
TPH = total petroleum hydrocarbons
TPH-D = total petroleum hydrocarbons - diesel range
UST = underground storage tank

Table 4-1
RI Groundwater Screening Levels

Analyte (by Group)	Applicable Groundwater Criteria															Applicable Practical Quantitation Level (PQL) for RI Analyses	Most Stringent Groundwater Screening Level[f] (This value may vary by land use if most stringent value is based on vapor intrusion.)			
	Marine Surface Water Criteria							Protection of Marine Sediment												
							Surface Water, Method B, Most-Restrictive, Adjusted for Fish Consumption Rate[a]	*Partitioning/Distribution Coefficients* [b]		*Marine Sediment Quality Standards*			Tier 1 Vapor Intrusion Groundwater Screening Levels[d]							
	Surface Water ARAR - Aquatic Life - Marine - Ch. 173-201A WAC	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131	Surface Water ARAR - Human Health – Marine – Clean Water Act §304	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131	Surface Water, Method A, Most-Restrictive		Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) - Sediment to Water Pathway (L/kg)	WAC 173-204 Marine SQS (mg/kg organic carbon)	WAC 173-204 Marine SQS (mg/kg dry weight)	Calculated Porewater Concentration Protective of Marine Sediment[c]	Method B, Unrestricted Land Use	Method C, Industrial Land Use		Unrestricted Land Use		Industrial Land Use	
	(ma-wac)	*(ma-cwa)*	*(ma-ntr)*	*(hh-cwa)*	*(hh-ntr)*	*(sw-a)*	*(sw-b)*					*(sed)*	*(vi-b)*	*(vi-c)*	*(pql)*				
Total Petroleum Hydrocarbons																			
Gasoline Range Hydrocarbons in µg/L						800									250	800	*(sw-a)*	800	*(sw-a)*
Diesel Range Hydrocarbons in µg/L						500									250	500	*(sw-a)*	500	*(sw-a)*
Oil Range Hydrocarbons in µg/L						500									500	500	*(sw-a)*	500	*(sw-a)*
Bunker C in µg/L						500									500	500	*(sw-a)*	500	*(sw-a)*
Total TPHs in µg/L						800										800	*(sw-a)*	800	*(sw-a)*
Heavy Metals																			
Arsenic in µg/L	36	36	36	0.14	0.14		ARAR		*29*		57	2000			0.5	5	*see footnote g*	5	*see footnote g*
Cadmium in µg/L	9.3	8.8	9.3				ARAR		*6.7*		5.1	760			0.02	8.8	*(ma-cwa)*	8.8	*(ma-cwa)*
Chromium (Total) in µg/L									*1000*		260	260			0.2	260	*(sed)*	260	*(sed)*
Chromium (III) in µg/L							93700		*1000*							93700	*(sw-b)*	93700	*(sw-b)*
Chromium (VI) in µg/L	50	50	50				ARAR		*19*		260	14000				50	*(ma-wac)*	50	*(ma-wac)*
Copper in µg/L	3.1	3.1					ARAR		*22*		390	18000			0.1	3.1	*(ma-wac)*	3.1	*(ma-wac)*
Lead in µg/L	8.1	8.1	8.1						*10000*		450	45			0.02	8.1	*(ma-wac)*	8.1	*(ma-wac)*
Mercury in µg/L	*see footnote h*	0.94	*see footnote h*		0.15				*6900* [i]		0.41	0.06	0.89	1.9	0.001	0.059	*(sed)*	0.059	*(sed)*
Nickel in µg/L	8.2	8.2	8.2	4600	4600		420		*65*						0.2	8.2	*(ma-wac)*	8.2	*(ma-wac)*
Selenium in µg/L	71	71	71	4200			1040		*5*						1	71	*(ma-wac)*	71	*(ma-wac)*
Silver in mg/L	1.9	1.9	1.9				ARAR		*8.3*		6.1	730			0.02	1.9	*(ma-wac)*	1.9	*(ma-wac)*
Zinc in µg/L	81	81	81	26000			6600		*62*		410	6600			0.5	81	*(ma-wac)*	81	*(ma-wac)*
Mercury Speciation																			
Dimethylmercury in µg/L																			
Mercury (acid-labile) in µg/L																			
Mercury (elemental) in µg/L													0.89	1.9		0.89	*(vi-b)*	1.9	*(vi-c)*
Methylmercury in µg/L	0.025		0.025													0.025	*(ma-wac)*	0.025	*(ma-wac)*
Conventionals and Other Metals																			
Formaldehyde in µg/L																1600	*see footnote j*	1600	*see footnote j*
Nitrate + Nitrite in mg/L																			
Nitrate as Nitrogen in mg/L																			
Nitrite as Nitrogen in mg/L																			
Manganese in mg/L				0.1											0.00005	0.1	*(hh-cwa)*	0.1	*(hh-cwa)*
Volatile Organic Compounds																			
1,1,1,2-Tetrachloroethane in µg/L													7.4	74	0.5	7.4	*(vi-b)*	74	*(vi-c)*
1,1,1-Trichloroethane in µg/L							360000	*140*					11000	25000	0.5	11000	*(vi-b)*	25000	*(vi-c)*
1,1,2 - Trichlorotrifluoroethane in µg/L													1100	2400	0.5	1100	*(vi-b)*	2400	*(vi-c)*
1,1,2,2-Tetrachloroethane in µg/L				4	11		ARAR	*79*					6.2	62	0.5	4	*(hh-cwa)*	4	*(hh-cwa)*
1,1,2-Trichloroethane in µg/L				16	42		ARAR	*75*					7.9	79	0.5	7.9	*(vi-b)*	16	*(hh-cwa)*
1,1-Dichloroethane in µg/L								*53*					2300	5000	0.5	2300	*(vi-b)*	5000	*(vi-c)*
1,1-Dichloroethene in µg/L				7100	3.2		ARAR	*65*					130	280	0.5	3.2	*(hh-ntr)*	3.2	*(hh-ntr)*
1,1-Dichloropropene in µg/L															0.5				
1,2,3-Trichlorobenzene in µg/L															2				
1,2,3-Trichloropropane in µg/L															0.5				
1,2,4-Trichlorobenzene in µg/L				70			0.77	*1700*		0.81		0.48	3900	8400	0.2	0.48	*(sed)*	0.48	*(sed)*
1,2,4-Trimethylbenzene in µg/L													24	52	2	24	*(vi-b)*	52	*(vi-c)*
1,2-Dibromo-3-chloropropane in µg/L															2				
1,2-Dibromoethane (EDB) in µg/L								*66*					0.74	7.4	2	2	*(pql)*	7.4	*(vi-c)*
1,2-Dichlorobenzene in µg/L				1300	17000		ARAR	*380*		2.3		6.1	1800	4000	0.2	6.1	*(sed)*	6.1	*(sed)*
1,2-Dichloroethane (EDC) in µg/L				37	99		ARAR	*38*					4.2	42	0.5	4.2	*(vi-b)*	37	*(hh-cwa)*
1,2-Dichloropropane in µg/L				15				*47*					28	62	0.5	15	*(hh-cwa)*	15	*(hh-cwa)*
1,3,5-Trimethylbenzene in µg/L													25	54	2	25	*(vi-b)*	54	*(vi-c)*
1,3-Dichlorobenzene in µg/L				960	2600										0.2	960	*(hh-cwa)*	960	*(hh-cwa)*
1,3-Dichloropropane in µg/L															0.5				
1,4-Dichloro-2-Butene in µg/L															10				
1,4-Dichlorobenzene in µg/L				190	2600			*620*		3.1		5	7900	17000	0.2	5	*(sed)*	5	*(sed)*

Table 4-1
RI Groundwater Screening Levels

Analyte (by Group)	Applicable Groundwater Criteria: Marine Surface Water Criteria: Surface Water ARAR - Aquatic Life - Marine - Ch. 173-201A WAC (ma-wac)	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304 (ma-cwa)	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131 (ma-ntr)	Surface Water ARAR - Human Health – Marine – Clean Water Act §304 (hh-cwa)	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131 (hh-ntr)	Surface Water, Method A, Most-Restrictive (sw-a)	Surface Water, Method B, Most-Restrictive, Adjusted for Fish Consumption Rate[a] (sw-b)	Protection of Marine Sediment: Partitioning/Distribution Coefficients[b]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) - Sediment to Water Pathway (L/kg)	Marine Sediment Quality Standards: WAC 173-204 Marine SQS (mg/kg organic carbon)	WAC 173-204 Marine SQS (mg/kg dry weight)	Calculated Porewater Concentration Protective of Marine Sediment[c] (sed)	Tier 1 Vapor Intrusion Groundwater Screening Levels[d]: Method B, Unrestricted Land Use (vi-b)	Method C, Industrial Land Use (vi-c)	Applicable Practical Quantitation Level (PQL) for RI Analyses (pql)	Most Stringent Groundwater Screening Level[f] (This value may vary by land use if most stringent value is based on vapor intrusion.): Unrestricted Land Use		Industrial Land Use	
2,2-Dichloropropane in µg/L															0.5				
2-Butanone in µg/L													350000	760000	20	350000	(vi-b)	760000	(vi-c)
2-Chloroethyl Vinyl Ether in µg/L															5				
2-Chlorotoluene in µg/L															2				
2-Hexanone in µg/L															20				
4-Chlorotoluene in µg/L															2				
4-Methyl-2-pentanone in µg/L													11000	24000	20	11000	(vi-b)	24000	(vi-c)
Acetone in µg/L								0.58							20				
Acrolein in µg/L				9	780								2.9	6.4	20	20	(pql)	20	(pql)
Acrylonitrile in µg/L				0.25	0.66		ARAR						16	160	5	5	(pql)	5	(pql)
Benzene in µg/L				51	71		ARAR	62					2.4	24	0.5	2.4	(vi-b)	24	(vi-c)
Bromobenzene in µg/L															2				
Bromochloromethane in µg/L															0.5				
Bromodichloromethane in µg/L				17	22		ARAR	55					0.09	0.9	0.5	0.5	(pql)	0.9	(vi-c)
Bromoethane in µg/L																			
Bromoform in µg/L				140	360		ARAR	130					200	2000	0.5	140	(hh-cwa)	140	(hh-cwa)
Bromomethane in µg/L				1500	4000		400	9					13	28	0.5	13	(vi-b)	28	(vi-c)
Carbon disulfide in µg/L								46					400	870	0.5	400	(vi-b)	870	(vi-c)
Carbon tetrachloride in µg/L				1.6	4.4		ARAR	150					0.22	2.2	0.5	0.5	(pql)	1.6	(hh-cwa)
Chlorobenzene in µg/L				1600	21000		ARAR	220					100	220	0.5	100	(vi-b)	220	(vi-c)
Chloroethane in µg/L													12	120	0.5	12	(vi-b)	120	(vi-c)
Chloroform in µg/L				470	470		ARAR	53					1.2	12	0.5	1.2	(vi-b)	12	(vi-c)
Chloromethane in µg/L								6					5.2	52	0.5	5.2	(vi-b)	52	(vi-c)
cis-1,2-Dichloroethene (DCE) in µg/L								36					160	350	0.5	160	(vi-b)	350	(vi-c)
cis-1,3-Dichloropropene in µg/L															0.5				
Dibromochloromethane in µg/L				13	34		ARAR	63					0.22	2.2	0.5	0.5	(pql)	2.2	(vi-c)
Dibromomethane in µg/L															0.5				
Dichlorodifluoromethane in µg/L													9.9	22	0.5	9.9	(vi-b)	22	(vi-c)
Ethylbenzene in µg/L				2100	29000		ARAR	200					2800	6100	0.5	2100	(hh-cwa)	2100	(hh-cwa)
Hexachlorobutadiene in µg/L				18	50		ARAR	54000		3.9		0.072	0.81	8.1	0.2	0.2	(pql)	0.2	(pql)
Isopropylbenzene in µg/L													720	1600	2	720	(vi-b)	1600	(vi-c)
m,p-Xylenes in µg/L															0.5				
Methylene chloride in µg/L				590	1600		ARAR	10					94	940	2	94	(vi-b)	590	(hh-cwa)
Methyliodide in µg/L															5				
n-Butylbenzene in µg/L															2				
n-Propylbenzene in µg/L															2				
o-Xylene in µg/L								240					440	960	0.5	440	(vi-b)	960	(vi-c)
p-Isopropyltoluene in µg/L															2				
sec-Butylbenzene in µg/L															2				
Styrene in µg/L								910					78	780	0.5	78	(vi-b)	780	(vi-c)
tert-Butylbenzene in µg/L															2				
Tetrachloroethene (PCE) in µg/L				3.3	8.85		ARAR	270					23	95	0.5	3.3	(hh-cwa)	3.3	(hh-cwa)
Toluene in µg/L				15000	200000		7300	140					15000	33000	0.5	7300	(sw-b)	7300	(sw-b)
trans-1,2-Dichloroethene in µg/L				10000			ARAR	38					130	290	0.5	130	(vi-b)	290	(vi-c)
trans-1,3-Dichloropropene in µg/L															0.5				
Trichloroethene (TCE) in µg/L				30	81		ARAR	94					1.6	8.4	0.5	1.6	(vi-b)	8.4	(vi-c)
Trichlorofluoromethane in µg/L													120	260	0.5	120	(vi-b)	260	(vi-c)
Vinyl acetate in µg/L								5.3					7800	17000	5	7800	(vi-b)	17000	(vi-c)
Vinyl chloride in µg/L				2.4	525		ARAR	19					0.35	3.5	0.5	0.5	(pql)	2.4	(hh-cwa)
Xylenes (total) in µg/L								230											
Naphthalene in µg/L							1900	1200		99		83	170	360	0.2	83	(sed)	83	(sed)
Polycyclic Aromatic Hydrocarbons (PAHs)																			
Acenaphthene in µg/L				990			247	4900		16		3.3			0.02	3.3	(sed)	3.3	(sed)
Acenaphthylene in µg/L										66					0.02				

Table 4-1
RI Groundwater Screening Levels

Analyte (by Group)	Applicable Groundwater Criteria: Marine Surface Water Criteria: Surface Water ARAR - Aquatic Life - Marine - Ch. 173-201A WAC (ma-wac)	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304 (ma-cwa)	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131 (ma-ntr)	Surface Water ARAR - Human Health – Marine – Clean Water Act §304 (hh-cwa)	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131 (hh-ntr)	Surface Water, Method A, Most-Restrictive (sw-a)	Surface Water, Method B, Most-Restrictive, Adjusted for Fish Consumption Rate[a] (sw-b)	Protection of Marine Sediment: Partitioning/Distribution Coefficients[b]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) - Sediment to Water Pathway (L/kg)	Marine Sediment Quality Standards: WAC 173-204 Marine SQS (mg/kg organic carbon)	WAC 173-204 Marine SQS (mg/kg dry weight)	Calculated Porewater Concentration Protective of Marine Sediment[c] (sed)	Tier 1 Vapor Intrusion Groundwater Screening Levels[d]: Method B, Unrestricted Land Use (vi-b)	Method C, Industrial Land Use (vi-c)	Applicable Practical Quantitation Level (PQL) for RI Analyses (pql)	Most Stringent Groundwater Screening Level[f] (This value may vary by land use if most stringent value is based on vapor intrusion.): Unrestricted Land Use		Industrial Land Use	
Anthracene in µg/L				40000	110000		10000	23000		220		9.6			0.02	9.6	(sed)	9.6	(sed)
Benzo(g,h,i)perylene in µg/L										31					0.02				
Fluoranthene in µg/L				140	370		35	49000		160		3.3			0.02	3.3	(sed)	3.3	(sed)
Fluorene in µg/L				5300	14000		1400	7700		23		3			0.02	3	(sed)	3	(sed)
Phenanthrene in µg/L										100					0.02				
Pyrene in µg/L				4000	11000		1000	68000		1000		15			0.02	15	(sed)	15	(sed)
1-Methylnaphthalene in µg/L															0.02				
2-Methylnaphthalene in µg/L										38					0.02				
Naphthalene in µg/L							1900	1200		99		83	170	360	0.02	83	(sed)	83	(sed)
Total Naphthalenes in µg/L																			
Benz(a)anthracene in µg/L				0.018	0.031		ARAR	360000		110		0.31			0.02	0.02	(pql)	0.02	(pql)
Benzo(a)pyrene in µg/L				0.018	0.031		ARAR	970000		99		0.1			0.02	0.02	(pql)	0.02	(pql)
Benzo(b)fluoranthene in µg/L				0.018	0.031		ARAR	1200000							0.02	0.02	(pql)	0.02	(pql)
Benzo(k)fluoranthene in µg/L				0.018	0.031		ARAR	1200000							0.02	0.02	(pql)	0.02	(pql)
Chrysene in µg/L				0.018	0.031		ARAR	400000		110		0.28			0.02	0.02	(pql)	0.02	(pql)
Dibenzo(a,h)anthracene in µg/L				0.018	0.031		ARAR	1800000		12		0.007			0.02	0.02	(pql)	0.02	(pql)
Indeno(1,2,3-cd)pyrene in µg/L				0.018	0.031		ARAR	3500000		34		0.010			0.02	0.02	(pql)	0.02	(pql)
Total cPAHs TEQ in µg/L				0.018	0.031		ARAR	970000		99		0.100			0.02	0.02	(pql)	0.02	(pql)
Other Semi-Volatile Organics																			
1,2,4-Trichlorobenzene in µg/L				70			0.77	1700		0.81		0.48	3900	8400	0.2	0.48	(sed)	0.48	(sed)
1,2-Dichlorobenzene in µg/L				1300	17000		ARAR	380		2.3		6.1	1800	4000	0.2	6.1	(sed)	6.1	(sed)
1,3-Dichlorobenzene in µg/L				960	2600										0.2	960	(hh-cwa)	960	(hh-cwa)
1,4-Dichlorobenzene in µg/L				190	2600			620		3.1		5	7900	17000	0.2	5	(sed)	5	(sed)
2,4,5-Trichlorophenol in µg/L				3600				1600							0.5	3600	(hh-cwa)	3600	(hh-cwa)
2,4,6-Trichlorophenol in µg/L				2.4	6.5		ARAR	380							0.5	2.4	(hh-cwa)	2.4	(hh-cwa)
2,4-Dichlorophenol in µg/L				290	790		73	150			0.029				0.5	73	(sw-b)	73	(sw-b)
2,4-Dimethylphenol in µg/L				850			200	210							4	200	(sw-b)	200	(sw-b)
2,4-Dinitrophenol in µg/L				5300	14000		1400	0.01							4	1400	(sw-b)	1400	(sw-b)
2-Chloronaphthalene in µg/L				1600			390								0.2	390	(sw-b)	390	(sw-b)
2-Chlorophenol in µg/L							37	390							0.5	37.4	(sw-b)	37.4	(sw-b)
2-Methylphenol in µg/L								91			0.063				0.5				
2-Nitroaniline in µg/L															0.2				
2-Nitrophenol in µg/L															0.5				
3,3'-Dichlorobenzidine in µg/L				0.028	0.077		ARAR	720							2	2	(pql)	2	(pql)
3-Nitroaniline in µg/L															1				
4,6-Dinitro-2-methylphenol in µg/L															2				
4-Bromophenyl phenyl ether in µg/L															0.2				
4-Chloro-3-methylphenol in µg/L															0.5				
4-Chloroaniline in µg/L								66							0.2				
4-Chlorophenyl phenyl ether in µg/L															0.2				
4-Methylphenol in µg/L											0.67				0.5				
4-Nitroaniline in µg/L															1				
4-Nitrophenol in µg/L															2				
Benzoic acid in µg/L								0.6			0.65				5				
Benzyl alcohol in µg/L											0.057				5				
Benzyl butyl phthalate in µg/L				1900			3.2	14000		4.9		0.35			0.2	0.35	(sed)	0.35	(sed)
Bis(2-chloro-1-methylethyl) ether in µg/L							14									14.3	(sw-b)	14.3	(sw-b)
Bis(2-chloroethoxy)methane in µg/L															0.2				
Bis(2-chloroethyl) ether in µg/L				0.53	1.4		ARAR	76					26	260	0.2	0.53	(hh-cwa)	0.53	(hh-cwa)
Bis(2-ethylhexyl) phthalate in µg/L				2.2	5.9		ARAR	110000		47		0.43			1	1	(pql)	1	(pql)
Carbazole in µg/L								3400							0.2				
Dibenzofuran in µg/L										15					0.2				
Diethyl phthalate in µg/L				44000	120000		10800	82		61		740			0.2	740	(sed)	740	(sed)
Dimethyl phthalate in µg/L				1100000	2900000					53					0.2	1100000	(hh-cwa)	1100000	(hh-cwa)

Table 4-1
RI Groundwater Screening Levels

	Applicable Groundwater Criteria															Most Stringent Groundwater Screening Level[f] (This value may vary by land use if most stringent value is based on vapor intrusion.)			
	Marine Surface Water Criteria							Protection of Marine Sediment											
								Partitioning/Distribution Coefficients [b]		*Marine Sediment Quality Standards*			Tier 1 Vapor Intrusion Groundwater Screening Levels[d]						
Analyte (by Group)	Surface Water ARAR - Aquatic Life - Marine - Ch. 173-201A WAC *(ma-wac)*	Surface Water ARAR - Aquatic Life - Marine - Clean Water Act §304 *(ma-cwa)*	Surface Water ARAR - Aquatic Life - Marine - National Toxics Rule, 40 CFR 131 *(ma-ntr)*	Surface Water ARAR - Human Health – Marine – Clean Water Act §304 *(hh-cwa)*	Surface Water ARAR - Human Health – Marine – National Toxics Rule, 40 CFR 131 *(hh-ntr)*	Surface Water, Method A, Most-Restrictive *(sw-a)*	Surface Water, Method B, Most-Restrictive, Adjusted for Fish Consumption Rate[a] *(sw-b)*	Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) - Sediment to Water Pathway (L/kg)	WAC 173-204 Marine SQS (mg/kg organic carbon)	WAC 173-204 Marine SQS (mg/kg dry weight)	Calculated Porewater Concentration Protective of Marine Sediment[c] *(sed)*	Method B, Unrestricted Land Use *(vi-b)*	Method C, Industrial Land Use *(vi-c)*	Applicable Practical Quantitation Level (PQL) for RI Analyses *(pql)*	Unrestricted Land Use		Industrial Land Use	
Di-n-butyl phthalate in µg/L				4500	12000		1120	*1600*		220		140			0.2	140	*(sed)*	140	*(sed)*
Di-n-octyl phthalate in µg/L								*83000000*		58		0.0007			0.2	0.2	*(pql)*	0.2	*(pql)*
Hexachlorobenzene in µg/L				0.00029	0.00077		ARAR	*80000*		0.38		0.0048			0.2	0.2	*(pql)*	0.2	*(pql)*
Hexachlorobutadiene in µg/L				18	50		ARAR	*54000*		3.9		0.072	0.81	8.1	0.2	0.2	*(pql)*	0.2	*(pql)*
Hexachlorocyclopentadiene in µg/L				1100	17000		ARAR	*200000*							1	1100	*(hh-cwa)*	1100	*(hh-cwa)*
Hexachloroethane in µg/L				3.3	8.9		ARAR	*1800*					8.6	86	0.2	3.3	*(hh-cwa)*	3.3	*(hh-cwa)*
Isophorone in µg/L				960	600		ARAR	*47*							0.2	600	*(hh-ntr)*	600	*(hh-ntr)*
Nitrobenzene in µg/L				690	1900		690	*120*					690	1500	0.2	690	*(hh-cwa)*	690	*(hh-cwa)*
N-Nitroso-di-n-propylamine in µg/L				0.51			0.32	*24*							0.2	0.32	*(sw-b)*	0.32	*(sw-b)*
N-Nitrosodiphenylamine in µg/L				6	16		3.7	*1300*		11		8.5			0.2	3.7	*(sw-b)*	3.7	*(sw-b)*
Pentachlorophenol in µg/L	7.9	7.9	7.9	3	8.2		ARAR	*590*			0.36				1	3	*(hh-cwa)*	3	*(hh-cwa)*
Phenol in µg/L				860000	4600000		216000	*29*			0.42				0.5	216000	*(sw-b)*	216000	*(sw-b)*
2,4-Dinitrotoluene in µg/L				3.4	9.1		ARAR	*96*							0.2	3.4	*(hh-cwa)*	3.4	*(hh-cwa)*
2,6-Dinitrotoluene in µg/L								*69*							0.2				
Field Parameters																			
pH in pH units	<7.0 or >8.5															<6.2[k] or >8.5	*see footnote k*		

Table 4-1
RI Groundwater Screening Levels

Note:
1. Central Waterfront site-specific screening levels were developed consistent with Bellingham Bay nearshore cleanup Sites in coordination with the GP West RI/FS process.

Footnotes:

a. In accordance with WAC 173-340-730(3)(b)(iii), if sufficiently protective human-health-based criteria or standards (ARARs) have not been established under applicable state and federal laws, Method B surface water values are developed. Method B values are most restrictive of carcinogenic or non-carcinogenic values from CLARC database, but adjusted downward assuming a higher fish consumption rate than the MTCA default, consistent with assumptions applied in the Whatcom Waterway cleanup. If the minimum ARAR value is sufficiently protective (@ risk = 10-5, HQ=1), the ARAR is the Method B value, as displayed.
b. Values from Ecology's CLARC Database downloaded May 2012, except as noted. PCE and TCE values updated September 2012.
c. Calculated assuming equilibrium partitioning: Cw (porewater) = SQS (WAC 173-204-320) / Kd.
d. From Table B-1 (Appendix B) of Ecology's Guidance for Evaluation of Soil Vapor Intrusion (Ecology 2009).
e. From Columbia Analytical Services, Inc. (Kelso, WA) published method reporting limits.
f. Most stringent of values protective of marine surface water, sediment, and vapor intrusion.
g. Based on background concentrations in Washington state (WAC 173-340-900 Table 720-1).
h. Note relating to GP West screening level development: 0.025 µg/L value was derived for methylmercury (EPA 1985), and is not applicable for inorganic mercury present at the Site.
i. Site-specific value from Aspect and Anchor QEA (2011b).
j. Formaldehyde value based on protection of aquatic life (Anchor Environmental 2008b; included as Appendix A to the GP West RI/FS Work Plan [Aspect 2009a]).
k. pH 6.2 is the lower-end of natural background groundwater pH range, calculated from Whatcom County background data, in accordance with WAC 173-340-709(3) (refer to Section 4.2.1 text).

Selected screening levels

µg/L = microgram per liter
ARAR = Applicable or Relevant and Appropriate Requirements
CFR = Code of Federal Regulations
CLARC = Cleanup Levels and Risk Calculation
cPAH = carcinogenic polycyclic aromatic hydrocarbon
EPA = Environmental Protection Agency
L/kg = liter per kilogram
HQ = hazard quotient
mg/kg = milligram per kilogram
MTCA = Model Toxics Control Act
PAH = polycyclic aromatic hydrocarbon
PCE = tetrachloroethylene
RI/FS = Remedial Investigation/Feasibility Study
SQS = Sediment Quality Standard
TCE = trichloroethylene
TEQ = toxic equivalent quotient
TPH = total petroleum hydrocarbon
WAC = Washington Administrative Code

Table 4-2a
RI Unrestricted Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Unrestricted Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria — Groundwater Protection — Constants and Coefficients[a]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[c] (gwl-s)	Direct Contact[d]: Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method B, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), unrestricted land use (mg/kg)[f] (mB)	Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Unrestricted Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]: Unsaturated Soil		Saturated Soil		Most Stringent Unrestricted Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
Total Petroleum Hydrocarbons[j]																
Gasoline Range Hydrocarbons	800									5	30	(mA)	30	(mA)	30	(mA)
Diesel Range Hydrocarbons	500						2000			25	2000	(mA)	2000	(mA)	2000	(mA)
Oil Range Hydrocarbons	500						2000			100	2000	(mA)	2000	(mA)	2000	(mA)
Bunker C	500						2000				2000	(mA)	2000	(mA)	2000	(mA)
Total TPHs	800						2000				2000	(mA)	2000	(mA)	2000	(mA)
Heavy Metals																
Arsenic	5		29	0	2.9	0.15	20	0.67	7	0.5	7	(back)	7	(back)	20	(mA)
Cadmium	8.8		6.7	0	1.2	0.061		80	1	0.02	1.2	(gwl-u)	1	(back)	80	(mB)
Chromium (Total)	260		1000	0	5200	260				0.2	5200	(gwl-u)	260	(gwl-s)		
Chromium (VI)	50		19	0	19	0.96		240	48		48	(back)	48	(back)	240	(mB)
Copper	3.1		22	0	1.4	0.069		3200	36	0.1	36	(back)	36	(back)	3200	(mB)
Lead	8.1		10000	0	1600	81	250		17	0.05	250	(mA)	81	(gwl-s)	250	(mA)
Mercury	0.06		1700 [k]	0.47	2	0.1		24	0.07	0.001	2	(gwl-u)	0.1	(gwl-s)	24	(mB)
Nickel	8.2		65	0	11	0.54		1600	48	0.2	48	(back)	48	(back)	1600	(mB)
Selenium	71		5	0	7.4	0.38		400		1	7.4	(gwl-u)	1	(pql)	400	(mB)
Silver	1.9		8.3	0	0.32	0.016		400		0.02	0.32	(gwl-u)	0.02	(pql)	400	(mB)
Zinc	81		62	0	100	5		24000	85	0.5	100	(gwl-u)	85	(back)	24000	(mB)
Mercury Speciation																
Mercury (elemental)	0.89															
Methylmercury	0.025							8			8	(mB)	8	(mB)	8	(mB)
Conventionals and Other Metals																
Formaldehyde	1600							16000			16000	(mB)	16000	(mB)	16000	(mB)
pH	<6.2 or >8.5										<2.5 or >11.0	see footnote l	<2.5 or >11.0	see footnote l		
Manganese	0.1			0				11000	1200	0.05	11000	(mB)	11000	(mB)	11000	(mB)
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	7.4							38		0.005	38	(mB)	38	(mB)	38	(mB)
1,1,1-Trichloroethane	11000	140		0.71	300	15		160000		0.005	300	(gwl-u)	15	(gwl-s)	160000	(mB)
1,1,2 - Trichlorotrifluoroethane	1100							2400000		0.005	2400000	(mB)	2400000	(mB)	2400000	(mB)
1,1,2,2-Tetrachloroethane	4.0	79		0.014	0.065	0.0036		5		0.005	0.065	(gwl-u)	0.005	(pql)	5	(mB)
1,1,2-Trichloroethane	7.9	75		0.037	0.12	0.0069		18		0.005	0.12	(gwl-u)	0.0069	(gwl-s)	18	(mB)
1,1-Dichloroethane	2300	53		0.23	29	1.6		16000		0.005	29	(gwl-u)	1.6	(gwl-s)	16000	(mB)
1,1-Dichloroethene	3.2	65		1.1	0.051	0.0025		4000		0.005	0.051	(gwl-u)	0.005	(pql)	4000	(mB)
1,1-Dichloropropene										0.005						
1,2,3-Trichlorobenzene										0.02						
1,2,3-Trichloropropane								0.033		0.005	0.033	(mB)	0.033	(mB)	0.033	(mB)
1,2,4-Trichlorobenzene	0.48	1700		0.058	0.13	0.0065		35		0.01	0.13	(gwl-u)	0.01	(pql)	35	(mB)
1,2,4-Trimethylbenzene	24									0.02						
1,2-Dibromo-3-chloropropane								1.3		0.02	1.3	(mB)	1.3	(mB)	1.3	(mB)
1,2-Dibromoethane (EDB)	2	66			0.029	0.0016		0.5		0.02	0.029	(gwl-u)	0.02	(pql)	0.5	(mB)
1,2-Dichlorobenzene	6.1	380		0.078	0.39	0.02		7200		0.005	0.39	(gwl-u)	0.02	(gwl-s)	7200	(mB)
1,2-Dichloroethane (EDC)	4.2	38		0.04	0.042	0.0024		11		0.005	0.042	(gwl-u)	0.005	(pql)	11	(mB)
1,2-Dichloropropane	15	47		0.12	0.17	0.0098				0.005	0.17	(gwl-u)	0.0098	(gwl-s)		
1,3,5-Trimethylbenzene	25							800		0.02	800	(mB)	800	(mB)	800	(mB)
1,3-Dichlorobenzene	960									0.005						
1,3-Dichloropropane										0.005						
1,4-Dichloro-2-Butene										0.02						
1,4-Dichlorobenzene	5	620		0.1	0.5	0.026				0.005	0.5	(gwl-u)	0.026	(gwl-s)		
2,2-Dichloropropane										0.005						
2-Butanone	350000							48000		0.02	48000	(mB)	48000	(mB)	48000	(mB)
2-Chloroethyl Vinyl Ether										0.01						
2-Chlorotoluene								1600		0.02	1600	(mB)	1600	(mB)	1600	(mB)
2-Hexanone										0.02						
4-Chlorotoluene										0.02						

Table 4-2a
RI Unrestricted Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Unrestricted Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria – Groundwater Protection – Constants and Coefficients [a]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[c] (gwl-s)	Direct Contact [d]: Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method B, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), unrestricted land use (mg/kg)[f] (mB)	Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Unrestricted Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]: Unsaturated Soil		Saturated Soil		Most Stringent Unrestricted Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
4-Methyl-2-pentanone	11000							6400		0.02	6400	(mB)	6400	(mB)	6400	(mB)
Acetone		0.58		0.0016				72000		0.02	72000	(mB)	72000	(mB)	72000	(mB)
Acrolein	20							40		0.1	40	(mB)	40	(mB)	40	(mB)
Acrylonitrile	5							1.9		0.02	1.9	(mB)	1.9	(mB)	1.9	(mB)
Benzene	2.4	62		0.23	0.034	0.0018		18		0.005	0.034	(gwl-u)	0.005	(pql)	18	(mB)
Bromobenzene										0.005						
Bromochloromethane										0.005						
Bromodichloromethane	0.5	55		0.066	0.0063	0.00036		16		0.005	0.0063	(gwl-u)	0.005	(pql)	16	(mB)
Bromoethane																
Bromoform	140	130		0.022	3.4	0.18		130		0.005	3.4	(gwl-u)	0.18	(gwl-s)	130	(mB)
Bromomethane	13	9		0.26	0.076	0.0046		110		0.005	0.076	(gwl-u)	0.005	(pql)	110	(mB)
Carbon disulfide	400	46		1.2	5.3	0.26		8000		0.005	5.3	(gwl-u)	0.26	(gwl-s)	8000	(mB)
Carbon tetrachloride	0.5	150		1.3	0.015	0.00073		14		0.005	0.015	(gwl-u)	0.005	(pql)	14	(mB)
Chlorobenzene	100	220		0.15	3.9	0.2		1600		0.005	3.9	(gwl-u)	0.2	(gwl-s)	1600	(mB)
Chloroethane	12									0.005						
Chloroform	1.2	53		0.15	0.015	0.00084		800		0.005	0.015	(gwl-u)	0.005	(pql)	800	(mB)
Chloromethane	5.2	6			0.026	0.0017				0.005	0.026	(gwl-u)	0.005	(pql)		
cis-1,2-Dichloroethene (DCE)	160	36		0.17	1.6	0.091		160		0.005	1.6	(gwl-u)	0.091	(gwl-s)	160	(mB)
cis-1,3-Dichloropropene										0.005						
Dibromochloromethane	0.5	63		0.032	0.0069	0.00039		12		0.005	0.0069	(gwl-u)	0.005	(pql)	12	(mB)
Dibromomethane								800		0.005	800	(mB)	800	(mB)	800	(mB)
Dichlorodifluoromethane	9.9							16000		0.005	16000	(mB)	16000	(mB)	16000	(mB)
Ethylbenzene	2100	200		0.32	75	3.9		8000		0.005	75	(gwl-u)	3.9	(gwl-s)	8000	(mB)
Hexachlorobutadiene	0.2	54000		0.33	1.7	0.084		13		0.01	1.7	(gwl-u)	0.084	(gwl-s)	13	(mB)
Isopropylbenzene	720							8000		0.02	8000	(mB)	8000	(mB)	8000	(mB)
m,p-Xylenes										0.005						
Methylene chloride	94	10		0.09	0.54	0.034		130		0.01	0.54	(gwl-u)	0.034	(gwl-s)	130	(mB)
Methyliodide										0.5						
n-Butylbenzene										0.02						
n-Propylbenzene								8000		0.02	8000	(mB)	8000	(mB)	8000	(mB)
o-Xylene	440	240		0.21	18	0.95		16000		0.005	18	(gwl-u)	0.95	(gwl-s)	16000	(mB)
p-Isopropyltoluene										0.02						
sec-Butylbenzene										0.02						
Styrene	78	910		0.11	11	0.58		16000		0.005	11	(gwl-u)	0.58	(gwl-s)	16000	(mB)
tert-Butylbenzene										0.02						
Tetrachloroethene (PCE)	3.3	270		0.75	0.16	0.0079		480		0.005	0.16	(gwl-u)	0.0079	(gwl-s)	480	(mB)
Toluene	7300	140		0.27	190	10		6400		0.005	190	(gwl-u)	10	(gwl-s)	6400	(mB)
trans-1,2-Dichloroethene	130	38		0.39	1.4	0.076		1600		0.005	1.4	(gwl-u)	0.076	(gwl-s)	1600	(mB)
trans-1,3-Dichloropropene										0.005						
Trichloroethene (TCE)	1.6	94		0.42	0.031	0.0016		120		0.005	0.031	(gwl-u)	0.005	(pql)	120	(mB)
Trichlorofluoromethane	120							24000		0.005	24000	(mB)	24000	(mB)	24000	(mB)
Vinyl acetate	7800	5.3		0.021	38	2.6		80000		0.02	38	(gwl-u)	2.6	(gwl-s)	80000	(mB)
Vinyl chloride	0.5	19		1.1	0.0044	0.00022		0.67		0.005	0.005	(pql)	0.005	(pql)	0.67	(mB)
Xylenes (total)		230		0.28				16000			16000	(mB)	16000	(mB)	16000	(mB)
Naphthalene	83	1200		0.02	16	0.8		1600		0.001	16	(gwl-u)	0.8	(gwl-s)	1600	(mB)
Polycyclic Aromatic Hydrocarbons (PAHs)																
Acenaphthene	3.3	4900		0.0064	2.5	0.13		4800		0.0005	2.5	(gwl-u)	0.13	(gwl-s)	4800	(mB)
Acenaphthylene										0.0005						
Anthracene	9.6	23000		0.0027	34	1.7		24000		0.0005	34	(gwl-u)	1.7	(gwl-s)	24000	(mB)
Benzo(g,h,i)perylene										0.0005						
Fluoranthene	3.3	49000		0.00066	25	1.3		3200		0.0005	25	(gwl-u)	1.3	(gwl-s)	3200	(mB)
Fluorene	3	7700		0.0026	3.6	0.18		3200		0.0005	3.6	(gwl-u)	0.18	(gwl-s)	3200	(mB)
Phenanthrene										0.0005						
Pyrene	15	68000		0.00045	160	8		2400		0.0005	160	(gwl-u)	8	(gwl-s)	2400	(mB)
1-Methylnaphthalene								35		0.001	35	(mB)	35	(mB)	35	(mB)

Table 4-2a
RI Unrestricted Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Unrestricted Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria							Natural Background Concentrations (Ecology, 1994b) (mg/kg)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g]	Most Stringent Unrestricted Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]				Most Stringent Unrestricted Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
		Groundwater Protection					Direct Contact[d]									
		Constants and Coefficients[a]			Calculated Values											
		Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Unsaturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[c] (gwl-s)	Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method B, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), unrestricted land use (mg/kg)[f] (mB)	(back)	(pql)	Unsaturated Soil		Saturated Soil			
2-Methylnaphthalene								320		0.001	320	(mB)	320	(mB)	320	(mB)
Naphthalene	83	1200		0.02	16	0.8		1600		0.001	16	(gwl-u)	0.8	(gwl-s)	1600	(mB)
Total Naphthalenes																
Benz(a)anthracene	0.02	360000		0.00014	1.1	0.06		1.4		0.0005	1.1	(gwl-u)	0.056	(gwl-s)	1.4	(mB)
Benzo(a)pyrene	0.020	970000		0.000046	3	0.15		0.14		0.0005	0.14	(mB)	0.14	(mB)	0.14	(mB)
Benzo(b)fluoranthene	0.02	1200000		0.0046	3.7	0.19		1.4		0.0005	1.4	(mB)	0.19	(gwl-s)	1.4	(mB)
Benzo(k)fluoranthene	0.02	1200000		0.000034	3.7	0.19		14		0.0005	3.7	(gwl-u)	0.19	(gwl-s)	14	(mB)
Chrysene	0.02	400000		0.0039	1.2	0.062		140		0.0005	1.2	(gwl-u)	0.062	(gwl-s)	140	(mB)
Dibenzo(a,h)anthracene	0.02	1800000		0.0000006	5.6	0.28		0.14		0.0005	0.14	(mB)	0.14	(mB)	0.14	(mB)
Indeno(1,2,3-cd)pyrene	0.02	3500000		0.000066	11	0.55		1.4		0.0005	1.4	(mB)	0.55	(gwl-s)	1.4	(mB)
Total cPAHs TEQ	0.020	1300000			4.1	0.2		0.14		0.00076	0.14	(mB)	0.14	(mB)	0.14	(mB)
Other Semi-Volatile Organics																
1,2,4-Trichlorobenzene	0.48	1700		0.058	0.13	0.0065		35		0.01	0.13	(gwl-u)	0.01	(pql)	35	(mB)
1,2-Dichlorobenzene	6.1	380		0.078	0.39	0.02		7200		0.005	0.39	(gwl-u)	0.02	(gwl-s)	7200	(mB)
1,3-Dichlorobenzene	960									0.005						
1,4-Dichlorobenzene	5	620		0.1	0.5	0.026				0.005	0.5	(gwl-u)	0.026	(gwl-s)		
2,4,5-Trichlorophenol	3600	1600		0.00018	910	46		8000		0.01	910	(gwl-u)	46	(gwl-s)	8000	(mB)
2,4,6-Trichlorophenol	2.4	380		0.00032	0.15	0.0078		80		0.01	0.15	(gwl-u)	0.01	(pql)	80	(mB)
2,4-Dichlorophenol	73	150		0.00013	2	0.11		240		0.01	2	(gwl-u)	0.11	(gwl-s)	240	(mB)
2,4-Dimethylphenol	200	210		0.000082	7.4	0.38		1600		0.05	7.4	(gwl-u)	0.38	(gwl-s)	1600	(mB)
2,4-Dinitrophenol	1400	0.01		0.000018	5.6	0.4		160		0.2	5.6	(gwl-u)	0.4	(gwl-s)	160	(mB)
2-Chloronaphthalene	390							6400		0.01	6400	(mB)	6400	(mB)	6400	(mB)
2-Chlorophenol	37	390		0.016	2.4	0.12		400		0.01	2.4	(gwl-u)	0.12	(gwl-s)	400	(mB)
2-Methylphenol		91		0.000049				4000		0.01	4000	(mB)	4000	(mB)	4000	(mB)
2-Nitroaniline								800		0.02	800	(mB)	800	(mB)	800	(mB)
2-Nitrophenol										0.01						
3,3'-Dichlorobenzidine	2	720		0.00000016	0.23	0.012		2.2		0.1	0.23	(gwl-u)	0.1	(pql)	2.2	(mB)
3-Nitroaniline										0.02						
4,6-Dinitro-2-methylphenol										0.1						
4-Bromophenyl phenyl ether										0.01						
4-Chloro-3-methylphenol										0.01						
4-Chloroaniline		66		0.000014				5		0.01	5	(mB)	5	(mB)	5	(mB)
4-Chlorophenyl phenyl ether										0.01						
4-Methylphenol								400		0.01	400	(mB)	400	(mB)	400	(mB)
4-Nitroaniline										0.02						
4-Nitrophenol										0.1						
Benzoic acid		0.6		0.000063				320000		0.2	320000	(mB)	320000	(mB)	320000	(mB)
Benzyl alcohol								8000		0.02	8000	(mB)	8000	(mB)	8000	(mB)
Benzyl butyl phthalate	0.35	14000		0.000052	0.77	0.038		530		0.01	0.77	(gwl-u)	0.038	(gwl-s)	530	(mB)
Bis(2-chloro-1-methylethyl) ether	14							14			14	(mB)	14	(mB)	14	(mB)
Bis(2-chloroethoxy)methane										0.01						
Bis(2-chloroethyl) ether	0.53	76		0.00074	0.0084	0.00047		0.91		0.01	0.01	(pql)	0.01	(pql)	0.91	(mB)
Bis(2-ethylhexyl) phthalate	1.0	110000		0.0000042	17	0.86		71		0.1	17	(gwl-u)	0.86	(gwl-s)	71	(mB)
Carbazole		3400		0.00000063						0.0005						
Dibenzofuran								80		0.0005	80	(mB)	80	(mB)	80	(mB)
Diethyl phthalate	740	82		0.000019	12	0.69		64000		0.01	12	(gwl-u)	0.69	(gwl-s)	64000	(mB)
Dimethyl phthalate	1100000									0.01						
Di-n-butyl phthalate	140	1600		3.9E-08	36	1.8		8000		0.02	36	(gwl-u)	1.8	(gwl-s)	8000	(mB)
Di-n-octyl phthalate	0.20	83000000		0.0027	2600	130				0.01	2600	(gwl-u)	130	(gwl-s)		
Hexachlorobenzene	0.20	80000		0.054	2.5	0.12		0.63		0.01	0.63	(mB)	0.12	(gwl-s)	0.63	(mB)
Hexachlorobutadiene	0.20	54000		0.33	1.7	0.084		13		0.01	1.7	(gwl-u)	0.084	(gwl-s)	13	(mB)
Hexachlorocyclopentadiene	1100	200000		1.1	34000	1700		480		0.05	480	(mB)	480	(mB)	480	(mB)
Hexachloroethane	3	1800		0.16	0.94	0.047		71		0.01	0.94	(gwl-u)	0.047	(gwl-s)	71	(mB)
Isophorone	600	47		0.00027	6.8	0.39		1100		0.01	6.8	(gwl-u)	0.39	(gwl-s)	1100	(mB)
Nitrobenzene	690	120		0.00098	16	0.84		160		0.01	16	(gwl-u)	0.84	(gwl-s)	160	(mB)

Table 4-2a
RI Unrestricted Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Unrestricted Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria – Groundwater Protection – Constants and Coefficients[a]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use (mg/kg)[c] (gwl-s)	Direct Contact[d]: Soil, Method A, Unrestricted Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method B, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), unrestricted land use (mg/kg)[f] (mB)	Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Unrestricted Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]: Unsaturated Soil		Saturated Soil		Most Stringent Unrestricted Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
N-Nitroso-di-n-propylamine	0.32	24		0.000092	0.0024	0.00015		0.14		0.01	0.01	(pql)	0.01	(pql)	0.14	(mB)
N-Nitrosodiphenylamine	3.7	1300		0.00021	0.77	0.039		200		0.01	0.77	(gwl-u)	0.039	(gwl-s)	200	(mB)
Pentachlorophenol	3	590		0.000001	0.29	0.015		2.5		0.1	0.29	(gwl-u)	0.1	(pql)	2.5	(mB)
Phenol	216000	29		0.000016	1800	110		24000		0.03	1800	(gwl-u)	110	(gwl-s)	24000	(mB)
2,4-Dinitrotoluene	3.4	96		0.0000038	0.065	0.0035		160		0.01	0.065	(gwl-u)	0.01	(pql)	160	(mB)
2,6-Dinitrotoluene		69		0.000031				80		0.01	80	(mB)	80	(mB)	80	(mB)
Polychlorinated Biphenyls (PCBs)																
Aroclor 1016	0.005	110000			0.086	0.0043		5.6		0.01	0.086	(gwl-u)	0.01	(pql)	5.6	(mB)
Aroclor 1221										0.02						
Aroclor 1232										0.01						
Aroclor 1242										0.01						
Aroclor 1248										0.01						
Aroclor 1254	0.005							0.5		0.01	0.5	(mB)	0.5	(mB)	0.5	(mB)
Aroclor 1260	0.03	820000			3.8	0.19		0.5		0.01	0.5	(mB)	0.19	(gwl-s)	0.5	(mB)
Aroclor 1262										0.01						
Aroclor 1268										0.01						
Total PCBs	0.025	31000			0.12	0.0061	1	0.5		0.05	0.12	(gwl-u)	0.05	(pql)	0.5	(mB)
Dioxins/Furans[m]																
2,3,7,8-TCDD	1.00E-05	24500000		0.00416	3.8E-02	1.9E-03		1.1E-05		1.0E-06	1.1E-05	(mB)	1.1E-05	(mB)	1.1E-05	(mB)
1,2,3,7,8-PeCDD										2.5E-06						
1,2,3,4,7,8-HxCDD										2.5E-06						
1,2,3,6,7,8-HxCDD										2.5E-06						
1,2,3,7,8,9-HxCDD								1.6E-04		2.5E-06	1.6E-04	(mB)	1.6E-04	(mB)	1.6E-04	(mB)
1,2,3,4,6,7,8-HpCDD										2.5E-06						
OCDD										5.0E-06						
2,3,7,8-TCDF										1.0E-06						
1,2,3,7,8-PeCDF										2.5E-06						
2,3,4,7,8-PeCDF										2.5E-06						
1,2,3,4,7,8-HxCDF										2.5E-06						
1,2,3,6,7,8-HxCDF										2.5E-06						
1,2,3,7,8,9-HxCDF										2.5E-06						
2,3,4,6,7,8-HxCDF										2.5E-06						
1,2,3,4,6,7,8-HpCDF										2.5E-06						
1,2,3,4,7,8,9-HpCDF										2.5E-06						
OCDF										5.0E-06						
Total 2,3,7,8 TCDD (TEQ)								1.1E-05		6.25E-06	1.1E-05	(mB)	1.1E-05	(mB)	1.1E-05	(mB)

Table 4-2a
RI Unrestricted Land Use Soil Screening Levels

Notes:

1. Central Waterfront site-specific screening levels were developed consistent with Bellingham Bay nearshore cleanup Sites in coordination with the GP West RI/FS process.
2. Soil screening levels based on terrestrial ecological risk are not included because the entire Site will be capped and have institutional controls, and is thus excluded from terrestrial ecological risk evaluation.

Footnotes:

a. Values from Ecology's CLARC Database downloaded May 2012, except as noted. PCE and TCE values updated September 2012.
b. Calculated values from 3-phase model, per MTCA Equation 747-1, with groundwater value (Cw) as most stringent unrestricted groundwater screening level (Table 4-1), Dilution Factor = 20, and site-specific foc = 0.0078.
c. Calculated values from 3-phase model, per MTCA Equation 747-1, with groundwater value (Cw) as most stringent unrestricted groundwater screening level (Table 4-1), Dilution Factor = 1, and site-specific foc = 0.0078.
d. Direct contact criteria applicable for soils to 15-foot depth.
e. Because Site groundwater is not potable, many Method A soil cleanup levels are not applicable. Method A unrestricted cleanup levels used only if they are based on background or ARARs, or there are no corresponding Method B direct contact values, or they are based on generation of separate-phase petroleum. Soil leachability to groundwater is addressed separately.
f. Method B values are most restrictive of carcinogenic or non-carcinogenic values presented in Ecology's CLARC database.
g. From Columbia Analytical Services, Inc. (Kelso, WA) published method reporting limits.
h. Most stringent of unrestricted direct contact values and leachability value for respective soil type (unsaturated or saturated). Applicable to Landfill Footprint and C Street Properties Subareas.
i. Most stringent of unrestricted direct contact values for respective soil type. Applicable to Hilton Avenue Properties Subarea.
j. Risk-based TPH soil screening levels based on subarea-specific EPH data are not presented.
k. Site-specific value from Aspect and Anchor QEA (2011b).
l. pH range defining corrosive substances (State Department of Labor and Industries Division of Occupational Safety and Health Directive 13.00).
m. Koc and Hcc values for 2,3,7,8-TCDD are not provided in CLARC; therefore, values are from ATSDR's Toxicological Profile for Chlorinated Dibenzo-p-Dioxins (1998).

Selected screening levels

µg/L = microgram per liter
ATSDR = Agency for Toxic Substances and Disease Registry
ARAR = Applicable or Relevant and Appropriate Requirements
CLARC = Cleanup Levels and Risk Calculation
cPAH = carcinogenic polycyclic aromatic hydrocarbon
EPH = extractable petroleum hydrocarbon
L/kg = liter per kilogram
mg/kg = milligram per kilogram
MTCA = Model Toxics Control Act
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PCE = tetrachloroethylene
PQL = Practical Quantitation Level
RI/FS = Remedial Investigation/Feasibility Study
TCE = trichloroethylene
TEQ = toxic equivalent quotient
TPH = total petroleum hydrocarbon

Table 4-2b
RI Industrial Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Industrial Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria: Groundwater Protection: Constants and Coefficients[a]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] (gwl-s)	Direct Contact[d]: Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), Industrial land use (mg/kg)[f] (mC)	Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Industrial Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]: Unsaturated Soil		Saturated Soil		Most Stringent Industrial Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
Total Petroleum Hydrocarbons[j]																
Gasoline Range Hydrocarbons	800									5						
Diesel Range Hydrocarbons	500						2000			25	2000	(mA)	2000	(mA)	2000	(mA)
Oil Range Hydrocarbons	500						2000			100	2000	(mA)	2000	(mA)	2000	(mA)
Bunker C	500						2000				2000	(mA)	2000	(mA)	2000	(mA)
Total TPHs	800						2000				2000	(mA)	2000	(mA)	2000	(mA)
Heavy Metals																
Arsenic	5		*29*	*0*	2.9	0.15	20	88	7	0.5	7	(back)	7	(back)	20	(mA)
Cadmium	8.8		*6.7*	*0*	1.2	0.061		3500	1	0.02	1.2	(gwl-u)	1	(back)	3500	(mC)
Chromium (Total)	260		*1000*	*0*	5200	260		5250000		0.2	5200	(gwl-u)	260	(gwl-s)	5250000	(mC)
Chromium (VI)	50		*19*	*0*	19	0.96		11000	48		48	(back)	48	(back)	11000	(mC)
Copper	3.1		*22*	*0*	1.4	0.069		140000	36	0.1	36	(back)	36	(back)	140000	(mC)
Lead	8.1		*10000*	*0*	1600	81	1000		17	0.05	1000	(mA)	81	(gwl-s)	1000	(mA)
Mercury	0.06		*1700* [k]	*0.47*	2	0.1		1050	0.07	0.001	2	(gwl-u)	0.1	(gwl-s)	1050	(mC)
Nickel	8.2		*65*	*0*	11	0.54		70000	48	0.2	48	(back)	48	(back)	70000	(mC)
Selenium	71		*5*	*0*	7.4	0.38		18000		1	7.4	(gwl-u)	1	(pql)	18000	(mC)
Silver	1.9		*8.3*	*0*	0.32	0.016		18000		0.02	0.32	(gwl-u)	0.02	(pql)	18000	(mC)
Zinc	81		*62*	*0*	100	5		1100000	85	0.5	100	(gwl-u)	85	(back)	1100000	(mC)
Mercury Speciation																
Mercury (elemental)	1.9															
Methylmercury	0.025							350			350	(mC)	350	(mC)	350	(mC)
Conventionals and Other Metals																
Formaldehyde	1600							700000			700000	(mC)	700000	(mC)	700000	(mC)
pH	<6.2 or >8.5										<2.5 or >11.0	see footnote l	<2.5 or >11.0	see footnote l		
Manganese	0.1			*0*				490000	1200	0.05	490000	(mC)	490000	(mC)	490000	(mC)
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	74							5000		0.005	5000	(mC)	5000	(mC)	5000	(mC)
1,1,1-Trichloroethane	25000	*140*		*0.71*	680	34		7000000		0.005	680	(gwl-u)	34	(gwl-s)	7000000	(mC)
1,1,2 - Trichlorotrifluoroethane	2400							110000000		0.005	110000000	(mC)	110000000	(mC)	110000000	(mC)
1,1,2,2-Tetrachloroethane	4.0	*79*		*0.014*	0.065	0.0036		660		0.005	0.065	(gwl-u)	0.005	(pql)	660	(mC)
1,1,2-Trichloroethane	16.0	*75*		*0.037*	0.25	0.014		2300		0.005	0.25	(gwl-u)	0.014	(gwl-s)	2300	(mC)
1,1-Dichloroethane	5000	*53*		*0.23*	63	3.5		700000		0.005	63	(gwl-u)	3.5	(gwl-s)	700000	(mC)
1,1-Dichloroethene	3.2	*65*		*1.1*	0.051	0.0025		180000		0.005	0.051	(gwl-u)	0.005	(pql)	180000	(mC)
1,1-Dichloropropene										0.005						
1,2,3-Trichlorobenzene										0.02						
1,2,3-Trichloropropane								4.4		0.005	4.4	(mC)	4.4	(mC)	4.4	(mC)
1,2,4-Trichlorobenzene	0.48	*1700*		*0.058*	0.13	0.0065		4500		0.01	0.13	(gwl-u)	0.01	(pql)	4500	(mC)
1,2,4-Trimethylbenzene	52									0.02						
1,2-Dibromo-3-chloropropane								160		0.02	160	(mC)	160	(mC)	160	(mC)
1,2-Dibromoethane (EDB)	7.4	*66*			0.11	0.0059		66		0.02	0.11	(gwl-u)	0.02	(pql)	66	(mC)
1,2-Dichlorobenzene	6.1	*380*		*0.078*	0.39	0.02		320000		0.005	0.39	(gwl-u)	0.02	(gwl-s)	320000	(mC)
1,2-Dichloroethane (EDC)	37	*38*		*0.04*	0.37	0.022		1400		0.005	0.37	(gwl-u)	0.022	(gwl-s)	1400	(mC)
1,2-Dichloropropane	15	*47*		*0.12*	0.17	0.0098				0.005	0.17	(gwl-u)	0.0098	(gwl-s)		
1,3,5-Trimethylbenzene	54							35000		0.02	35000	(mC)	35000	(mC)	35000	(mC)
1,3-Dichlorobenzene	960									0.005						
1,3-Dichloropropane										0.005						
1,4-Dichloro-2-Butene										0.02						
1,4-Dichlorobenzene	5	*620*		*0.1*	0.5	0.026				0.005	0.5	(gwl-u)	0.026	(gwl-s)		
2,2-Dichloropropane										0.005						
2-Butanone	760000							2100000		0.02	2100000	(mC)	2100000	(mC)	2100000	(mC)
2-Chloroethyl Vinyl Ether										0.01						
2-Chlorotoluene								70000		0.02	70000	(mC)	70000	(mC)	70000	(mC)
2-Hexanone										0.02						
4-Chlorotoluene										0.02						

Table 4-2b
RI Industrial Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Industrial Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria							Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Industrial Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]				Most Stringent Industrial Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
		Groundwater Protection					Direct Contact[d]									
		Constants and Coefficients[a]			Calculated Values											
		Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] (gwl-s)	Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), Industrial land use (mg/kg)[f] (mC)			Unsaturated Soil		Saturated Soil			
4-Methyl-2-pentanone	24000							280000		0.02	280000	(mC)	280000	(mC)	280000	(mC)
Acetone		0.58		0.0016				3200000		0.02	3200000	(mC)	3200000	(mC)	3200000	(mC)
Acrolein	20							1800		0.1	1800	(mC)	1800	(mC)	1800	(mC)
Acrylonitrile	5							240		0.02	240	(mC)	240	(mC)	240	(mC)
Benzene	24.0	62		0.23	0.34	0.018		2400		0.005	0.34	(gwl-u)	0.018	(gwl-s)	2400	(mC)
Bromobenzene										0.005						
Bromochloromethane										0.005						
Bromodichloromethane	0.9	55		0.066	0.011	0.00064		2100		0.005	0.011	(gwl-u)	0.005	(pql)	2100	(mC)
Bromoethane																
Bromoform	140	130		0.022	3.4	0.18		17000		0.005	3.4	(gwl-u)	0.18	(gwl-s)	17000	(mC)
Bromomethane	28	9		0.26	0.16	0.01		4900		0.005	0.16	(gwl-u)	0.01	(gwl-s)	4900	(mC)
Carbon disulfide	870	46		1.2	12	0.56		350000		0.005	12	(gwl-u)	0.56	(gwl-s)	350000	(mC)
Carbon tetrachloride	1.6	150		1.3	0.047	0.0023		1900		0.005	0.047	(gwl-u)	0.005	(pql)	1900	(mC)
Chlorobenzene	220	220		0.15	8.5	0.44		70000		0.005	8.5	(gwl-u)	0.44	(gwl-s)	70000	(mC)
Chloroethane	120									0.005						
Chloroform	12	53		0.15	0.15	0.0084		35000		0.005	0.15	(gwl-u)	0.0084	(gwl-s)	35000	(mC)
Chloromethane	52	6			0.26	0.017				0.005	0.26	(gwl-u)	0.017	(gwl-s)		
cis-1,2-Dichloroethene (DCE)	350	36		0.17	3.5	0.2		7000		0.005	3.5	(gwl-u)	0.2	(gwl-s)	7000	(mC)
cis-1,3-Dichloropropene										0.005						
Dibromochloromethane	2.2	63		0.032	0.031	0.0017		1600		0.005	0.031	(gwl-u)	0.005	(pql)	1600	(mC)
Dibromomethane								35000		0.005	35000	(mC)	35000	(mC)	35000	(mC)
Dichlorodifluoromethane	22							700000		0.005	700000	(mC)	700000	(mC)	700000	(mC)
Ethylbenzene	2100	200		0.32	75	3.9		350000		0.005	75	(gwl-u)	3.9	(gwl-s)	350000	(mC)
Hexachlorobutadiene	0.2	54000		0.33	1.7	0.084		1700		0.01	1.7	(gwl-u)	0.084	(gwl-s)	1700	(mC)
Isopropylbenzene	1600							350000		0.02	350000	(mC)	350000	(mC)	350000	(mC)
m,p-Xylenes										0.005						
Methylene chloride	590	10		0.09	3.4	0.22		18000		0.01	3.4	(gwl-u)	0.22	(gwl-s)	18000	(mC)
Methyliodide										0.5						
n-Butylbenzene										0.02						
n-Propylbenzene								350000		0.02	350000	(mC)	350000	(mC)	350000	(mC)
o-Xylene	960	240		0.21	40	2.1		700000		0.005	40	(gwl-u)	2.1	(gwl-s)	700000	(mC)
p-Isopropyltoluene										0.02						
sec-Butylbenzene										0.02						
Styrene	780	910		0.11	110	5.8		700000		0.005	110	(gwl-u)	5.8	(gwl-s)	700000	(mC)
tert-Butylbenzene										0.02						
Tetrachloroethene (PCE)	3.3	270		0.75	0.16	0.0079		240		0.005	0.16	(gwl-u)	0.0079	(gwl-s)	240	(mC)
Toluene	7300	140		0.27	190	10		280000		0.005	190	(gwl-u)	10	(gwl-s)	280000	(mC)
trans-1,2-Dichloroethene	290	38		0.39	3.1	0.17		70000		0.005	3.1	(gwl-u)	0.17	(gwl-s)	70000	(mC)
trans-1,3-Dichloropropene										0.005						
Trichloroethene (TCE)	8.4	94		0.42	0.16	0.0086		1100		0.005	0.16	(gwl-u)	0.0086	(gwl-s)	1100	(mC)
Trichlorofluoromethane	260							1100000		0.005	1100000	(mC)	1100000	(mC)	1100000	(mC)
Vinyl acetate	17000	5.3		0.021	83	5.6		3500000		0.02	83	(gwl-u)	5.6	(gwl-s)	3500000	(mC)
Vinyl chloride	2.4	19		1.1	0.021	0.001		88		0.005	0.021	(gwl-u)	0.005	(pql)	88	(mC)
Xylenes (total)		230		0.28				700000			700000	(mC)	700000	(mC)	700000	(mC)
Naphthalene	83	1200		0.02	16	0.8		70000		0.001	16	(gwl-u)	0.8	(gwl-s)	70000	(mC)
Polycyclic Aromatic Hydrocarbons (PAHs)																
Acenaphthene	3.3	4900		0.0064	2.5	0.13		210000		0.0005	2.5	(gwl-u)	0.13	(gwl-s)	210000	(mC)
Acenaphthylene										0.0005						
Anthracene	9.6	23000		0.0027	34	1.7		1100000		0.0005	34	(gwl-u)	1.7	(gwl-s)	1100000	(mC)
Benzo(g,h,i)perylene										0.0005						
Fluoranthene	3.3	49000		0.00066	25	1.3		140000		0.0005	25	(gwl-u)	1.3	(gwl-s)	140000	(mC)
Fluorene	3	7700		0.0026	3.6	0.18		140000		0.0005	3.6	(gwl-u)	0.18	(gwl-s)	140000	(mC)
Phenanthrene										0.0005						
Pyrene	15	68000		0.00045	160	8		110000		0.0005	160	(gwl-u)	8	(gwl-s)	110000	(mC)

Table 4-2b
RI Industrial Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Industrial Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria — Groundwater Protection — Constants and Coefficients[a]: Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Calculated Values: Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] (gwl-s)	Direct Contact[d]: Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), Industrial land use (mg/kg)[f] (mC)	Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Industrial Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]: Unsaturated Soil		Saturated Soil		Most Stringent Industrial Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
1-Methylnaphthalene								4500		0.001	4500	(mC)	4500	(mC)	4500	(mC)
2-Methylnaphthalene								14000		0.001	14000	(mC)	14000	(mC)	14000	(mC)
Naphthalene	83	1200		0.02	16	0.8		70000		0.001	16	(gwl-u)	0.8	(gwl-s)	70000	(mC)
Total Naphthalenes																
Benz(a)anthracene	0.02	360000		0.00014	1.1	0.056		180		0.0005	1.1	(gwl-u)	0.056	(gwl-s)	180	(mC)
Benzo(a)pyrene	0.020	970000		0.000046	3	0.15		18		0.0005	3	(gwl-u)	0.15	(gwl-s)	18	(mC)
Benzo(b)fluoranthene	0.02	1200000		0.0046	3.7	0.19		180		0.0005	3.7	(gwl-u)	0.19	(gwl-s)	180	(mC)
Benzo(k)fluoranthene	0.02	1200000		0.000034	3.7	0.19		1800		0.0005	3.7	(gwl-u)	0.19	(gwl-s)	1800	(mC)
Chrysene	0.02	400000		0.0039	1.2	0.062		18000		0.0005	1.2	(gwl-u)	0.062	(gwl-s)	18000	(mC)
Dibenzo(a,h)anthracene	0.02	1800000		0.0000006	5.6	0.28		18		0.0005	5.6	(gwl-u)	0.28	(gwl-s)	18	(mC)
Indeno(1,2,3-cd)pyrene	0.02	3500000		0.000066	11	0.55		180		0.0005	11	(gwl-u)	0.55	(gwl-s)	180	(mC)
Total cPAHs TEQ	0.020	1300000			4.1	0.2		18		0.00076	4.1	(gwl-u)	0.2	(gwl-s)	18	(mC)
Other Semi-Volatile Organics																
1,2,4-Trichlorobenzene	0.48	1700		0.058	0.13	0.0065		4500		0.01	0.13	(gwl-u)	0.01	(pql)	4500	(mC)
1,2-Dichlorobenzene	6.1	380		0.078	0.39	0.02		320000		0.005	0.39	(gwl-u)	0.02	(gwl-s)	320000	(mC)
1,3-Dichlorobenzene	960									0.005						
1,4-Dichlorobenzene	5	620		0.1	0.5	0.026				0.005	0.5	(gwl-u)	0.026	(gwl-s)		
2,4,5-Trichlorophenol	3600	1600		0.00018	910	46		350000		0.01	910	(gwl-u)	46	(gwl-s)	350000	(mC)
2,4,6-Trichlorophenol	2.4	380		0.00032	0.15	0.0078		3500		0.01	0.15	(gwl-u)	0.01	(pql)	3500	(mC)
2,4-Dichlorophenol	73	150		0.00013	2	0.11		11000		0.01	2	(gwl-u)	0.11	(gwl-s)	11000	(mC)
2,4-Dimethylphenol	200	210		0.000082	7.4	0.38		70000		0.05	7.4	(gwl-u)	0.38	(gwl-s)	70000	(mC)
2,4-Dinitrophenol	1400	0.01		0.000018	5.6	0.4		7000		0.2	5.6	(gwl-u)	0.4	(gwl-s)	7000	(mC)
2-Chloronaphthalene	390							280000		0.01	280000	(mC)	280000	(mC)	280000	(mC)
2-Chlorophenol	37	390		0.016	2.4	0.12		18000		0.01	2.4	(gwl-u)	0.12	(gwl-s)	18000	(mC)
2-Methylphenol		91		0.000049				180000		0.01	180000	(mC)	180000	(mC)	180000	(mC)
2-Nitroaniline								35000		0.02	35000	(mC)	35000	(mC)	35000	(mC)
2-Nitrophenol										0.01						
3,3'-Dichlorobenzidine	2	720		0.00000016	0.23	0.012		290		0.1	0.23	(gwl-u)	0.1	(pql)	290	(mC)
3-Nitroaniline										0.02						
4,6-Dinitro-2-methylphenol										0.1						
4-Bromophenyl phenyl ether										0.01						
4-Chloro-3-methylphenol										0.01						
4-Chloroaniline		66		0.000014				660		0.01	660	(mC)	660	(mC)	660	(mC)
4-Chlorophenyl phenyl ether										0.01						
4-Methylphenol								18000		0.01	18000	(mC)	18000	(mC)	18000	(mC)
4-Nitroaniline										0.02						
4-Nitrophenol										0.1						
Benzoic acid		0.6		0.000063				14000000		0.2	14000000	(mC)	14000000	(mC)	14000000	(mC)
Benzyl alcohol								350000		0.02	350000	(mC)	350000	(mC)	350000	(mC)
Benzyl butyl phthalate	0.35	14000		0.000052	0.77	0.038		69000		0.01	0.77	(gwl-u)	0.038	(gwl-s)	69000	(mC)
Bis(2-chloro-1-methylethyl) ether	14							1900			1900	(mC)	1900	(mC)	1900	(mC)
Bis(2-chloroethoxy)methane										0.01						
Bis(2-chloroethyl) ether	0.53	76		0.00074	0.0084	0.00047		120		0.01	0.01	(pql)	0.01	(pql)	120	(mC)
Bis(2-ethylhexyl) phthalate	1	110000		0.0000042	17	0.86		9400		0.1	17	(gwl-u)	0.86	(gwl-s)	9400	(mC)
Carbazole		3400		0.00000063						0.0005						
Dibenzofuran								3500		0.0005	3500	(mC)	3500	(mC)	3500	(mC)
Diethyl phthalate	740	82		0.000019	12	0.69		2800000		0.01	12	(gwl-u)	0.69	(gwl-s)	2800000	(mC)
Dimethyl phthalate	1100000									0.01						
Di-n-butyl phthalate	140	1600		3.9E-08	36	1.8		350000		0.02	36	(gwl-u)	1.8	(gwl-s)	350000	(mC)
Di-n-octyl phthalate	0.2	83000000		0.0027	2600	130				0.01	2600	(gwl-u)	130	(gwl-s)		
Hexachlorobenzene	0.2	80000		0.054	2.5	0.12		82		0.01	2.5	(gwl-u)	0.12	(gwl-s)	82	(mC)
Hexachlorobutadiene	0.2	54000		0.33	1.7	0.084		1700		0.01	1.7	(gwl-u)	0.084	(gwl-s)	1700	(mC)
Hexachlorocyclopentadiene	1100	200000		1.1	34000	1700		21000		0.05	21000	(mC)	1700	(gwl-s)	21000	(mC)
Hexachloroethane	3.3	1800		0.16	0.94	0.047		3500		0.01	0.94	(gwl-u)	0.047	(gwl-s)	3500	(mC)

Table 4-2b
RI Industrial Land Use Soil Screening Levels

Analyte (by Group)	Most Stringent Industrial Land Use Groundwater Screening Level (µg/L) [See Table 4-1]	Applicable Soil Criteria							Natural Background Concentrations (Ecology, 1994b) (mg/kg) (back)	Applicable Practical Quantitation Level (PQL) for RI Analyses (mg/kg)[g] (pql)	Most Stringent Industrial Soil Screening Level for Landfill Footprint and C Street Properties Subareas (mg/kg)[h]				Most Stringent Industrial Soil Screening Level for Hilton Avenue Properties Subarea (mg/kg)[i]	
		Groundwater Protection					Direct Contact[d]									
		Constants and Coefficients[a]			Calculated Values											
		Koc (Soil Organic Carbon-Water Partitioning Coefficient) (L/kg)	Kd (Distribution Coefficient for metals) (L/kg)	Henrys Law Constant (unitless) (Hcc)	Unsaturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[b] (gwl-u)	Saturated Soil Concentration Protective of Leachability to Groundwater for Industrial Land Use (mg/kg)[c] (gwl-s)	Soil, Method A, Industrial Land Use, Table Value (mg/kg)[e] (mA)	Soil, Method C, Most-Restrictive Standard Formula Value, Direct Contact (ingestion only), Industrial land use (mg/kg)[f] (mC)			Unsaturated Soil		Saturated Soil			
Isophorone	600	47		0.00027	6.8	0.39		140000		0.01	6.8	(gwl-u)	0.39	(gwl-s)	140000	(mC)
Nitrobenzene	690	120		0.00098	16	0.84		7000		0.01	16	(gwl-u)	0.84	(gwl-s)	7000	(mC)
N-Nitroso-di-n-propylamine	0.32	24		0.000092	0.0024	0.00015		19		0.01	0.01	(pql)	0.01	(pql)	19	(mC)
N-Nitrosodiphenylamine	3.7	1300		0.00021	0.77	0.039		27000		0.01	0.77	(gwl-u)	0.039	(gwl-s)	27000	(mC)
Pentachlorophenol	3	590		0.000001	0.29	0.015		330		0.1	0.29	(gwl-u)	0.1	(pql)	330	(mC)
Phenol	216000	29		0.000016	1800	110		1100000		0.03	1800	(gwl-u)	110	(gwl-s)	1100000	(mC)
2,4-Dinitrotoluene	3.4	96		0.0000038	0.065	0.0035		7000		0.01	0.065	(gwl-u)	0.01	(pql)	7000	(mC)
2,6-Dinitrotoluene		69		0.000031				3500		0.01	3500	(mC)	3500	(mC)	3500	(mC)
Polychlorinated Biphenyls (PCBs)																
Aroclor 1016	0.005	110000			0.086	0.0043		250		0.01	0.086	(gwl-u)	0.01	(pql)	250	(mC)
Aroclor 1221										0.02						
Aroclor 1232										0.01						
Aroclor 1242										0.01						
Aroclor 1248										0.01						
Aroclor 1254	0.005							66		0.01	66	(mC)	66	(mC)	66	(mC)
Aroclor 1260	0.03	820000			3.8	0.19		66		0.01	3.8	(gwl-u)	0.19	(gwl-s)	66	(mC)
Aroclor 1262										0.01						
Aroclor 1268										0.01						
Total PCBs	0.025	31000			0.12	0.0061	10	66		0.05	0.12	(gwl-u)	0.05	(pql)	66	(mC)
Dioxins/Furans[m]																
2,3,7,8-TCDD	0.00001	24500000		0.00416	0.038	0.0019		1.5E-03		1.0E-06	1.5E-03	(mC)	1.5E-03	(mC)	0.0015	(mC)
1,2,3,7,8-PeCDD										2.5E-06						
1,2,3,4,7,8-HxCDD										2.5E-06						
1,2,3,6,7,8-HxCDD										2.5E-06						
1,2,3,7,8,9-HxCDD								2.1E-02		2.5E-06	2.1E-02	(mC)	2.1E-02	(mC)	0.021	(mC)
1,2,3,4,6,7,8-HpCDD										2.5E-06						
OCDD										5.0E-06						
2,3,7,8-TCDF										1.0E-06						
1,2,3,7,8-PeCDF										2.5E-06						
2,3,4,7,8-PeCDF										2.5E-06						
1,2,3,4,7,8-HxCDF										2.5E-06						
1,2,3,6,7,8-HxCDF										2.5E-06						
1,2,3,7,8,9-HxCDF										2.5E-06						
2,3,4,6,7,8-HxCDF										2.5E-06						
1,2,3,4,6,7,8-HpCDF										2.5E-06						
1,2,3,4,7,8,9-HpCDF										2.5E-06						
OCDF										5.0E-06						
Total 2,3,7,8 TCDD (TEQ)								1.5E-03		6.25E-06	1.5E-03	(mC)	1.5E-03	(mC)	0.0015	(mC)

Table 4-2b
RI Industrial Land Use Soil Screening Levels

Notes:
1. Central Waterfront site-specific screening levels were developed consistent with Bellingham Bay nearshore cleanup Sites in coordination with the GP West RI/FS process.
2. Soil screening levels based on terrestrial ecological risk are not included because the entire Site will be capped and have institutional controls, and is thus excluded from terrestrial ecological risk evaluation.

Footnotes:
a. Values from Ecology's CLARC Database downloaded May 2012, except as noted. PCE and TCE values updated September 2012.
b. Calculated values from 3-phase model, per MTCA Equation 747-1, with groundwater value (Cw) as most stringent industrial groundwater screening level (Table 4-1), Dilution Factor = 20, and Site-specific foc = 0.0078.
c. Calculated values from 3-phase model, per MTCA Equation 747-1, with groundwater value (Cw) as most stringent industrial groundwater screening level (Table 4-1), Dilution Factor = 1, and Site-specific foc = 0.0078.
d. Direct contact criteria applicable for soils to 15-foot depth.
e. Because Site groundwater is not potable, many Method A soil cleanup levels are not applicable. Method A industrial soil cleanup levels are used only if they are based on background or ARARs, or there are no corresponding Method C direct contact values, or they are based on generation of separate-phase petroleum. Soil leachability to groundwater is addressed separately.
f. Method C values are most restrictive of carcinogenic or non-carcinogenic values presented in Ecology's CLARC database.
g. From Columbia Analytical Services, Inc. (Kelso, WA) published method reporting limits.
h. Most stringent of unrestricted direct contact values and leachability value for respective soil type (unsaturated or saturated). Applicable to Landfill Footprint and C Street Properties Subareas.
i. Most stringent of unrestricted direct contact values for respective soil type. Applicable to Hilton Avenue Properties Subarea.
j. Risk-based TPH soil screening levels based on subarea-specific EPH data are not presented.
k. Site-specific value from Aspect and Anchor QEA (2011b).
l. pH range defining corrosive substances (State Department of Labor and Industries Division of Occupational Safety and Health Directive 13.00).
m. Koc and Hcc values for 2,3,7,8-TCDD are not provided in CLARC; therefore, values are from ATSDR's Toxicological Profile for Chlorinated Dibenzo-p-Dioxins (1998).

Selected screening levels

µg/L = microgram per liter
ATSDR = Agency for Toxic Substances and Disease Registry
ARAR = Applicable or Relevant and Appropriate Requirements
CLARC = Cleanup Levels and Risk Calculation
cPAH = carcinogenic polycyclic aromatic hydrocarbon
EPH = extractable petroleum hydrocarbon
L/kg = liter per kilogram
mg/kg = milligram per kilogram
MTCA = Model Toxics Control Act
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PCE = tetrachloroethylene
PQL = Practical Quantitation Level
RI/FS = Remedial Investigation/Feasibility Study
TCE = trichloroethylene
TEQ = toxic equivalent quotient
TPH = total petroleum hydrocarbon

Table 4-3
RI Air (Soil Vapor) and Landfill Gas Screening Levels

Analyte	MTCA Method B			Screening Level
	Indoor Air CUL		Air Quality	
	µg/m^3 Carcinogenic	µg/m^3 Non-Carcinogenic	µg/m^3	µg/m^3
Methane	n/a	n/a	10% LEL	10% LEL
C_5-C_8 Aliphatic Hydrocarbons	n/a	2,700	n/a	2,700
C_9-C_{12} Aliphatic Hydrocarbons	n/a	140	n/a	140
C_9-C_{12} Aromatic Hydrocarbons	n/a	180	n/a	180
1,3-Butadiene	0.08	0.91	n/a	0.08
2-Methylnapththalene	n/a	1.4	n/a	1.4
Benzene	0.32	14	n/a	0.32
Ethylbenzene	n/a	460	n/a	460
m,p -Xylene	n/a	46	n/a	46
Methyl Tert-Butyl Ether	n/a	1,400	n/a	1,400
Naphthalene	n/a	1.4	n/a	1.4
o-Xylene	n/a	46	n/a	46
Toluene	n/a	2,200	n/a	2,200

Notes:

1. Screening level for methane is based on WAC 173-340-750(3)(b)(iii).
2. Screening levels for all other analytes are derived from the 2009 Ecology "*Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action" (Publication No. 09-09-047).*
3. Screening levels have been rounded to two significant digits.

µg = microgram

µg/m^3 = microgram per cubic meter

CUL = cleanup level

LEL = lower explosive limit

n/a = not applicable or not available

MTCA = Model Toxics Control Act

WAC = Washington Administrative Code

Table 4-4
RI Sediment Screening Levels

Analyte	Protection of Benthic Community				Natural Background [a]	Regional Background [b]	PQL[c]	Bioaccumulation Trigger (DMMP)	Screening Levels[d]		
	SMS Criteria		if Applicable								
	SCO	CSL	LAET	2LAET					SCO	CSL	Spatial Scale of Applicability[e]
Metals	**mg/kg dw**		**n/a**		**mg/kg dw**			**n/a**	**mg/kg dw**		
Arsenic	57	93	n/a	n/a	11	nc	20	n/a	57	93	points
Cadmium	5.1	6.7	n/a	n/a	1	nc	1.7	n/a	5.1	6.7	points
Chromium	260	270	n/a	n/a	62	nc	87	n/a	260	270	points
Copper	390	390	n/a	n/a	44	nc	130	n/a	390	390	points
Lead	450	530	n/a	n/a	21	16	150	n/a	450	530	points
Mercury	0.41	0.59	n/a	n/a	0.2	nc	0.14	n/a	0.41	0.59	points
Nickel	211[f]	370[g]	n/a	n/a	50	nc	47	n/a	211[f]	370[g]	points
Silver	6.1	6.1	n/a	n/a	0.3	nc	2	n/a	6.1	6.1	points
Zinc	410	960	n/a	n/a	93	nc	137	n/a	410	960	points
Organometals											
Tributyl Tin as Ion	**n/a**		**n/a**		**n/a**			**µg/L**	**µg/L**		
Tributyl Tin as Ion (interstitial water)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.15[h]	0.15[h]	n/a	points
Tributyl Tin as Ion	**n/a**		**n/a**		**n/a**			**µg/kg dw**	**µg/kg dw**		
Tributyl Tin as Ion (bulk sediment)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	73[g]	73[g]	n/a	points
Organic Compounds											
Dioxins/Furans	**n/a**		**n/a**		**ng TEQ/kg dw**			**n/a**	**ng TEQ/kg dw**		
Total Dioxin/Furans	n/a	n/a	n/a	n/a	4	15	5	n/a	5	15	area average
Total Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)	**n/a**		**n/a**		**µg TEQ/kg dw**			**n/a**	**µg TEQ/kg dw**		
Total cPAHs site-wide	n/a	n/a	n/a	n/a	16	86	9	n/a	16	86	area average
Total PCBs	**mg/kg OC**		**µg/kg dw**		**µg/kg dw**			**n/a**	**µg/kg dw**		
Total PCBs	12	65	130	1000	3.5	nc	6	n/a	6	nc	area average
Organic Compounds with OC-normalized Benthic Criteria	**mg/kg OC**		**µg/kg dw**		**µg/kg dw**			**n/a**	**mg/kg OC** (screen against dry weight concentrations when TOC <0.5% or >3.5%)		
1,2,4-Trichlorobenzene	0.81	1.8	31	51	nc	nc	31	n/a	0.81	1.8	points
1,2-Dichlorobenzene	2.3	2.3	35	50	nc	nc	35	n/a	2.3	2.3	points
1,4-Dichlorobenzene	3.1	9.0	110	110	nc	nc	37	n/a	3.1	9.0	points
2-Methylnaphthalene	38	64	670	670	nc	nc	223	n/a	38	64	points
Acenaphthene	16	57	500	500	nc	nc	167	n/a	16	57	points
Acenaphthylene	66	66	1,300	1,300	nc	nc	433	n/a	66	66	points
Anthracene	220	1,200	960	960	nc	nc	320	n/a	220	1,200	points
Benzo(a)anthracene	110	270	1,300	1,600	nc	nc	433	n/a	110	270	points
Benzo(a)pyrene	99	210	1,600	1,600	nc	nc	533	n/a	99	210	points
Benzo(g,h,i)perylene	31	78	670	720	nc	nc	223	n/a	31	78	points
Benzofluoranthenes (total)	230	450	3,200	3,600	nc	nc	1,067	n/a	230	450	points
Bis(2-ethylhexyl)phthalate	47	78	1,300	3,100	nc	nc	433	n/a	47	78	points
Butylbenzyl phthalate	4.9	64	63	900	nc	nc	21	n/a	4.9	64	points
Chrysene	110	460	1,400	2,800	nc	nc	467	n/a	110	460	points
Dibenzo(a,h)anthracene	12	33	230	230	nc	nc	77	n/a	12	33	points
Dibenzofuran	15	58	540	540	nc	nc	180	n/a	15	58	points
Diethyl phthalate	61	110	200	1,200	nc	nc	67	n/a	61	110	points
Dimethyl phthalate	53	53	71	160	nc	nc	24	n/a	53	53	points
Di-n-butyl phthalate	220	1,700	1,400	5,100	nc	nc	467	n/a	220	1,700	points
Di-n-octyl phthalate	58	4,500	6,200	6,200	nc	nc	2,067	n/a	58	4,500	points

Table 4-4
RI Sediment Screening Levels

Analyte	Protection of Benthic Community: SMS Criteria SCO	SMS Criteria CSL	if Applicable LAET	if Applicable 2LAET	Natural Background [a]	Regional Background [b]	PQL[c]	Bioaccumulation Trigger (DMMP)	Screening Levels[d] SCO	Screening Levels[d] CSL	Spatial Scale of Applicability[e]
Fluoranthene	160	1,200	1,700	2,500	nc	nc	567	n/a	160	1,200	points
Fluorene	23	79	540	540	nc	nc	180	n/a	23	79	points
Hexachlorobenzene	0.38	2.3	22	70	nc	nc	22	n/a	0.38	2.3	points
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2	11	120	nc	nc	11	n/a	3.9	6.2	points
Indeno(1,2,3-c,d)pyrene	34	88	600	690	nc	nc	200	n/a	34	88	points
Naphthalene	99	170	2,100	2,100	nc	nc	700	n/a	99	170	points
N-Nitrosodiphenylamine	11	11	28	40	nc	nc	28	n/a	11	11	points
Phenanthrene	100	480	1,500	1,500	nc	nc	500	n/a	100	480	points
Pyrene	1,000	1,400	2,600	3,300	nc	nc	867	n/a	1,000	1,400	points
Total HPAHs	960	5,300	12,000	17,000	nc	nc	nc	n/a	960	5,300	points
Total LPAHs	370	780	5,200	5,200	nc	nc	nc	n/a	370	780	points
Organic Compounds with Dry Weight-based Benthic Criteria	**µg/kg dw**		**n/a**		**µg/kg dw**			**n/a**	**µg/kg dw**		
2,4-Dimethylphenol	29	29	n/a	n/a	nc	nc	29	n/a	29	29	points
2-Methylphenol (o-Cresol)	63	63	n/a	n/a	nc	nc	63	n/a	63	63	points
4-Methylphenol (p-Cresol)	670	670	n/a	n/a	nc	nc	223	n/a	670	670	points
Benzoic Acid	650	650	n/a	n/a	nc	nc	217	n/a	650	650	points
Benzyl alcohol	57	73	n/a	n/a	nc	nc	57	n/a	57	73	points
Pentachlorophenol	360	690	n/a	n/a	nc	nc	120	n/a	360	690	points
Phenol	420	1,200	n/a	n/a	nc	nc	140	n/a	420	1,200	points
Benthic Toxicity											
Bioassay[i]	SCO	CSL	n/a	n/a	n/a	n/a	n/a	n/a	SCO	CSL	points

Notes:

a. Natural Background values are derived from the SCUM II, Table 11-1 (Ecology 2013).

b. Calculated for Bellingham Bay based on preliminary data from the Bellingham Bay Ecology Study (2014).

c. PQLs are based on reporting limits at the I&J Waterway Site (Anchor QEA 2014) and recommended PQLs in the SCUM II guidance document.

d. Screening levels are determined based on the maximum of: 1) the risk-based threshold concentration for protection of the benthic community; 2) natural (SCO) or regional (CSL) background; or 3) PQL. Risk-based concentrations may be calculated for developing final cleanup levels (see footnote f).

e. Screening levels are applied to points; however, cleanup levels are applied to the appropriate spatial scale. Cleanup levels for protection of human health are applied to average concentrations, and cleanup levels for protection of the benthic community are applied to point concentrations.

f. Site-specific preliminary sediment cleanup level for nickel developed for I&J Waterway (Anchor QEA 2017).

g. The former DMMP BT/ML for nickel is 370 mg/kg dw.

h. DMMP bioaccumulation trigger is 0.15 µg/L in interstitial water. The bulk sediment measurement is used when porewater extraction cannot be accomplished and is 73 µg/kg dw.

i. Bioassays are evaluated based on the criteria in SMS (WAC 173-204-562(3)).

2LAET = second lowest apparent effects threshold
BT/ML = Bioaccumulation Trigger/Maximum Level
cPAH = carcinogenic polycyclic aromatic hydrocarbon
CSL = Cleanup Screening Level
DMMP = Dredged Material Management Program
dw = dry weight
HPAH = high-molecular-weight polycyclic aromatic hydrocarbon
kg = kilogram
LAET = lowest apparent effects threshold
LPAH = low-molecular-weight polycyclic aromatic hydrocarbon
mg/kg = milligram per kilogram
n/a = not applicable
nc = not calculated
ng = nanogram
ng/kg = nanogram per kilogram
OC = organic carbon
PCB = polychlorinated biphenyl
PQL = Practical Quantitation Limit
RBC = risk-based concentration
SCO = Sediment Cleanup Objective
SCUM = Sediment Cleanup Users Manual
SMS = Sediment Management Standards
SL = screening level
TEQ = toxic equivalent quotient
TOC = total organic carbon
µg = microgram
µg/kg = microgram per kilogram

Table Notes
Section 6: Conceptual Site Model

General Notes and Definitions for Gas Chemistry Tables (6-2a, 6-2b, 6-2c, 6-2d)

Bold indicates a measurement exceeding the LEL for methane (5% by volume in air)
Units = % by volume in air
LEL = lower explosive limit
PID = photo-ionization detector
ppm = parts per million
VOC = volatile organic compound

General Notes and Definitions for Groundwater Chemistry Tables (6-3a, 6-3b, 6-3c, 6-5a, 6-5b, 6-6, 6-7, 6-11, 6-12)

Detected concentration is greater than Central Waterfront Most Stringent Water screening level
Bold = Detected result
J = Estimated value
NJ = Result is detected with presumptive evidence and is an estimated value.
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
N = normal field sample
FD = field duplicate
μg/L = microgram per liter
cPAH = carcinogenic polycyclic aromatic hydrocarbon
mg/kg = milligram per kilogram
TEQ = toxics equivalent quotient
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)
1. Groundwater analyses for diesel and motor oil range hydrocarbons without silica gel cleanup are not used for comparison to screening levels as use of silica gel cleanup is the appropriate method for this site (Central Waterfront RI/FS Work Plan Addendum No. 5, Anchor QEA, 2012).

General Notes and Definitions for Soil Chemistry Tables (6-4, 6-9, 6-10)

Detected concentration is greater than Central Waterfront Most Stringent Soil screening level
Bold = Detected result
J = Estimated value
NJ = Result is detected with presumptive evidence and is an estimated value.
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
N = normal field sample
FD = field duplicate
mg/kg = milligram per kilogram
cPAH = carcinogenic polycyclic aromatic hydrocarbon
TEQ = toxics equivalent quotient

Table 6-1
Summary of Contaminants of Concern and Sources by Subarea

Contaminants of Concern	Principle Source(s)	Source Control Status
Landfill and Perimeter Subarea		
Landfill refuse	Municipal landfill from 1965 to 1980s	Landfill refuse placement was terminated in the 1970s. Most of the landfill footprint is currently paved or covered by a warehouse with a passive landfill gas collection system.
Landfill associated gas (e.g., methane)		
Metals, TPH-G, TPH-D, TPH-MO, PAHs, Benzene, and BEHP in groundwater		
C Street Properties Subarea		
TPH-G, TPH-D, and TPH-MO in soil and groundwater	Former Chevron Bulk Fuel Terminal and UST operations	Former Chevron Bulk Fuel Terminal ceased operations in 1985 and the terminal was demolished in the 1990s.
PAHs, Benzene, and other VOCs in soil and groundwater		
Metals in soil and groundwater	Former foundry, boat maintenance and washing areas, and cement plant	Boat maintenance and storage operations are the only historical operations currently in place.
Metals in sediment adjacent to Colony Wharf dock	Former foundry and boat washing/storage area	Metals in sediments will be addressed as part of the Whatcom Waterway cleanup project.
Hilton Avenue Properties Subarea [1]		
TPH-G in soil	Former Time Oil Bulk Fuel Terminal and UST operations	Former Time Oil Bulk Fuel Terminal ceased operations and was demolished in the 1980s.
PAHs in soil	Former on-site burning of materials from the sawmill demolition and an Olivine facility experimental incinerator that operated from 1981 to 1982	Former sawmill and Olivine processing plant have ceased operations.
Metals in soil	Former Olivine processing plant (source of metals)	Former Olivine processing plant ceased operation in the 1990s.

Notes:

1. No COCs have been carried forward for groundwater in the Hilton Avenue Properties. See Section 6.3.1.2.

BEHP = bis(2-ethylhexyl)phthalate
PAH = polycyclic aromatic hydrocarbon
TPH = total petroleum hydrocarbons
TPH-D = total petroleum hydrocarbons - diesel range
TPH-G = total petroleum hydrocarbons - gasoline range
TPH-MO = total petroleum hydrocarbons - motor oil range
UST = underground storage tank
VOC = volatile organic compound

Table 6-2a
Landfill Gas Monitoring Data – 2001

Location ID	Sampling Time	% of LEL	PID	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Comments
C-Street Area Monitoring Locations							
RMW-16	15:46	6	--	20.8	0	2	Well in good condition.
	15:46:30	81	--	17.4	0	5	
	15:47	229	1.2	10.4	241	16	
	15:49	4	--	1.7	219	28	
	15:50	9	--	1.4	177	28	
	15:51	13	2.1	1.4	149	28	
RMW-12 (B)	13:12	293	--	19.8	150	--	Well in good condition.
	13:12:30	66	0	4.9	207	2	
	13:14	86	--	7.3	625	2	
	13:15	90	--	6.5	567	1	
	13:16	91	--	6.2	582	--	
	13:17	92	0	6.1	612	--	
MW-8 (B)	14:21	276		15.0	300	10	Well in good condition, H2S odor.
	14:21:30	93	0	6.1	250	29	
	14:23	119	--	8.8	400	21	
	14:24	138	--	9.6	383	17	
	14:25	147	--	10.2	304	14	
	14:26	157	0	11.0	417	11	
MW-5 (B)	12:50	273	--	18.5	--	--	Well in good condition.
	12:50:30	80	--	7.1	410	--	
	12:51	59	0	4.9	376	--	
	12:52	90	--	8.3	665	--	
	12:53	81	--	7.1	671	--	
	12:54	78	--	6.9	735	--	
	12:56	75	0	6.5	831	--	
MW-4 (B)	14:36	0	--	20.8	0	0	Well in good condition.
	14:37	2	5.1	18.3	1	0	
	14:39	3	--	15.8	2	0	
	14:40	3	--	15.8	1	0	
	14:41	3	5.1	15.8	1	0	
MW-10 (B)	14:00	0	--	12.2	0	0	Well in good condition.
	14:01	2	7.6	16.1	0	0	
	14:03	3	--	12.6	0	0	
	14:04	2	--	12.4	0	0	
	14:05	3	9.7	12.4	0	0	
RMW-18	12:25	2	--	18.5	--	--	Well in good condition.
	12:26	4	--	16.8	--	--	
	12:27	4	--	13.8	--	--	
	12:28	5	--	10.8	--	--	
	12:29	5	--	10.4	--	--	
	12:31	5	10.1	10.2	--	--	

Table 6-2a
Landfill Gas Monitoring Data – 2001

Location ID	Sampling Time	% of LEL	PID	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Comments
Hilton Avenue Area Monitoring Locations							
RMW-9	16:46	337	--	18.8	100	5	Well in good condition.
	16:47	83	0	4.8	146	12	
	16:48	59	--	3.8	166	12	
	16:49	64	--	3.0	55	12	
	16:50	59	0	2.5	28	12	
MW-1 (E)	17:15	8	0	20.8	0	0	Well in good condition.
	17:17	3	0	20.7	0	0	
RMW-14	16:03	0	--	20.9	0	0	Well in good condition.
	16:04	2	13.5	19.5	0	0	
	16:06	3	--	16.8	1	0	
	16:07	3	--	16.7	0	0	
	16:08	3	11.0	16.7	0	0	
RMW-10	16:31	0	--	20.9	0	1	Well in good condition.
	16:32	3	7.4	20.0	0	0	
	16:34	2	--	20.4	0	0	
	16:35	1	5.8	20.4	0	0	
RMW-15	17:00	0	--	20.9	0	0	Well in good condition.
	17:01	0	30.3	20.9	0	0	
	17:02	0	--	20.8	0	0	
	17:03	0	--	20.8	0	0	
	17:04	0	24.3	20.8	0	0	

Notes:
Sampling was conducted on April 20, 2001.

Table 6-2b
Landfill Gas Monitoring Data – 2007/2008

Location ID	Date	Oxygen (%)	% of LEL	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	VOC (ppm)
GP Warehouse – North	9/17/2007	19.9	0.0	0.0	0.0	0.2
GP Warehouse – North Central	9/17/2007	19.7	**6.0**	1.0	0.0	0.7
GP Warehouse – South	9/17/2007	0.7	**42.0**	0.0	0.0	1.3
GP Warehouse – South Central	9/17/2007	19.1	0.0	0.0	0.0	0.2
MW-1(E)	9/17/2007	18.8	0.0	0.0	0.0	0.0
MW-7(B)	10/12/2007	20.3	**58.0**	1.0	0.0	0.0
MW-8(B)	9/17/2007	7.7	**20.0**	0.0	0.0	0.0
MW-12(B)	9/17/2007	20.1	3.0	0.0	0.0	0.0
MW-53(C)	9/17/2007	18.4	0.0	0.0	0.0	0.0
MW-54(C)	9/17/2007	0.0	**20.0**	0.0	0.0	0.0
RMW-10	9/17/2007	18.9	0.0	0.0	0.0	0.0
RMW-14	9/17/2007	11.9	0.0	0.0	0.0	0.0
RMW-16	9/17/2007	0.7	0.0	0.0	0.0	0.0
RMW-20	9/17/2007	17.3	**13.0**	0.0	0.0	0.3
GP Warehouse – North	3/22/2008	20.9	0.0	0	0	0.0
GP Warehouse – North Central	3/22/2008	20.9	0.0	0	0	0.0
GP Warehouse – South	3/22/2008	20.9	0.0	0	0	0.0
GP Warehouse – South Central	3/22/2008	19.9	0.0	0	0	0.0
MW-1(E)	3/22/2008	20.6	3.0	0	0	0.0
MW-7(B)	3/22/2008	3.9	**52.0**	5	1	0.0
MW-12(B)	3/22/2008	20.9	0.0	0	0	0.0
MW-53(C)	3/22/2008	17.9	0.0	0	0	0.0
RMW-10	3/22/2008	12.0	**78.0**	0	0	0.0
RMW-14	3/22/2008	18.1	0.0	0	0	0.0
RMW-16	3/22/2008	10.9	0.0	0	0	0.0
RMW-20	3/22/2008	0.8	0.0	3	0	0.0
CWMW-2	4/3/2008	20.2	4.0	5	28	9.6
MW-1(B)	4/3/2008	0.0	5.0	194	356	846
MW-4(B)	4/3/2008	19.4	0.0	0	0	0.0
MW-8(B)	4/3/2008	5.5	0.0	0	0	0.0
MW-13(B)	4/3/2008	12.6	0.0	0	0	0.0
MW-43(C)	4/3/2008	20.9	0.0	0	0	0.0
MW-54(C)	4/3/2008	20.9	0.0	0	0	0.0
MW-65(C)	4/3/2008	16.7	0.0	0	0	0.0
MW-70(C)	4/3/2008	0.1	1.0	0	67	389
RMW-5	4/3/2008	0.2	0.0	0	0	0.0
RMW-7	4/3/2008	19.5	0.0	0	0	0.0
RMW-7D	4/3/2008	20.9	0.0	0	0	0.0
RMW-8	4/3/2008	0.0	0.0	6	55	0.0
RMW-9	4/3/2008	3.5	0.0	0	0	0.0

Table 6-2c
Landfill Gas Monitoring Data with Gas Monitor – 2007/2008

Well ID	Date	Start Time	Methane (% by volume)	Carbon Dioxide (% by volume)	Oxygen (% by volume)
GP Warehouse – North	5/12/2008	1800	0.0	0.0	20.9
GP Warehouse – North Central	5/12/2008	1810	0.0	0.7	20.7
GP Warehouse – South	5/12/2008	1830	0.0	0.2	20.3
GP Warehouse – South Central	5/12/2008	1820	0.0	0.4	20.5
CWMW-2	5/12/2008	1640	0.0	0.0	20.9
MW-1(B)	5/12/2008	1600	**8.2**	2.0	14.6
MW-1(E)	5/12/2008	1705	0.0	0.0	21.0
MW-7(B)	5/12/2008	1900	**52.1**	0.0	10.0
MW-8(B)	5/12/2008	1845	4.3	3.0	15.7
MW-70(C)	5/12/2008	1620	0.7	10.5	5.6
RMW-5	5/12/2008	1740	**59.5**	40.5	0.0
RMW-8	5/12/2008	1750	**86.1**	13.7	0.0
RMW-9	5/12/2008	1725	**62.9**	17.7	0.1
RMW-10	5/12/2008	1715	0.0	0.0	20.6
RMW-20	5/12/2008	1650	**7.2**	4.8	4.3

Notes:
Values shown are the maximum measured for methane and carbon dioxide; minimum measured for oxygen.

Table 6-2d
Supplemental RI Landfill Gas Monitoring Results

Well ID	Time Interval (minutes)	% of LEL	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	PID (ppm)
RMW-16	1	0	20.9	0	0	--
	2	0	20.9	0	0	--
	3	--	--	--	--	0.2-0.3
	4	0	20.9	0-6	0	--
	5	0	20.9	0	0	--
	6	--	--	--	--	0.2-0.4
	7	0	20.9	0-6	0	--
	8	0	20.9	0-6	0	--
	9	--	--	--	--	0.2-0.3
MW-12(B)	1	0	20.9	0	0	--
	2	0	20.9	0	0	--
	3	--	--	--	--	0.0
	4	0	20.9	0	0	--
	5	0	20.9	0	0	--
	6	--	--	--	--	0.0
	7	0	20.9	0	0	--
	8	0	20.9	0	0	--
	9	--	--	--	--	0.0
MW-5(B)	1	58	20.0	0	0	--
	2	0	20.9	0	0	--
	3	--	--	--	--	0.0
	4	0	20.9	0	0	--
	5	0	20.9	0	0	--
	6	--	--	--	--	0.0
	7	0	20.9	0	0	--
	8	0	20.9	0	0	--
	9	--	--	--	--	0.0-0.1

Notes:
Landfill gas monitoring performed on September 19, 2013.
MiniPro combustible gas meter used to measure % LEL, oxygen, carbon monoxide, and hydrogen sulfide.
Ion Science PhoCheck+ 1000Ex PID (10.6eV lamp) used to measure volatile compounds (PID).

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RGP-1(W)					RGP-2(W)			
	Location ID	RGP-1(W)	RGP-1(W)	RGP-1(W)	RGP-1(W)	RGP-1(W)	RGP-2(W)	RGP-2(W)	RGP-2(W)	RGP-2(W)
	Sample ID	RGP-1-W-41299	RGP-1-W-020999	RGP-1-W-020999B	RGP-1-W-70198	RGP-1-W-70198B	RGP-2-W-70198	RGP-2-W-70198B	RGP-2-W-70198C	RGP-2-W-70198D
	Sample Date	04/12/1999	02/09/1999	02/09/1999	07/01/1998	07/01/1998	07/01/1998	07/01/1998	07/01/1998	07/01/1998
	Sample Type	N	N	N	N	N	N	N	N	N
Analyte	Screening Level									
Metals (µg/L)										
Arsenic	5	**3**	**3**	**3**	**14**	**14**	**2**	**2**	**2**	**2**
Barium	--	**122**	**103**	**98**	--	--	--	--	--	--
Chromium	260	**93**	5 U	5 U	**5,090**	**5,130**	**19**	**15**	**17**	**16**
Chromium VI	50	110 U	60 U	60 U	--	--	--	--	--	--
Copper	3.1	2 U	2 U	2 U	**5**	4 U	2 U	2 U	2 U	2 U
Lead	8.1	1 U	1 U	1 U	**15**	**4**	**5**	1 U	1 U	1 U
Mercury	0.059	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	8.2	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U
Zinc	81	**168**	**10**	**7**	**57**	**22**	**40**	4 U	4 U	4 U
Metals, Dissolved (µg/L)										
Antimony	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)										
Acidity as calcium carbonate (CaCO3)	--	**530,000**	**500,000**	**500,000**	--	--	--	--	--	--
Alkalinity, bicarbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	--	--	--	--
Alkalinity, hydroxide as calcium carbonate (CaCO3)	--	--	--	--	--	--	--	--	--	--
Ammonia as nitrogen	--	**4,700**	**800**	**770**	--	--	--	--	--	--
Chloride	--	**26,000**	**16,000**	**16,000**	--	--	--	--	--	--
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	5 U	4 U	--	**7**	**6**	--	--
Calcium	--	**227,000**	**219,000**	**210,000**	**255,000**	**256,000**	**203,000**	**202,000**	**210,000**	**203,000**
Ferrous iron	--	**9,800**	**7,900**	**7,700**	**1,400**	--	**1,200**	**390**	--	--
Iron	--	**8,340**	**7,050**	**6,770**	**10,800**	**11,700**	**2,100**	**2,150**	**2,160**	**2,100**
Magnesium	--	**27,200**	**23,600**	**22,800**	**135,000**	**133,000**	**36,300**	**37,100**	**37,600**	**37,600**
Manganese	100	**2,380**	**2,660**	**2,560**	**2,460**	**2,430**	**450**	**466**	**475**	**497**
Nitrate + nitrite as nitrogen	--	10 U	10 U	10 U	--	--	--	--	--	--
Nitrate as nitrogen	--	--	--	--	--	--	--	--	--	--
Nitrite as nitrogen	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--
Sulfate	--	--	--	--	--	--	--	--	--	--
Sulfide	--	50 U	100 U	90 U	50 U	--	50 U	**4,100**	--	--

Table 6-3a
Landfill Groundwater Results

		RGP-1(W)					RGP-2(W)			
	Location ID	**RGP-1(W)**	**RGP-1(W)**	**RGP-1(W)**	**RGP-1(W)**	**RGP-1(W)**	**RGP-2(W)**	**RGP-2(W)**	**RGP-2(W)**	**RGP-2(W)**
	Sample ID	**RGP-1-W-41299**	**RGP-1-W-020999**	**RGP-1-W-020999B**	**RGP-1-W-70198**	**RGP-1-W-70198B**	**RGP-2-W-70198**	**RGP-2-W-70198B**	**RGP-2-W-70198C**	**RGP-2-W-70198D**
	Sample Date	**04/12/1999**	**02/09/1999**	**02/09/1999**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**									
Total dissolved solids	--	--	--	--	--	--	--	--	--	--
Total suspended solids	--	1000 U	**2,300**	**1,600**	--	--	--	--	--	--
Total organic carbon	--	**21,000**	**17,000**	**16,000**	--	--	--	--	--	--
Conventional Parameters, Dissolved (µg/L)										
Total dissolved solids	--	**940,000**	**960,000**	**940,000**	--	--	--	--	--	--
Total Petroleum Hydrocarbons (µg/L)										
Diesel range hydrocarbons	500	250 U	250 U	250 U	--	--	--	--	--	--
Gasoline range hydrocarbons	800	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	500	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)										
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	1 U	1 U	1 U	**1.4**	1 U	1 U	--	1 U	--
Acenaphthene	3.3	1 U	1 U	1 U	**2.4**	**1.2**	**2.4**	--	**1.7**	--
Acenaphthylene	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Anthracene	9.6	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Benzo(a)anthracene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Benzo(a)pyrene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Benzo(b)fluoranthene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Benzo(g,h,i)perylene	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Benzo(k)fluoranthene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Chrysene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Dibenzo(a,h)anthracene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Fluorene	3	1 U	1 U	1 U	**1.1**	1 U	**1.4**	--	1 U	--
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Naphthalene	83	**10**	**5**	**4.7**	**27**	**15**	1 U	--	1 U	--
Phenanthrene	--	1 U	1 U	1 U	**2**	**1.3**	1 U	--	1 U	--
Pyrene	15	1 U	1 U	1 U	**1.3**	1 U	1 U	--	1 U	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Semivolatile Organics (µg/L)										
1,2,4-Trichlorobenzene	0.48	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
1,2-Dichlorobenzene	6.1	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
1,3-Dichlorobenzene	960	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
1,4-Dichlorobenzene	5	1 U	1 U	1 U	**1.1**	1 U	**1 J**	--	1 U	--
2,2'-Oxybis (1-chloropropane)	14.3	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
2,4,5-Trichlorophenol	3,600	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
2,4,6-Trichlorophenol	2.4	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
2,4-Dichlorophenol	73.3	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	--
2,4-Dimethylphenol	200	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	--
2,4-Dinitrophenol	1,400	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	--
2,4-Dinitrotoluene	3.4	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
2,6-Dinitrotoluene	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
2-Chloronaphthalene	390	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
2-Chlorophenol	37.4	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
2-Methylphenol (o-Cresol)	--	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RGP-1(W)					RGP-2(W)			
		RGP-1(W) RGP-1-W-41299 04/12/1999 N	RGP-1(W) RGP-1-W-020999 02/09/1999 N	RGP-1(W) RGP-1-W-020999B 02/09/1999 N	RGP-1(W) RGP-1-W-70198 07/01/1998 N	RGP-1(W) RGP-1-W-70198B 07/01/1998 N	RGP-2(W) RGP-2-W-70198 07/01/1998 N	RGP-2(W) RGP-2-W-70198B 07/01/1998 N	RGP-2(W) RGP-2-W-70198C 07/01/1998 N	RGP-2(W) RGP-2-W-70198D 07/01/1998 N
2-Nitroaniline	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
2-Nitrophenol	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
3,3'-Dichlorobenzidine	2	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
3-Nitroaniline	--	6 U	6 U	6 U	6 U	6 U	6 U	--	6 U	--
4-Bromophenyl-phenyl ether	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
4-Chloro-3-methylphenol	--	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--
4-Chloroaniline	--	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	--
4-Chlorophenyl phenyl ether	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
4-Methylphenol (p-Cresol)	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
4-Nitroaniline	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
4-Nitrophenol	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
Benzoic acid	--	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	--
Benzyl alcohol	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
bis(2-Chloroethoxy)methane	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
bis(2-Chloroethyl)ether	0.53	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--
bis(2-Ethylhexyl)phthalate	1	1 U	**1.3**	1 U	**7.8**	**1.4**	**1.8**	--	1 U	--
Butylbenzyl phthalate	0.35	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Carbazole	--	1 U	1 U	1 U	**2**	**1.3**	1 U	--	1 U	--
Dibenzofuran	--	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Diethyl phthalate	740	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Dimethyl phthalate	1,100,000	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Di-n-butyl phthalate	140	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	--
Di-n-octyl phthalate	0.2	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Hexachlorobenzene	0.2	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--
Hexachlorocyclopentadiene	1,100	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
Hexachloroethane	3.3	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--
Isophorone	600	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Nitrobenzene	690	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
n-Nitrosodi-n-propylamine	0.32	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--
n-Nitrosodiphenylamine	3.7	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
Pentachlorophenol	3	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
Phenol	216,000	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	7.4	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,1,1-Trichloroethane	11,000	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,1,2,2-Tetrachloroethane	4	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1,100	--	2 U	2 U	2 U	--	2 U	2 U	--	--
1,1,2-Trichloroethane	7.9	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,1-Dichloroethane	2,300	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,1-Dichloroethene	3.2	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,1-Dichloropropene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,2,3-Trichlorobenzene	--	--	5 U	5 U	5 U	--	5 U	5 U	--	--
1,2,3-Trichloropropane	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--

Table 6-3a
Landfill Groundwater Results

		RGP-1(W)					RGP-2(W)			
	Location ID	**RGP-1(W)**	**RGP-1(W)**	**RGP-1(W)**	**RGP-1(W)**	**RGP-1(W)**	**RGP-2(W)**	**RGP-2(W)**	**RGP-2(W)**	**RGP-2(W)**
	Sample ID	**RGP-1-W-41299**	**RGP-1-W-020999**	**RGP-1-W-020999B**	**RGP-1-W-70198**	**RGP-1-W-70198B**	**RGP-2-W-70198**	**RGP-2-W-70198B**	**RGP-2-W-70198C**	**RGP-2-W-70198D**
	Sample Date	**04/12/1999**	**02/09/1999**	**02/09/1999**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**									
1,2,4-Trichlorobenzene	0.48	--	5 U	5 U	5 U	--	5 U	5 U	--	--
1,2,4-Trimethylbenzene	24	--	**3**	**2.9**	**7.3**	--	**3.4**	**4.7**	--	--
1,2-Dibromo-3-chloropropane	--	--	5 U	5 U	5 U	--	5 U	5 U	--	--
1,2-Dichlorobenzene	6.1	--	1 U	1 U	--	--	--	--	--	--
1,2-Dichloroethane	4.2	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,2-Dichloroethene, cis-	160	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,2-Dichloroethene, trans-	130	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,2-Dichloropropane	15	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,3,5-Trimethylbenzene (Mesitylene)	25	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,3-Dichlorobenzene	960	--	1 U	1 U	--	--	--	--	--	--
1,3-Dichloropropane	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,3-Dichloropropene, cis-	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,3-Dichloropropene, trans-	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
1,4-Dichloro-2-butene, trans-	--	--	5 U	5 U	5 U	--	5 U	5 U	--	--
1,4-Dichlorobenzene	5	--	1 U	1 U	--	--	--	--	--	--
2,2-Dichloropropane	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
2-Butanone (MEK)	350,000	--	5 U	5 U	5 U	--	5 U	5 U	--	--
2-Chloroethylvinyl ether	--	--	5 U	5 U	5 U	--	5 U	5 U	--	--
2-Chlorotoluene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
2-Hexanone (Methyl butyl ketone)	--	--	5 U	5 U	5 U	--	5 U	5 U	--	--
4-Chlorotoluene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Acetone	--	--	5 U	5 U	**5.5**	--	5 U	5 U	--	--
Acrolein	20	--	50 U	50 U	50 U	--	50 U	50 U	--	--
Acrylonitrile	5	--	5 U	5 U	5 U	--	5 U	5 U	--	--
Benzene	2.4	--	**1.2**	**1.1**	**4.1**	--	**1.9**	**2.1**	--	--
Bromobenzene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Bromochloromethane	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Bromodichloromethane	0.5	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Bromoform (Tribromomethane)	140	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Bromomethane (Methyl bromide)	13	--	2 U	2 U	2 U	--	2 U	2 U	--	--
Carbon disulfide	400	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Carbon tetrachloride (Tetrachloromethane)	0.5	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Chlorobenzene	100	--	**3.5**	**3.5**	**3.8**	--	**2.6**	**3**	--	--
Chloroethane	12	--	2 U	2 U	2 U	--	2 U	2 U	--	--
Chloroform	1.2	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Chloromethane	5.2	--	2 U	2 U	2 U	--	2 U	2 U	--	--
Cymene, p- (4-Isopropyltoluene)	--	--	1 U	1 U	**1.4**	--	1 U	1 U	--	--
Dibromochloromethane	0.5	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Dibromomethane	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Dichloromethane (Methylene chloride)	94	--	2 U	2 U	2 U	--	2 U	2 U	--	--
Ethyl bromide (Bromoethane)	--	--	2 U	2 U	2 U	--	2 U	2 U	--	--
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	--	1 U	1 U	**1.4**	--	1 U	1 U	--	--
Ethylene dibromide (1,2-Dibromoethane)	2	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	--	5 U	5 U	5 U	--	5 U	5 U	--	--
Isopropylbenzene (Cumene)	720	--	1 U	1 U	**2**	--	**2.1**	**2.4**	--	--

Table 6-3a
Landfill Groundwater Results

		RGP-1(W)					RGP-2(W)			
	Location ID	RGP-1(W)	RGP-1(W)	RGP-1(W)	RGP-1(W)	RGP-1(W)	RGP-2(W)	RGP-2(W)	RGP-2(W)	RGP-2(W)
	Sample ID	RGP-1-W-41299	RGP-1-W-020999	RGP-1-W-020999B	RGP-1-W-70198	RGP-1-W-70198B	RGP-2-W-70198	RGP-2-W-70198B	RGP-2-W-70198C	RGP-2-W-70198D
	Sample Date	04/12/1999	02/09/1999	02/09/1999	07/01/1998	07/01/1998	07/01/1998	07/01/1998	07/01/1998	07/01/1998
	Sample Type	N	N	N	N	N	N	N	N	N
Analyte	**Screening Level**									
m,p-Xylene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Methyl iodide (Iodomethane)	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11,000	--	5 U	5 U	5 U	--	5 U	5 U	--	--
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	**17**	**17**	--	--	--	--	--	--
n-Butylbenzene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
n-Propylbenzene	--	--	1 U	1 U	**1.9**	--	**1.9**	**2.3**	--	--
o-Xylene	440	--	1 U	1 U	**1**	--	1 U	1 U	--	--
sec-Butylbenzene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Styrene	78	--	1 U	1 U	1 U	--	1 U	1 U	--	--
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Tetrachloroethene (PCE)	3.3	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Toluene	7,300	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Trichloroethene (TCE)	1.6	--	1 U	1 U	1 U	--	1 U	1 U	--	--
Trichlorofluoromethane (Fluorotrichloromethane)	120	--	2 U	2 U	2 U	--	2 U	2 U	--	--
Vinyl acetate	7,800	--	5 U	5 U	5 U	--	5 U	5 U	--	--
Vinyl chloride	0.5	--	2 U	2 U	2 U	--	2 U	2 U	--	--
n-Alkanes and Isoprenoids (µg/L)										
n-Hexane (C6)	--	--	--	--	--	--	--	--	--	--

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RGP-3(W)					RGP-4(W)		RMW-1	
	Location ID	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-4(W)	RGP-4(W)	RMW-1	RMW-1
	Sample ID	RGP-3-W-41299	RGP-3-W-30999	RGP-3-W-20999	RGP-3-W-70198	RGP-3-W-70198B	RGP-4-W-70198	RGP-4-W-70198B	RMW-1-36262	RMW-1-36201
	Sample Date	04/12/1999	03/09/1999	02/09/1999	07/01/1998	07/01/1998	07/01/1998	07/01/1998	04/12/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N
Analyte	Screening Level									
Metals (µg/L)										
Arsenic	5	8	--	5 U	16	13	1 U	1	2	2
Barium	--	272	--	239	--	--	--	--	192	147
Chromium	260	5,120	--	1,760	9,780	10,100	72	73	280	44
Chromium VI	50	110 U	--	60 U	--	--	--	--	110 U	100 U
Copper	3.1	3	--	2 U	5	4 U	2 U	2 U	2 U	2 U
Lead	8.1	14	--	9	46	22	1	1 U	1 U	4
Mercury	0.059	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	8.2	10 U	--	10 U	10	20 U	10 U	10 U	10 U	10 U
Zinc	81	44	--	40	64	27	8	4 U	8	25
Metals, Dissolved (µg/L)										
Antimony	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)										
Acidity as calcium carbonate (CaCO3)	--	2,400,000	--	2,200,000	--	--	--	--	1,200,000	1,200,000
Alkalinity, bicarbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	--	--	--	--
Alkalinity, carbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	--	--	--	--
Alkalinity, hydroxide as calcium carbonate (CaCO3)	--	--	--	--	--	--	--	--	--	--
Ammonia as nitrogen	--	69,000	--	28,000	--	--	--	--	15,000	5,400
Chloride	--	460,000	--	260,000	--	--	--	--	190,000	110,000
Cyanide, Weak acid dissociable (WAD)	--	5 U	--	5 U	7	--	7	--	29	5 U
Calcium	--	137,000	--	148,000	144,000	152,000	596,000	599,000	504,000	526,000
Ferrous iron	--	7,400	--	6,900	1,200	--	1,200	--	1,800	1,100
Iron	--	6,000	--	8,980	8,350	8,910	190	70	1,150	1,470
Magnesium	--	161,000	--	244,000	141,000	140,000	103,000	100,000	103,000	110,000
Manganese	100	811	--	1,260	2,310	2,360	1,470	1,470	3,340	4,180
Nitrate + nitrite as nitrogen	--	50	--	25	--	--	--	--	48	80
Nitrate as nitrogen	--	--	--	--	--	--	--	--	--	--
Nitrite as nitrogen	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--
Sulfate	--	--	--	--	--	--	--	--	--	--
Sulfide	--	180	--	150	50	--	50 U	--	14,000	24,000

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RGP-3(W)					RGP-4(W)		RMW-1	
	Location ID	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-4(W)	RGP-4(W)	RMW-1	RMW-1
	Sample ID	RGP-3-W-41299	RGP-3-W-30999	RGP-3-W-20999	RGP-3-W-70198	RGP-3-W-70198B	RGP-4-W-70198	RGP-4-W-70198B	RMW-1-36262	RMW-1-36201
	Sample Date	04/12/1999	03/09/1999	02/09/1999	07/01/1998	07/01/1998	07/01/1998	07/01/1998	04/12/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N
Analyte	Screening Level									
Total dissolved solids	--	--	--	--	--	--	--	--	--	--
Total suspended solids	--	**3,900**	--	**8,100**	--	--	--	--	**3,600**	**4,500**
Total organic carbon	--	**380,000**	--	**170,000**	--	--	--	--	**47,000**	**32,000**
Conventional Parameters, Dissolved (µg/L)										
Total dissolved solids	--	**4,900,000**	--	**5,200,000**	--	--	--	--	**2,900,000**	**3,200,000**
Total Petroleum Hydrocarbons (µg/L)										
Diesel range hydrocarbons	500	**2,800**	--	**2,700**	--	--	--	--	**350**	**280**
Gasoline range hydrocarbons	800	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	500	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)										
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	**77**	**74**	**66**	**36**	**17**	1 U	1 UJ	**2.4**	**2.9**
Acenaphthene	3.3	**3.3**	**3.1**	**2.2**	1 U	1 U	**2**	**1.1 J**	**4.3**	**3.2**
Acenaphthylene	--	1 U	1 U	**1.1**	1 U	1 U	1 U	1 UJ	1 U	1 U
Anthracene	9.6	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Benzo(a)anthracene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Benzo(a)pyrene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Benzo(b)fluoranthene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Benzo(g,h,i)perylene	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Benzo(k)fluoranthene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Chrysene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Dibenzo(a,h)anthracene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Dibenzofuran	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Fluorene	3	**3.5**	**3.3**	**2**	1 U	1 U	1 U	1 UJ	**2.3**	**1.7**
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Naphthalene	83	**27**	**22**	**120 J**	**12**	**8**	1 U	1 UJ	**5.8**	**5.1**
Phenanthrene	--	**5.3**	**4.9**	**2.6**	**1.6**	**1**	1 U	1 UJ	**3.5**	**2.4**
Pyrene	15	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Semivolatile Organics (µg/L)										
1,2,4-Trichlorobenzene	0.48	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dichlorobenzene	6.1	1 U	**1.2**	**1.2**	1 U	1 U	1 U	1 UJ	1 U	1 U
1,3-Dichlorobenzene	960	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,4-Dichlorobenzene	5	**8.2**	**9.1**	**8.7**	**3.4**	**2.2**	1 U	1 UJ	1 U	1 U
2,2'-Oxybis (1-chloropropane)	14.3	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
2,4,5-Trichlorophenol	3,600	5 U	**35**	**34**	5 U	5 U	5 U	5 UJ	5 U	5 U
2,4,6-Trichlorophenol	2.4	5 U	**3.6 J**	**5.2**	5 U	5 U	5 U	5 UJ	5 U	5 U
2,4-Dichlorophenol	73.3	3 U	**21**	**19**	3 U	3 U	3 U	3 UJ	3 U	3 U
2,4-Dimethylphenol	200	**4**	2 U	3 U	3 U	3 U	3 U	3 UJ	3 U	3 U
2,4-Dinitrophenol	1,400	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U
2,4-Dinitrotoluene	3.4	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
2,6-Dinitrotoluene	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
2-Chloronaphthalene	390	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
2-Chlorophenol	37.4	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
2-Methylphenol (o-Cresol)	--	2 U	**1.1 J**	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RGP-3(W)					RGP-4(W)		RMW-1	
	Location ID	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-3(W)	RGP-4(W)	RGP-4(W)	RMW-1	RMW-1
	Sample ID	RGP-3-W-41299	RGP-3-W-30999	RGP-3-W-20999	RGP-3-W-70198	RGP-3-W-70198B	RGP-4-W-70198	RGP-4-W-70198B	RMW-1-36262	RMW-1-36201
	Sample Date	04/12/1999	03/09/1999	02/09/1999	07/01/1998	07/01/1998	07/01/1998	07/01/1998	04/12/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N
	Screening Level									
2-Nitroaniline	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
2-Nitrophenol	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
3,3'-Dichlorobenzidine	2	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
3-Nitroaniline	--	6 U	6 U	6 U	6 U	6 U	6 U	6 UJ	6 U	6 U
4-Bromophenyl-phenyl ether	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
4-Chloro-3-methylphenol	--	2 U	**10**	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
4-Chloroaniline	--	3 U	3 U	3 U	3 U	3 U	3 U	3 UJ	3 U	3 U
4-Chlorophenyl phenyl ether	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
4-Methylphenol (p-Cresol)	--	**5.7**	**54**	**84 J**	1 U	1 U	1 U	1 UJ	1 U	1 U
4-Nitroaniline	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
4-Nitrophenol	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
Benzoic acid	--	10 U	**39**	**58**	10 U	10 U	10 U	10 UJ	10 U	10 U
Benzyl alcohol	--	**2.6 J**	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
bis(2-Chloroethoxy)methane	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
bis(2-Chloroethyl)ether	0.53	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
bis(2-Ethylhexyl)phthalate	1	1 U	1 U	1 U	**2.8**	**1.8**	**1.4**	1 UJ	1 U	1 U
Butylbenzyl phthalate	0.35	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Carbazole	--	**1.5**	**1.9**	**1.4**	1 U	1 U	1 U	1 UJ	**1.1**	**1.2**
Dibenzofuran	--	**1.5**	**1.3**	1 U	1 U	1 U	1 U	1 UJ	**1.6**	**1.4**
Diethyl phthalate	740	**3.7**	**7.9**	**7.7**	1 U	1 U	1 U	1 UJ	1 U	1 U
Dimethyl phthalate	1,100,000	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Di-n-butyl phthalate	140	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U
Di-n-octyl phthalate	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Hexachlorobenzene	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
Hexachlorocyclopentadiene	1,100	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
Hexachloroethane	3.3	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
Isophorone	600	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Nitrobenzene	690	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
n-Nitrosodi-n-propylamine	0.32	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
n-Nitrosodiphenylamine	3.7	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Pentachlorophenol	3	5 U	**370 J**	**640 J**	5 U	5 U	5 U	5 UJ	5 U	5 U
Phenol	216,000	2 U	**11**	**17**	2 U	2 U	2 U	2 UJ	2 U	2 U
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	7.4	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,1,1-Trichloroethane	11,000	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,1,2,2-Tetrachloroethane	4	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1,100	--	10 U	4 U	2 U	--	2 U	--	--	2 U
1,1,2-Trichloroethane	7.9	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,1-Dichloroethane	2,300	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,1-Dichloroethene	3.2	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,1-Dichloropropene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,2,3-Trichlorobenzene	--	--	25 U	10 U	5 U	--	5 U	--	--	5 U
1,2,3-Trichloropropane	--	--	15 U	2 U	1 U	--	1 U	--	--	1 U

Table 6-3a
Landfill Groundwater Results

		RGP-3(W)					RGP-4(W)		RMW-1	
	Location ID	**RGP-3(W)**	**RGP-3(W)**	**RGP-3(W)**	**RGP-3(W)**	**RGP-3(W)**	**RGP-4(W)**	**RGP-4(W)**	**RMW-1**	**RMW-1**
	Sample ID	**RGP-3-W-41299**	**RGP-3-W-30999**	**RGP-3-W-20999**	**RGP-3-W-70198**	**RGP-3-W-70198B**	**RGP-4-W-70198**	**RGP-4-W-70198B**	**RMW-1-36262**	**RMW-1-36201**
	Sample Date	**04/12/1999**	**03/09/1999**	**02/09/1999**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**07/01/1998**	**04/12/1999**	**02/10/1999**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**									
1,2,4-Trichlorobenzene	0.48	--	25 U	10 U	5 U	--	5 U	--	--	5 U
1,2,4-Trimethylbenzene	24	--	**33**	**26**	**30**	--	**1.6**	--	--	1 U
1,2-Dibromo-3-chloropropane	--	--	25 U	10 U	5 U	--	5 U	--	--	5 U
1,2-Dichlorobenzene	6.1	--	5 U	2 U	--	--	--	--	--	1 U
1,2-Dichloroethane	4.2	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,2-Dichloroethene, cis-	160	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,2-Dichloroethene, trans-	130	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,2-Dichloropropane	15	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,3,5-Trimethylbenzene (Mesitylene)	25	--	5 U	**3.3**	**1.3**	--	1 U	--	--	1 U
1,3-Dichlorobenzene	960	--	5 U	2 U	--	--	--	--	--	1 U
1,3-Dichloropropane	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,3-Dichloropropene, cis-	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,3-Dichloropropene, trans-	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
1,4-Dichloro-2-butene, trans-	--	--	25 U	10 U	5 U	--	5 U	--	--	5 U
1,4-Dichlorobenzene	5	--	**16**	**11**	--	--	--	--	--	1 U
2,2-Dichloropropane	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
2-Butanone (MEK)	350,000	--	25 U	10 U	5 U	--	5 U	--	--	5 U
2-Chloroethylvinyl ether	--	--	25 U	10 U	5 U	--	5 U	--	--	5 U
2-Chlorotoluene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
2-Hexanone (Methyl butyl ketone)	--	--	25 U	10 U	5 U	--	5 U	--	--	5 U
4-Chlorotoluene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Acetone	--	--	25 U	10 U	5 U	--	5 U	--	--	5 U
Acrolein	20	--	250 U	100 U	50 U	--	50 U	--	--	50 U
Acrylonitrile	5	--	25 U	10 U	5 U	--	5 U	--	--	5 U
Benzene	2.4	--	**8.9**	**6.5**	**8.1**	--	**2.3**	--	--	1 U
Bromobenzene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Bromochloromethane	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Bromodichloromethane	0.5	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Bromoform (Tribromomethane)	140	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Bromomethane (Methyl bromide)	13	--	5 U	4 U	2 U	--	2 U	--	--	2 U
Carbon disulfide	400	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Carbon tetrachloride (Tetrachloromethane)	0.5	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Chlorobenzene	100	--	**6.1**	**4.2**	**1.9**	--	**2.3**	--	--	1 U
Chloroethane	12	--	5 U	4 U	2 U	--	2 U	--	--	2 U
Chloroform	1.2	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Chloromethane	5.2	--	5 U	4 U	2 U	--	2 U	--	--	2 U
Cymene, p- (4-Isopropyltoluene)	--	--	5 U	**2.4**	**2.9**	--	1 U	--	--	1 U
Dibromochloromethane	0.5	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Dibromomethane	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Dichloromethane (Methylene chloride)	94	--	10 U	4 U	2 U	--	2 U	--	--	2 U
Ethyl bromide (Bromoethane)	--	--	10 U	4 U	2 U	--	2 U	--	--	2 U
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	--	**590**	**340**	**66**	--	**1.4**	--	--	1 U
Ethylene dibromide (1,2-Dibromoethane)	2	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	--	25 U	10 U	5 U	--	5 U	--	--	5 U
Isopropylbenzene (Cumene)	720	--	5 U	**3.3**	**3.6**	--	**1.7**	--	--	1 U

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RGP-3(W)					RGP-4(W)		RMW-1	
		RGP-3(W) RGP-3-W-41299 04/12/1999 N	RGP-3(W) RGP-3-W-30999 03/09/1999 N	RGP-3(W) RGP-3-W-20999 02/09/1999 N	RGP-3(W) RGP-3-W-70198 07/01/1998 N	RGP-3(W) RGP-3-W-70198B 07/01/1998 N	RGP-4(W) RGP-4-W-70198 07/01/1998 N	RGP-4(W) RGP-4-W-70198B 07/01/1998 N	RMW-1 RMW-1-36262 04/12/1999 N	RMW-1 RMW-1-36201 02/10/1999 N
m,p-Xylene	--	--	**39**	**34**	**5.2**	--	**1.1**	--	--	1 U
Methyl iodide (Iodomethane)	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11,000	--	25 U	10 U	5 U	--	5 U	--	--	5 U
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	**39**	**26**	--	--	--	--	--	**6**
n-Butylbenzene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
n-Propylbenzene	--	--	**5.9**	**4.6**	**3.6**	--	**1.4**	--	--	1 U
o-Xylene	440	--	**7.7**	**7**	1 U	--	1 U	--	--	1 U
sec-Butylbenzene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Styrene	78	--	5 U	2 U	1 U	--	1 U	--	--	1 U
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Tetrachloroethene (PCE)	3.3	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Toluene	7,300	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Trichloroethene (TCE)	1.6	--	5 U	2 U	1 U	--	1 U	--	--	1 U
Trichlorofluoromethane (Fluorotrichloromethane)	120	--	5 U	4 U	2 U	--	2 U	--	--	2 U
Vinyl acetate	7,800	--	25 U	10 U	5 U	--	5 U	--	--	5 U
Vinyl chloride	0.5	--	5 U	4 U	2 U	--	2 U	--	--	2 U
n-Alkanes and Isoprenoids (µg/L)										
n-Hexane (C6)	--	--	--	--	--	--	--	--	--	--

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RMW-2 RMW-2 RMW-2-36262 04/12/1999 N	 RMW-2 RMW-2-36200 02/09/1999 N	RMW-2D RMW-2D RMW-2D-36262 04/12/1999 N	 RMW-2D RMW-2D-36200 02/09/1999 N	RMW-3D RMW-3D RMW-3D-10292013 10/29/2013 N	 RMW-3D MW-3D-0907 09/27/2007 N	 RMW-3D RMW-3D-36468 11/04/1999 N	 RMW-3D RMW-3D-36452 10/19/1999 N	 RMW-3D RMW-3D-36383 08/11/1999 N
Metals (µg/L)										
Arsenic	5	**2**	**3**	**2**	**2**	--	50 U	1 U	--	**1**
Barium	--	**268**	**264**	**12**	**15**	--	**6**	**9**	--	**11**
Chromium	260	**766**	**884**	**109**	**87**	--	**46**	**71**	--	**78**
Chromium VI	50	110 U	60 U	110 U	60 U	0.03 U	--	60 U	--	10 U
Copper	3.1	2 U	**4**	2 U	2 U	--	2 U	2 U	--	2 U
Lead	8.1	**8**	**26**	1 U	1 U	--	20 U	1 U	--	1 U
Mercury	0.059	0.1 U	**0.1**	0.1 U	0.1 U	--	0.1 U	0.1 U	--	0.1 U
Nickel	8.2	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U
Zinc	81	**20**	**71**	4 U	**7**	--	10 U	6 U	--	**14**
Metals, Dissolved (µg/L)										
Antimony	--	--	--	--	--	0.5 U	--	--	--	--
Arsenic	5	--	--	--	--	**0.4 J**	--	--	--	--
Barium	--	--	--	--	--	**8**	--	--	--	--
Beryllium	--	--	--	--	--	0.5 U	--	--	--	--
Cadmium	--	--	--	--	--	0.2 U	--	--	--	--
Chromium	260	--	--	--	--	**60**	--	--	--	--
Chromium VI	50	--	--	--	--	0.03 U	--	--	--	--
Copper	3.1	--	--	--	--	1 U	--	--	--	--
Lead	8.1	--	--	--	--	0.2 U	--	--	--	--
Mercury	0.059	--	--	--	--	0.02 U	--	--	--	--
Nickel	8.2	--	--	--	--	**1.22 J**	--	--	--	--
Selenium	--	--	--	--	--	**0.75 J**	--	--	--	--
Silver	--	--	--	--	--	0.5 U	--	--	--	--
Thallium	--	--	--	--	--	0.5 U	--	--	--	--
Zinc	81	--	--	--	--	10 U	--	--	--	--
Conventional Parameters (µg/L)										
Acidity as calcium carbonate (CaCO3)	--	**1,100,000**	**940,000**	**1,900,000**	**1,900,000**	--	**1,000,000**	**1,400,000**	--	**1,600,000**
Alkalinity, bicarbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	**1,000,000**	--	--	--
Alkalinity, carbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	1000 U	--	--	--
Alkalinity, hydroxide as calcium carbonate (CaCO3)	--	--	--	--	--	--	1000 U	--	--	--
Ammonia as nitrogen	--	**28,000**	**20,000**	**8,100**	**6,400**	--	--	**8,200**	--	**7,000**
Chloride	--	**180,000**	**180,000**	**1,900,000**	**2,300,000**	--	**526,000**	**1,300,000**	--	**1,200,000**
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	5 U	5 U	--	5 U	5 U	4 U	**5**
Calcium	--	**217,000**	**205,000**	**44,000**	**42,000**	--	**41,800**	**44,300**	--	**46,000**
Ferrous iron	--	**10,000**	**13,000**	**1,200**	**790**	--	--	**760**	--	**830**
Iron	--	**9,420**	**13,000**	**530**	**690**	--	--	**420**	--	**490**
Magnesium	--	**50,900**	**45,600**	**170,000**	**163,000**	--	**90,000**	**154,000**	--	**159,000**
Manganese	100	**1,720**	**1,820**	**29**	**39**	--	--	**11**	--	**14**
Nitrate + nitrite as nitrogen	--	**73**	**19**	**13**	10 U	--	10 U	10 U	--	10 U
Nitrate as nitrogen	--	--	--	--	--	--	10 U	--	--	--
Nitrite as nitrogen	--	--	--	--	--	--	10 U	--	--	--
Potassium	--	--	--	--	--	--	**74,100**	--	--	--
Sodium	--	--	--	--	--	--	**473,000**	**1,130,000**	--	**1,130,000**
Sulfate	--	--	--	--	--	--	**17,500**	**34,000**	--	--
Sulfide	--	**200**	100 U	**50**	100 U	--	--	50 U	--	**210**

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RMW-2		RMW-2D		RMW-3D				
	Location ID	RMW-2	RMW-2	RMW-2D	RMW-2D	RMW-3D	RMW-3D	RMW-3D	RMW-3D	RMW-3D
	Sample ID	RMW-2-36262	RMW-2-36200	RMW-2D-36262	RMW-2D-36200	RMW-3D-10292013	MW-3D-0907	RMW-3D-36468	RMW-3D-36452	RMW-3D-36383
	Sample Date	04/12/1999	02/09/1999	04/12/1999	02/09/1999	10/29/2013	09/27/2007	11/04/1999	10/19/1999	08/11/1999
	Sample Type	N	N	N	N	N	N	N	N	N
Total dissolved solids	--	--	--	--	--	--	**1,910,000**	--	--	--
Total suspended solids	--	**3,900**	**3,600**	**1,800**	**3,400**	**1,700**	**6,700**	**2,100**	--	**2,700**
Total organic carbon	--	**120,000**	**120,000**	**64,000**	**65,000**	--	**39,200**	**60,000**	--	**72,000**
Conventional Parameters, Dissolved (µg/L)										
Total dissolved solids	--	**1,700,000**	**1,800,000**	**5,400,000**	**6,500,000**	**2,260,000**	--	**1,800,000**	--	**3,600,000**
Total Petroleum Hydrocarbons (µg/L)										
Diesel range hydrocarbons	500	**780**	**760**	250 U	250 U	--	250 U	250 U	--	250 U
Gasoline range hydrocarbons	800	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	500	--	--	--	--	--	500 U	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)										
1-Methylnaphthalene	--	--	--	--	--	--	0.1 U	--	--	--
2-Methylnaphthalene	--	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Acenaphthene	3.3	**1.2**	**1.2**	1 U	1 U	--	0.1 U	1 U	--	1 U
Acenaphthylene	--	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Anthracene	9.6	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Benzo(a)anthracene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Benzo(a)pyrene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Benzo(b)fluoranthene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Benzo(g,h,i)perylene	--	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Benzo(k)fluoranthene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Chrysene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Dibenzo(a,h)anthracene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Dibenzofuran	--	--	--	--	--	--	0.1 U	--	--	--
Fluoranthene	3.3	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Fluorene	3	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Naphthalene	83	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Phenanthrene	--	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Pyrene	15	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	1 U	1 U	1 U	1 U	--	0.1 U	1 U	--	1 U
Semivolatile Organics (µg/L)										
1,2,4-Trichlorobenzene	0.48	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
1,2-Dichlorobenzene	6.1	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
1,3-Dichlorobenzene	960	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
1,4-Dichlorobenzene	5	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
2,2'-Oxybis (1-chloropropane)	14.3	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
2,4,5-Trichlorophenol	3,600	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
2,4,6-Trichlorophenol	2.4	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
2,4-Dichlorophenol	73.3	3 U	3 U	3 U	3 U	--	--	3 U	--	3 U
2,4-Dimethylphenol	200	3 U	3 U	3 U	3 U	--	--	3 U	--	3 U
2,4-Dinitrophenol	1,400	10 U	10 U	10 U	10 U	--	--	10 U	--	10 U
2,4-Dinitrotoluene	3.4	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
2,6-Dinitrotoluene	--	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
2-Chloronaphthalene	390	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
2-Chlorophenol	37.4	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
2-Methylphenol (o-Cresol)	--	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RMW-2		RMW-2D		RMW-3D				
		RMW-2 RMW-2-36262 04/12/1999 N	RMW-2 RMW-2-36200 02/09/1999 N	RMW-2D RMW-2D-36262 04/12/1999 N	RMW-2D RMW-2D-36200 02/09/1999 N	RMW-3D RMW-3D-10292013 10/29/2013 N	RMW-3D MW-3D-0907 09/27/2007 N	RMW-3D RMW-3D-36468 11/04/1999 N	RMW-3D RMW-3D-36452 10/19/1999 N	RMW-3D RMW-3D-36383 08/11/1999 N
2-Nitroaniline	--	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
2-Nitrophenol	--	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
3,3'-Dichlorobenzidine	2	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
3-Nitroaniline	--	6 U	6 U	6 U	6 U	--	--	6 U	--	6 U
4-Bromophenyl-phenyl ether	--	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
4-Chloro-3-methylphenol	--	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U
4-Chloroaniline	--	3 U	3 U	3 U	3 U	--	--	3 U	--	3 U
4-Chlorophenyl phenyl ether	--	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
4-Methylphenol (p-Cresol)	--	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
4-Nitroaniline	--	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
4-Nitrophenol	--	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
Benzoic acid	--	10 U	10 U	10 U	10 U	--	--	10 U	--	10 U
Benzyl alcohol	--	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
bis(2-Chloroethoxy)methane	--	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
bis(2-Chloroethyl)ether	0.53	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U
bis(2-Ethylhexyl)phthalate	1	1 U	**1.8**	1 U	1 U	--	--	1 U	--	1 U
Butylbenzyl phthalate	0.35	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Carbazole	--	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Dibenzofuran	--	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Diethyl phthalate	740	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Dimethyl phthalate	1,100,000	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Di-n-butyl phthalate	140	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	10 U	10 U	10 U	10 U	--	--	10 U	--	10 U
Di-n-octyl phthalate	0.2	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Hexachlorobenzene	0.2	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U
Hexachlorocyclopentadiene	1,100	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
Hexachloroethane	3.3	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U
Isophorone	600	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Nitrobenzene	690	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
n-Nitrosodi-n-propylamine	0.32	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U
n-Nitrosodiphenylamine	3.7	1 U	1 U	1 U	1 U	--	--	1 U	--	1 U
Pentachlorophenol	3	5 U	5 U	5 U	5 U	--	--	5 U	--	5 U
Phenol	216,000	2 U	2 U	2 U	2 U	--	--	2 U	--	2 U
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)										
1,1,1,2-Tetrachloroethane	7.4	--	1 U	--	1 U	--	--	--	--	--
1,1,1-Trichloroethane	11,000	--	1 U	--	1 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane	4	--	1 U	--	1 U	--	--	--	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1,100	--	2 U	--	2 U	--	--	--	--	--
1,1,2-Trichloroethane	7.9	--	1 U	--	1 U	--	--	--	--	--
1,1-Dichloroethane	2,300	--	1 U	--	1 U	--	--	--	--	--
1,1-Dichloroethene	3.2	--	1 U	--	1 U	--	--	--	--	--
1,1-Dichloropropene	--	--	1 U	--	1 U	--	--	--	--	--
1,2,3-Trichlorobenzene	--	--	5 U	--	5 U	--	--	--	--	--
1,2,3-Trichloropropane	--	--	1 U	--	1 U	--	--	--	--	--

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-2		RMW-2D		RMW-3D				
	Location ID	RMW-2	RMW-2	RMW-2D	RMW-2D	RMW-3D	RMW-3D	RMW-3D	RMW-3D	RMW-3D
	Sample ID	RMW-2-36262	RMW-2-36200	RMW-2D-36262	RMW-2D-36200	RMW-3D-10292013	MW-3D-0907	RMW-3D-36468	RMW-3D-36452	RMW-3D-36383
	Sample Date	04/12/1999	02/09/1999	04/12/1999	02/09/1999	10/29/2013	09/27/2007	11/04/1999	10/19/1999	08/11/1999
	Sample Type	N	N	N	N	N	N	N	N	N
Analyte	Screening Level									
1,2,4-Trichlorobenzene	0.48	--	5 U	--	5 U	--	--	--	--	--
1,2,4-Trimethylbenzene	24	--	**1**	--	1 U	--	1 U	--	--	--
1,2-Dibromo-3-chloropropane	--	--	5 U	--	5 U	--	--	--	--	--
1,2-Dichlorobenzene	6.1	--	1 U	--	1 U	--	--	--	--	--
1,2-Dichloroethane	4.2	--	1 U	--	1 U	--	--	--	--	--
1,2-Dichloroethene, cis-	160	--	1 U	--	1 U	--	--	--	--	--
1,2-Dichloroethene, trans-	130	--	1 U	--	1 U	--	--	--	--	--
1,2-Dichloropropane	15	--	1 U	--	1 U	--	--	--	--	--
1,3,5-Trimethylbenzene (Mesitylene)	25	--	1 U	--	1 U	--	1 U	--	--	--
1,3-Dichlorobenzene	960	--	1 U	--	1 U	--	--	--	--	--
1,3-Dichloropropane	--	--	1 U	--	1 U	--	--	--	--	--
1,3-Dichloropropene, cis-	--	--	1 U	--	1 U	--	--	--	--	--
1,3-Dichloropropene, trans-	--	--	1 U	--	1 U	--	--	--	--	--
1,4-Dichloro-2-butene, trans-	--	--	5 U	--	5 U	--	--	--	--	--
1,4-Dichlorobenzene	5	--	**1.3**	--	1 U	--	--	--	--	--
2,2-Dichloropropane	--	--	1 U	--	1 U	--	--	--	--	--
2-Butanone (MEK)	350,000	--	5 U	--	5 U	--	--	--	--	--
2-Chloroethylvinyl ether	--	--	5 U	--	5 U	--	--	--	--	--
2-Chlorotoluene	--	--	1 U	--	1 U	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)	--	--	5 U	--	5 U	--	--	--	--	--
4-Chlorotoluene	--	--	1 U	--	1 U	--	--	--	--	--
Acetone	--	--	5 U	--	5 U	--	--	--	--	--
Acrolein	20	--	50 U	--	50 U	--	--	--	--	--
Acrylonitrile	5	--	5 U	--	5 U	--	--	--	--	--
Benzene	2.4	--	1 U	--	1 U	--	1 U	--	--	--
Bromobenzene	--	--	1 U	--	1 U	--	--	--	--	--
Bromochloromethane	--	--	1 U	--	1 U	--	--	--	--	--
Bromodichloromethane	0.5	--	1 U	--	1 U	--	--	--	--	--
Bromoform (Tribromomethane)	140	--	1 U	--	1 U	--	--	--	--	--
Bromomethane (Methyl bromide)	13	--	2 U	--	2 U	--	--	--	--	--
Carbon disulfide	400	--	1 U	--	1 U	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)	0.5	--	1 U	--	1 U	--	--	--	--	--
Chlorobenzene	100	--	**9.3**	--	1 U	--	--	--	--	--
Chloroethane	12	--	2 U	--	2 U	--	--	--	--	--
Chloroform	1.2	--	1 U	--	1 U	--	--	--	--	--
Chloromethane	5.2	--	2 U	--	2 U	--	--	--	--	--
Cymene, p- (4-Isopropyltoluene)	--	--	1 U	--	1 U	--	--	--	--	--
Dibromochloromethane	0.5	--	1 U	--	1 U	--	--	--	--	--
Dibromomethane	--	--	1 U	--	1 U	--	--	--	--	--
Dichloromethane (Methylene chloride)	94	--	2 U	--	2 U	--	--	--	--	--
Ethyl bromide (Bromoethane)	--	--	2 U	--	2 U	--	--	--	--	--
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	--	1 U	--	1 U	--	1 U	--	--	--
Ethylene dibromide (1,2-Dibromoethane)	2	--	1 U	--	1 U	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	--	5 U	--	5 U	--	--	--	--	--
Isopropylbenzene (Cumene)	720	--	1 U	--	1 U	--	--	--	--	--

Table 6-3a
Landfill Groundwater Results

		RMW-2		RMW-2D		RMW-3D				
	Location ID	**RMW-2**	**RMW-2**	**RMW-2D**	**RMW-2D**	**RMW-3D**	**RMW-3D**	**RMW-3D**	**RMW-3D**	**RMW-3D**
	Sample ID	**RMW-2-36262**	**RMW-2-36200**	**RMW-2D-36262**	**RMW-2D-36200**	**RMW-3D-10292013**	**MW-3D-0907**	**RMW-3D-36468**	**RMW-3D-36452**	**RMW-3D-36383**
	Sample Date	**04/12/1999**	**02/09/1999**	**04/12/1999**	**02/09/1999**	**10/29/2013**	**09/27/2007**	**11/04/1999**	**10/19/1999**	**08/11/1999**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**									
m,p-Xylene	--	--	**1.8**	--	1 U	--	1 U	--	--	--
Methyl iodide (Iodomethane)	--	--	1 U	--	1 U	--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11,000	--	5 U	--	5 U	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	5 U	--	5 U	--	--	--	--	--
n-Butylbenzene	--	--	1 U	--	1 U	--	--	--	--	--
n-Propylbenzene	--	--	1 U	--	1 U	--	--	--	--	--
o-Xylene	440	--	1 U	--	1 U	--	1 U	--	--	--
sec-Butylbenzene	--	--	1 U	--	1 U	--	--	--	--	--
Styrene	78	--	1 U	--	1 U	--	--	--	--	--
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	1 U	--	1 U	--	--	--	--	--
Tetrachloroethene (PCE)	3.3	--	1 U	--	1 U	--	--	--	--	--
Toluene	7,300	--	1 U	--	1 U	--	1 U	--	--	--
Trichloroethene (TCE)	1.6	--	1 U	--	1 U	--	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)	120	--	2 U	--	2 U	--	--	--	--	--
Vinyl acetate	7,800	--	5 U	--	5 U	--	--	--	--	--
Vinyl chloride	0.5	--	2 U	--	2 U	--	--	--	--	--
n-Alkanes and Isoprenoids (µg/L)										
n-Hexane (C6)	--	--	--	--	--	--	1 U	--	--	--

Table 6-3a
Landfill Groundwater Results

		RMW-3D		RMW-4	RMW-5				RMW-8		
	Location ID	RMW-3D	RMW-3D	RMW-4	RMW-5	RMW-5	RMW-5	RMW-5	RMW-8	RMW-8	RMW-8
	Sample ID	RMW-3D-36263	RMW-3D-36201	RMW-4B-36452	RMW-5-07212016	RMW-5-10302013	RMW-5-0308	RMW-5	RMW-8-0308	RMW-28-0308	RMW-8-0907
	Sample Date	04/13/1999	02/10/1999	10/19/1999	07/21/2016	10/30/2013	03/26/2008	09/20/2007	03/25/2008	03/25/2008	09/20/2007
	Sample Type	N	N	N	N	N	N	N	N	FD	N
Analyte	Screening Level										
Metals (µg/L)											
Arsenic	5	**1**	**1**	--	**6**	--	50 U	50 U	50 U	50 U	50 U
Barium	--	**12**	**15**	--	**320**	--	**175**	**273**	**88**	**86**	**71**
Chromium	260	**105**	**79**	--	**732**	--	**184**	**1,110**	**2,010**	**1,940**	**222**
Chromium VI	50	110 U	100 U	--	-- R	**0.027 J**	12 U	11 U	--	--	11 U
Copper	3.1	2 U	2 U	--	**20**	--	2 U	**27**	**4**	**3**	**5**
Lead	8.1	1 U	1 U	--	**91.2**	--	20 U	**90**	**30**	**20**	20 U
Mercury	0.059	0.2 U	0.1 U	--	0.2 U	--	0.1 U	**0.2**	0.1 U	0.1 U	0.1 U
Nickel	8.2	10 U	10 U	--	**9**	--	10 U	10 U	**20**	**20**	**20**
Zinc	81	**90**	**13**	--	**110**	--	**10**	**170**	**30**	**30**	**20**
Metals, Dissolved (µg/L)											
Antimony	--	--	--	--	2 U	**2.3**	--	--	--	--	--
Arsenic	5	--	--	--	**6**	**6**	50 U	--	50 U	50 U	--
Barium	--	--	--	--	**316**	**268**	**202**	--	**88**	**92**	--
Beryllium	--	--	--	--	4 U	0.5 U	--	--	--	--	--
Cadmium	--	--	--	--	2 U	**0.9**	--	--	--	--	--
Chromium	260	--	--	--	**784**	**1,100**	**139**	--	**1,780**	**2,000**	--
Chromium VI	50	--	--	--	--	**0.027 J**	--	--	--	--	--
Copper	3.1	--	--	--	**20**	**19**	2 U	--	2 U	2 U	--
Lead	8.1	--	--	--	**72.2**	**60.2**	20 U	--	20 U	20 U	--
Mercury	0.059	--	--	--	0.2 U	**0.112**	0.1 U	--	0.1 U	0.1 U	--
Nickel	8.2	--	--	--	**10**	**10**	10 U	--	**20**	**20**	--
Selenium	--	--	--	--	2.5 U	**0.72 J**	--	--	--	--	--
Silver	--	--	--	--	1 U	**0.2 J**	--	--	--	--	--
Thallium	--	--	--	--	1 U	0.5 U	--	--	--	--	--
Zinc	81	--	--	--	**90**	**80**	10 U	--	10 U	**10**	--
Conventional Parameters (µg/L)											
Acidity as calcium carbonate (CaCO3)	--	**1,600,000**	**1,600,000**	--	--	--	**691,000**	**898,000**	**3,280,000**	**1,650,000**	**3,250,000**
Alkalinity, bicarbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	**691,000**	**898,000**	**3,280,000**	**1,650,000**	**3,250,000**
Alkalinity, carbonate as calcium carbonate (CaCO3)	--	--	--	--	--	--	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Alkalinity, hydroxide as calcium carbonate (CaCO3)	--	--	--	--	--	--	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Ammonia as nitrogen	--	**8,700**	**5,900**	--	--	--	--	--	--	--	--
Chloride	--	**1,300,000**	**1,900,000**	--	--	--	**27,800**	**137,000**	**3,390,000**	**3,440,000**	**3,440,000**
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	4 U	--	--	5 U	5 U	5 U	5 U	5 U
Calcium	--	**54,300**	**46,600**	--	--	--	**154,000**	**139,000**	**28,300**	**26,200**	**24,900**
Ferrous iron	--	**1,300**	**420**	--	--	--	--	--	--	--	--
Iron	--	**430**	**590**	--	--	--	--	--	--	--	--
Magnesium	--	**174,000**	**163,000**	--	--	--	**44,400**	**47,200**	**152,000**	**140,000**	**154,000**
Manganese	100	**17**	**25**	--	--	--	--	--	--	--	--
Nitrate + nitrite as nitrogen	--	10 U	10 U	--	--	--	100 U	200 U	100 U	50 U	50 U
Nitrate as nitrogen	--	--	--	--	--	--	100 U	200 U	100 U	50 U	50 U
Nitrite as nitrogen	--	--	--	--	--	--	**57**	200 U	100 U	50 U	50 U
Potassium	--	--	--	--	--	--	**12,600**	**44,200**	**450,000**	**423,000**	**434,000**
Sodium	--	--	--	--	--	--	**60,300**	**258,000**	**2,640,000**	**2,470,000**	**2,660,000**
Sulfate	--	--	--	--	--	--	**51,700**	**99,200**	**75,000**	**75,600**	**40,700**
Sulfide	--	50 U	**1,300**	--	--	--	--	--	--	--	--

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-3D		RMW-4	RMW-5				RMW-8		
	Location ID	RMW-3D	RMW-3D	RMW-4	RMW-5	RMW-5	RMW-5	RMW-5	RMW-8	RMW-8	RMW-8
	Sample ID	RMW-3D-36263	RMW-3D-36201	RMW-4B-36452	RMW-5-07212016	RMW-5-10302013	RMW-5-0308	RMW-5	RMW-8-0308	RMW-28-0308	RMW-8-0907
	Sample Date	04/13/1999	02/10/1999	10/19/1999	07/21/2016	10/30/2013	03/26/2008	09/20/2007	03/25/2008	03/25/2008	09/20/2007
	Sample Type	N	N	N	N	N	N	N	N	FD	N
	Screening Level										
Total dissolved solids	--	--	--	--	--	--	**909,000**	**1,390,000**	**7,670,000**	**7,770,000**	**7,940,000**
Total suspended solids	--	1000 U	**4,500**	--	--	1,100 U	**5,600**	**23,000**	**8,900**	**10,100**	**22,700**
Total organic carbon	--	**67,000**	**58,000**	--	--	--	**58,300**	**354,000**	**316,000**	**308,000**	**484,000**
Conventional Parameters, Dissolved (µg/L)											
Total dissolved solids	--	**3,900,000**	**4,500,000**	--	--	**1,880,000**	--	--	--	--	--
Total Petroleum Hydrocarbons (µg/L)											
Diesel range hydrocarbons	500	250 U	250 U	--	--	--	250 U	250 U	**460**	**450**	**610**
Gasoline range hydrocarbons	800	--	--	--	--	--	250 U	--	**1,300**	**1,500**	--
Motor oil range hydrocarbons	500	--	--	--	--	--	500 U	500 U	**2,400**	**2,300**	**4,600**
Polycyclic Aromatic Hydrocarbons (µg/L)											
1-Methylnaphthalene	--	--	--	--	--	--	**1.8**	**3.2**	**2.1**	**2**	**1.6**
2-Methylnaphthalene	--	1 U	1 U	--	--	--	**1.1**	**2.4**	**3.3**	**3.1**	**2.5**
Acenaphthene	3.3	1 U	1 U	--	--	--	**1.3**	**1.8**	1 U	1 U	1 U
Acenaphthylene	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Anthracene	9.6	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Chrysene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	1 U	1 U	--	--	--	1 U	1 U	**1.2**	**1.1**	1 U
Fluorene	3	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Naphthalene	83	1 U	1 U	--	--	--	**16**	**63**	**7.8**	**7.7**	**5.5**
Phenanthrene	--	1 U	1 U	--	--	--	1 U	1 U	**1.5**	**1.4**	**1**
Pyrene	15	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)											
1,2,4-Trichlorobenzene	0.48	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	6.1	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	960	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	5	1 U	1 U	--	--	--	**1.3**	**2**	**6.7**	**6.7**	**5.4**
2,2'-Oxybis (1-chloropropane)	14.3	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
2,4,5-Trichlorophenol	3,600	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	2.4	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	73.3	3 U	3 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	200	3 U	3 U	--	--	--	1 U	1 U	**32**	**31**	**14**
2,4-Dinitrophenol	1,400	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	3.4	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	--	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2-Chloronaphthalene	390	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
2-Chlorophenol	37.4	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
2-Methylphenol (o-Cresol)	--	2 U	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-3D		RMW-4	RMW-5				RMW-8		
	Location ID	RMW-3D	RMW-3D	RMW-4	RMW-5	RMW-5	RMW-5	RMW-5	RMW-8	RMW-8	RMW-8
	Sample ID	RMW-3D-36263	RMW-3D-36201	RMW-4B-36452	RMW-5-07212016	RMW-5-10302013	RMW-5-0308	RMW-5	RMW-8-0308	RMW-28-0308	RMW-8-0907
	Sample Date	04/13/1999	02/10/1999	10/19/1999	07/21/2016	10/30/2013	03/26/2008	09/20/2007	03/25/2008	03/25/2008	09/20/2007
	Sample Type	N	N	N	N	N	N	N	N	FD	N
	Screening Level										
2-Nitroaniline	--	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2-Nitrophenol	--	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	2	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	--	6 U	6 U	--	--	--	5 U	5 U	5 U	5 U	5 U
4-Bromophenyl-phenyl ether	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	--	2 U	2 U	--	--	--	5 U	5 U	5 U	5 U	5 U
4-Chloroaniline	--	3 U	3 U	--	--	--	5 U	5 U	5 U	5 U	5 U
4-Chlorophenyl phenyl ether	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
4-Methylphenol (p-Cresol)	--	1 U	1 U	--	--	--	1 U	1 U	**1.2**	1 U	1 U
4-Nitroaniline	--	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
4-Nitrophenol	--	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Benzoic acid	--	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U	10 U
Benzyl alcohol	--	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethoxy)methane	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
bis(2-Chloroethyl)ether	0.53	2 U	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
bis(2-Ethylhexyl)phthalate	1	**3.3**	**1.4**	--	--	--	**1**	1 U	**19**	**18**	**25**
Butylbenzyl phthalate	0.35	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Carbazole	--	1 U	1 U	--	--	--	1 U	1 U	**1.4**	**1.2**	1 U
Dibenzofuran	--	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Diethyl phthalate	740	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Dimethyl phthalate	1,100,000	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Di-n-butyl phthalate	140	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	10 U	10 U	--	--	--	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	0.2	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene	0.2	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	2 U	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Hexachlorocyclopentadiene	1,100	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	3.3	2 U	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Isophorone	600	1 U	1 U	--	--	--	1 U	1 U	3.2 U	3.1 U	1 U
Nitrobenzene	690	1 U	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
n-Nitrosodi-n-propylamine	0.32	2 U	2 U	--	--	--	5 U	5 U	5 U	5 U	5 U
n-Nitrosodiphenylamine	3.7	1 U	1 U	--	--	--	1 U	1 U	**1.1**	1 U	1 U
Pentachlorophenol	3	5 U	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Phenol	216,000	2 U	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	1 U	--	1 U	1 U	--
Volatile Organics (µg/L)											
1,1,1,2-Tetrachloroethane	7.4	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	11,000	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	4	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1,100	--	2 U	--	--	--	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	7.9	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2,300	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	3.2	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	--	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	--	--	1 U	--	--	--	2 U	2 U	2 U	2 U	2 U

Table 6-3a
Landfill Groundwater Results

	Location ID	RMW-3D	RMW-3D	RMW-4	RMW-5	RMW-5	RMW-5	RMW-5	RMW-8	RMW-8	RMW-8
	Sample ID	RMW-3D-36263	RMW-3D-36201	RMW-4B-36452	RMW-5-07212016	RMW-5-10302013	RMW-5-0308	RMW-5	RMW-8-0308	RMW-28-0308	RMW-8-0907
	Sample Date	04/13/1999	02/10/1999	10/19/1999	07/21/2016	10/30/2013	03/26/2008	09/20/2007	03/25/2008	03/25/2008	09/20/2007
	Sample Type	N	N	N	N	N	N	N	N	FD	N
Analyte	Screening Level										
1,2,4-Trichlorobenzene	0.48	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	24	--	1 U	--	--	--	**3.3**	**6.5**	**32**	**33**	**28**
1,2-Dibromo-3-chloropropane	--	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	6.1	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	4.2	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, cis-	160	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene, trans-	130	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	15	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene (Mesitylene)	25	--	1 U	--	--	--	1 U	1 U	**7.9**	**8.3**	**6.9**
1,3-Dichlorobenzene	960	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene, cis-	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene, trans-	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
1,4-Dichloro-2-butene, trans-	--	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	5	--	1 U	--	--	--	**2.1**	1 U	**11**	**11**	1 U
2,2-Dichloropropane	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	350,000	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2-Chloroethylvinyl ether	--	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
2-Hexanone (Methyl butyl ketone)	--	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Acetone	--	--	5 U	--	--	--	5 U	5 U	**5.1**	**6.5**	**6.5**
Acrolein	20	--	50 U	--	--	--	50 U	50 U	50 U	50 U	50 U
Acrylonitrile	5	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Benzene	2.4	--	1 U	--	--	--	1 U	1 U	**3.8**	**3.9**	**3**
Bromobenzene	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	0.5	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Bromoform (Tribromomethane)	140	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Bromomethane (Methyl bromide)	13	--	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	400	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride (Tetrachloromethane)	0.5	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	100	--	1 U	--	--	--	**2.6**	**5.7**	1 U	1 U	1 U
Chloroethane	12	--	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Chloroform	1.2	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Chloromethane	5.2	--	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Cymene, p- (4-Isopropyltoluene)	--	--	1 U	--	--	--	1 U	1 U	**1.4**	**1.4**	1 U
Dibromochloromethane	0.5	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Dibromomethane	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Dichloromethane (Methylene chloride)	94	--	2 U	--	--	--	2 U	2 U	2 U	2 U	2 U
Ethyl bromide (Bromoethane)	--	--	2 U	--	--	--	2 U	2 U	2 U	2 U	2 U
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	1 U	--	1 U	1 U	--
Ethylbenzene	2,100	--	1 U	--	--	--	1 U	1 U	**44**	**45**	**35**
Ethylene dibromide (1,2-Dibromoethane)	2	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene (Cumene)	720	--	1 U	--	--	--	**1.3**	**1.4**	**3.4**	**3.5**	**2.2**

Table 6-3a
Landfill Groundwater Results

		RMW-3D		RMW-4	RMW-5				RMW-8		
	Location ID	**RMW-3D**	**RMW-3D**	**RMW-4**	**RMW-5**	**RMW-5**	**RMW-5**	**RMW-5**	**RMW-8**	**RMW-8**	**RMW-8**
	Sample ID	**RMW-3D-36263**	**RMW-3D-36201**	**RMW-4B-36452**	**RMW-5-07212016**	**RMW-5-10302013**	**RMW-5-0308**	**RMW-5**	**RMW-8-0308**	**RMW-28-0308**	**RMW-8-0907**
	Sample Date	**04/13/1999**	**02/10/1999**	**10/19/1999**	**07/21/2016**	**10/30/2013**	**03/26/2008**	**09/20/2007**	**03/25/2008**	**03/25/2008**	**09/20/2007**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**FD**	**N**
Analyte	**Screening Level**										
m,p-Xylene	--	--	1 U	--	--	--	**2.9**	**3**	**32**	**33**	**27**
Methyl iodide (Iodomethane)	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11,000	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	1 U	--	1 U	1 U	--
Naphthalene	83	--	5 U	--	--	--	**28**	**130**	**10**	**11**	**8.7**
n-Butylbenzene	--	--	1 U	--	--	--	1 U	1 U	**1.7**	**1.1**	1 U
n-Propylbenzene	--	--	1 U	--	--	--	1 U	**1.2**	**4**	**4.2**	**2.8**
o-Xylene	440	--	1 U	--	--	--	1 U	1 U	**24**	**24**	**21**
sec-Butylbenzene	--	--	1 U	--	--	--	1 U	1 U	**1.2**	1 U	1 U
Styrene	78	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	10 U	--	**130**	**99**	--
tert-Butylbenzene	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	3.3	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Toluene	7,300	--	1 U	--	--	--	1 U	1 U	**1.4**	**1.4**	**1.1**
Trichloroethene (TCE)	1.6	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane (Fluorotrichloromethane)	120	--	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	7,800	--	5 U	--	--	--	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	0.5	--	2 U	--	--	--	1 U	1 U	1 U	1 U	1 U
n-Alkanes and Isoprenoids (µg/L)											
n-Hexane (C6)	--	--	--	--	--	--	1 U	--	1 U	1 U	--

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-9							
	Location ID	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9
	Sample ID	RMW-9-0308	RMW-9-0907	RMW-9-36467	RMW-9-36382	RMW-9-36263	RMW-9-36263D	RMW-9-36227	RMW-9-36201
	Sample Date	03/24/2008	09/18/2007	11/03/1999	08/10/1999	04/13/1999	04/13/1999	03/08/1999	02/10/1999
	Sample Type	N	N	N	N	N	FD	N	N
Analyte	Screening Level								
Metals (µg/L)									
Arsenic	5	--	50 U	**3**	**2**	1 U	1 U	--	**34**
Barium	--	--	**470**	**562**	**422**	**204**	**203**	--	**118**
Chromium	260	--	**328**	**894**	**513**	**13**	**12**	--	**5,380**
Chromium VI	50	--	--	60 U	10 U	60 U	60 U	--	100 U
Copper	3.1	--	2 U	2 U	2 U	2 U	2 U	--	**19**
Lead	8.1	--	20 U	**8**	**4**	1 U	1 U	--	**130**
Mercury	0.059	--	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	--	**0.1**
Nickel	8.2	--	10 U	10 U	10 U	10 U	10 U	--	**40**
Zinc	81	--	**140**	**354**	**440**	**29**	**7**	--	**150**
Metals, Dissolved (µg/L)									
Antimony	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)									
Acidity as calcium carbonate (CaCO3)	--	--	**1,320,000**	**1,800,000**	**1,600,000**	**1,000,000**	**1,000,000**	--	**3,300,000**
Alkalinity, bicarbonate as calcium carbonate (CaCO3)	--	--	**1,320,000**	--	--	--	--	--	--
Alkalinity, carbonate as calcium carbonate (CaCO3)	--	--	1,000 U	--	--	--	--	--	--
Alkalinity, hydroxide as calcium carbonate (CaCO3)	--	--	1,000 U	--	--	--	--	--	--
Ammonia as nitrogen	--	--	--	**90,000**	**53,000**	**17,000**	**15,000**	--	**410,000**
Chloride	--	--	**313,000**	**1,400,000**	**450,000**	**42,000**	**48,000**	--	**3,800,000**
Cyanide, Weak acid dissociable (WAD)	--	--	5 U	5 U	5 U	**5**	5 U	--	**7**
Calcium	--	--	**297,000**	**296,000**	**302,000**	**284,000**	**283,000**	--	**48,800**
Ferrous iron	--	--	--	**42,000**	**38,000**	**16,000**	**16,000**	--	**7,600**
Iron	--	--	**53,500**	**38,100**	**34,400**	**15,100**	**15,000**	--	**11,700**
Magnesium	--	--	**60,100**	**107,000**	**79,400**	**49,700**	**49,600**	--	**144,000**
Manganese	100	--	**908**	**714**	**760**	**639**	**638**	--	**379**
Nitrate + nitrite as nitrogen	--	--	**61**	100 U	**21**	10 U	10 U	--	**52**
Nitrate as nitrogen	--	--	**48**	--	--	--	--	--	--
Nitrite as nitrogen	--	--	**13**	--	--	--	--	--	--
Potassium	--	--	**54,100**	--	--	--	--	--	--
Sodium	--	--	**240,000**	**699,000**	**370,000**	--	--	--	--
Sulfate	--	--	**9,100**	**120,000**	--	--	--	--	--
Sulfide	--	--	--	50 U	50 U	50 U	50 U	--	100 U

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RMW-9							
		RMW-9 RMW-9-0308 03/24/2008 N	RMW-9 RMW-9-0907 09/18/2007 N	RMW-9 RMW-9-36467 11/03/1999 N	RMW-9 RMW-9-36382 08/10/1999 N	RMW-9 RMW-9-36263 04/13/1999 N	RMW-9 RMW-9-36263D 04/13/1999 FD	RMW-9 RMW-9-36227 03/08/1999 N	RMW-9 RMW-9-36201 02/10/1999 N
Total dissolved solids	--	--	**1,670,000**	--	--	--	--	--	--
Total suspended solids	--	--	**123,000**	**3,200**	**96,000**	**42,000**	**41,000**	--	**60,000**
Total organic carbon	--	--	**59,600**	**140,000**	**80,000**	**17,000**	**17,000**	--	**520,000**
Conventional Parameters, Dissolved (µg/L)									
Total dissolved solids	--	--	--	**3,200,000**	**2,100,000**	**1,100,000**	**1,100,000**	--	**9,400,000**
Total Petroleum Hydrocarbons (µg/L)									
Diesel range hydrocarbons	500	250 U	250 U	**980**	**770**	**340**	250 U	--	**4,000**
Gasoline range hydrocarbons	800	**590**	--	--	--	--	--	--	--
Motor oil range hydrocarbons	500	500 U	500 U	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)									
1-Methylnaphthalene	--	--	1 U	--	--	--	--	--	--
2-Methylnaphthalene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	**3.4**
Acenaphthene	3.3	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Acenaphthylene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Anthracene	9.6	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**
Benzo(a)pyrene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chrysene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**
Dibenzo(a,h)anthracene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibenzofuran	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	1 U	1 U	1 U	1 U	1 U	1 U	**5.6**
Fluorene	3	--	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**
Indeno(1,2,3-c,d)pyrene	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	83	--	1 U	**3.1**	**3.2**	**2.7**	**2.6**	**3.4**	**9.5**
Phenanthrene	--	--	1 U	1 U	1 U	1 U	1 U	1 U	**11**
Pyrene	15	--	1 U	1 U	1 U	1 U	1 U	1 U	**6.6**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	--	1 U	1 U	1 U	1 U	1 U	1 U	**0.8**
Semivolatile Organics (µg/L)									
1,2,4-Trichlorobenzene	0.48	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	6.1	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	960	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	5	--	**5**	**4.7**	**6.7**	**17**	**16**	**18**	**8**
2,2'-Oxybis (1-chloropropane)	14.3	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,4,5-Trichlorophenol	3,600	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	2.4	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	73.3	--	5 U	3 U	3 U	3 U	3 U	3 U	3 U
2,4-Dimethylphenol	200	--	1 U	3 U	3 U	3 U	3 U	3 U	**74**
2,4-Dinitrophenol	1,400	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	3.4	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloronaphthalene	390	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorophenol	37.4	--	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U
2-Methylphenol (o-Cresol)	--	--	1 U	2 U	2 U	2 U	2 U	2 U	**3.2**

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-9							
	Location ID	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9
	Sample ID	RMW-9-0308	RMW-9-0907	RMW-9-36467	RMW-9-36382	RMW-9-36263	RMW-9-36263D	RMW-9-36227	RMW-9-36201
	Sample Date	03/24/2008	09/18/2007	11/03/1999	08/10/1999	04/13/1999	04/13/1999	03/08/1999	02/10/1999
	Sample Type	N	N	N	N	N	FD	N	N
	Screening Level								
2-Nitroaniline	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitrophenol	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	2	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	--	--	5 U	6 U	6 U	6 U	6 U	6 U	6 U
4-Bromophenyl-phenyl ether	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	--	--	5 U	2 U	2 U	2 U	2 U	2 U	2 U
4-Chloroaniline	--	--	5 U	3 U	3 U	3 U	3 U	3 U	3 U
4-Chlorophenyl phenyl ether	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methylphenol (p-Cresol)	--	--	1 U	1 U	1 U	1 U	1 U	1 U	**2.9**
4-Nitroaniline	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitrophenol	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzoic acid	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzyl alcohol	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
bis(2-Chloroethoxy)methane	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bis(2-Chloroethyl)ether	0.53	--	1 U	2 U	2 U	2 U	2 U	2 U	2 U
bis(2-Ethylhexyl)phthalate	1	--	1 U	1 U	1 U	**3**	1 U	1 U	**4.5**
Butylbenzyl phthalate	0.35	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbazole	--	--	1 U	1 U	1 U	1 U	1 U	1 U	**11**
Dibenzofuran	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Diethyl phthalate	740	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dimethyl phthalate	1,100,000	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Di-n-butyl phthalate	140	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	0.2	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene	0.2	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	--	1 U	2 U	2 U	2 U	2 U	2 U	2 U
Hexachlorocyclopentadiene	1,100	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	3.3	--	1 U	2 U	2 U	2 U	2 U	2 U	2 U
Isophorone	600	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	690	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Nitrosodi-n-propylamine	0.32	--	5 U	2 U	2 U	2 U	2 U	2 U	2 U
n-Nitrosodiphenylamine	3.7	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pentachlorophenol	3	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenol	216,000	--	1 U	2 U	2 U	2 U	2 U	2 U	2 U
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)									
1,1,1,2-Tetrachloroethane	7.4	--	1 U	--	--	--	--	3 U	1 U
1,1,1-Trichloroethane	11,000	--	1 U	--	--	--	--	3 U	1 U
1,1,2,2-Tetrachloroethane	4	--	1 U	--	--	--	--	3 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	1,100	--	2 U	--	--	--	--	15 U	2 U
1,1,2-Trichloroethane	7.9	--	1 U	--	--	--	--	3 U	1 U
1,1-Dichloroethane	2,300	--	1 U	--	--	--	--	3 U	1 U
1,1-Dichloroethene	3.2	--	1 U	--	--	--	--	3 U	1 U
1,1-Dichloropropene	--	--	1 U	--	--	--	--	3 U	1 U
1,2,3-Trichlorobenzene	--	--	5 U	--	--	--	--	15 U	5 U
1,2,3-Trichloropropane	--	--	2 U	--	--	--	--	9 U	1 U

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-9							
	Location ID	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9	RMW-9
	Sample ID	RMW-9-0308	RMW-9-0907	RMW-9-36467	RMW-9-36382	RMW-9-36263	RMW-9-36263D	RMW-9-36227	RMW-9-36201
	Sample Date	03/24/2008	09/18/2007	11/03/1999	08/10/1999	04/13/1999	04/13/1999	03/08/1999	02/10/1999
	Sample Type	N	N	N	N	N	FD	N	N
Analyte	Screening Level								
1,2,4-Trichlorobenzene	0.48	--	5 U	--	--	--	--	15 U	5 U
1,2,4-Trimethylbenzene	24	--	1 U	--	--	--	--	3 U	**58**
1,2-Dibromo-3-chloropropane	--	--	5 U	--	--	--	--	15 U	5 U
1,2-Dichlorobenzene	6.1	--	1 U	--	--	--	--	3 U	1 U
1,2-Dichloroethane	4.2	--	1 U	--	--	--	--	3 U	1 U
1,2-Dichloroethene, cis-	160	--	1 U	--	--	--	--	3 U	1 U
1,2-Dichloroethene, trans-	130	--	1 U	--	--	--	--	3 U	1 U
1,2-Dichloropropane	15	--	1 U	--	--	--	--	3 U	1 U
1,3,5-Trimethylbenzene (Mesitylene)	25	--	1 U	--	--	--	--	3 U	**18**
1,3-Dichlorobenzene	960	--	1 U	--	--	--	--	3 U	1 U
1,3-Dichloropropane	--	--	1 U	--	--	--	--	3 U	1 U
1,3-Dichloropropene, cis-	--	--	1 U	--	--	--	--	3 U	1 U
1,3-Dichloropropene, trans-	--	--	1 U	--	--	--	--	3 U	1 U
1,4-Dichloro-2-butene, trans-	--	--	5 U	--	--	--	--	15 U	5 U
1,4-Dichlorobenzene	5	--	**6.8**	--	--	--	--	**30**	**16**
2,2-Dichloropropane	--	--	1 U	--	--	--	--	3 U	1 U
2-Butanone (MEK)	350,000	--	5 U	--	--	--	--	15 U	5 U
2-Chloroethylvinyl ether	--	--	5 U	--	--	--	--	15 U	5 U
2-Chlorotoluene	--	--	1 U	--	--	--	--	3 U	1 U
2-Hexanone (Methyl butyl ketone)	--	--	5 U	--	--	--	--	15 U	5 U
4-Chlorotoluene	--	--	1 U	--	--	--	--	3 U	1 U
Acetone	--	--	**8.5**	--	--	--	--	30 U	**9.2**
Acrolein	20	--	50 U	--	--	--	--	150 U	50 U
Acrylonitrile	5	--	5 U	--	--	--	--	30 U	5 U
Benzene	2.4	--	**1.4**	--	--	--	--	**4.4**	**4.1**
Bromobenzene	--	--	1 U	--	--	--	--	3 U	1 U
Bromochloromethane	--	--	1 U	--	--	--	--	3 U	1 U
Bromodichloromethane	0.5	--	1 U	--	--	--	--	3 U	1 U
Bromoform (Tribromomethane)	140	--	1 U	--	--	--	--	3 U	1 U
Bromomethane (Methyl bromide)	13	--	1 U	--	--	--	--	6 U	2 U
Carbon disulfide	400	--	1 U	--	--	--	--	3 U	1 U
Carbon tetrachloride (Tetrachloromethane)	0.5	--	1 U	--	--	--	--	3 U	1 U
Chlorobenzene	100	--	**57**	--	--	--	--	**210**	**2.2**
Chloroethane	12	--	1 U	--	--	--	--	6 U	2 U
Chloroform	1.2	--	1 U	--	--	--	--	3 U	1 U
Chloromethane	5.2	--	1 U	--	--	--	--	6 U	2 U
Cymene, p- (4-Isopropyltoluene)	--	--	1 U	--	--	--	--	3 U	**8.5**
Dibromochloromethane	0.5	--	1 U	--	--	--	--	3 U	1 U
Dibromomethane	--	--	1 U	--	--	--	--	3 U	1 U
Dichloromethane (Methylene chloride)	94	--	2 U	--	--	--	--	6 U	2 U
Ethyl bromide (Bromoethane)	--	--	2 U	--	--	--	--	6 U	2 U
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	--	1 U	--	--	--	--	3 U	**70**
Ethylene dibromide (1,2-Dibromoethane)	2	--	1 U	--	--	--	--	3 U	1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.2	--	5 U	--	--	--	--	15 U	5 U
Isopropylbenzene (Cumene)	720	--	**2.1**	--	--	--	--	3 U	**4.2**

Table 6-3a
Landfill Groundwater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	RMW-9							
		RMW-9 **RMW-9-0308** **03/24/2008** **N**	**RMW-9** **RMW-9-0907** **09/18/2007** **N**	**RMW-9** **RMW-9-36467** **11/03/1999** **N**	**RMW-9** **RMW-9-36382** **08/10/1999** **N**	**RMW-9** **RMW-9-36263** **04/13/1999** **N**	**RMW-9** **RMW-9-36263D** **04/13/1999** **FD**	**RMW-9** **RMW-9-36227** **03/08/1999** **N**	**RMW-9** **RMW-9-36201** **02/10/1999** **N**
m,p-Xylene	--	--	1 U	--	--	--	--	3 U	**68**
Methyl iodide (Iodomethane)	--	--	1 U	--	--	--	--	3 U	1 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))	11,000	--	5 U	--	--	--	--	15 U	5 U
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	5 U	--	--	--	--	15 U	**16**
n-Butylbenzene	--	--	1 U	--	--	--	--	3 U	2.7 U
n-Propylbenzene	--	--	**3.5**	--	--	--	--	**3.3**	**5.8**
o-Xylene	440	--	1 U	--	--	--	--	3 U	**47**
sec-Butylbenzene	--	--	**1.4**	--	--	--	--	3 U	**1.8**
Styrene	78	--	1 U	--	--	--	--	3 U	1 U
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	1 U	--	--	--	--	3 U	1 U
Tetrachloroethene (PCE)	3.3	--	1 U	--	--	--	--	3 U	1 U
Toluene	7,300	--	1 U	--	--	--	--	3 U	**4.7**
Trichloroethene (TCE)	1.6	--	1 U	--	--	--	--	3 U	1 U
Trichlorofluoromethane (Fluorotrichloromethane)	120	--	1 U	--	--	--	--	6 U	2 U
Vinyl acetate	7,800	--	5 U	--	--	--	--	15 U	5 U
Vinyl chloride	0.5	--	1 U	--	--	--	--	6 U	2 U
n-Alkanes and Isoprenoids (µg/L)									
n-Hexane (C6)	--	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area	MW-7(B)	MW-8(B)		MW-43(C)							
	Location ID	**MW-7(B)**	**MW-8(B)**	**MW-8(B)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**
	Sample ID	**MW-7(B)-1007**	**MW-8(B)-36263**	**MW-8(B)-36228**	**MW-43(C)-0308**	**MW-43(C)**	**MW-43_1103**	**MW-43_0303**	**MW-43_092302**	**MW-43_090502**	**MW-43_032502**	**MW-43_072501**
	Sample Date	**10/02/2007**	**04/13/1999**	**03/09/1999**	**03/24/2008**	**09/20/2007**	**11/03/2003**	**03/25/2003**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/25/2001**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**											
Metals, Dissolved (µg/L)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	50 U	--	--	--	--	--	--	--
Barium	--	--	--	--	**12**	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	**9**	--	--	--	--	--	--	--
Copper	3.1	--	--	--	2 U	--	--	--	--	--	--	--
Lead	8.1	--	--	--	20 U	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	0.1 U	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	10 U	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	**20**	--	--	--	--	--	--	--
Metals (µg/L)												
Antimony	--	--	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--
Arsenic	5	50 U	**2**	**2**	50 U	--	10 U	**24**	**18**	--	--	--
Barium	--	**31**	**361**	**331**	**22**	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--
Cadmium	8.8	--	--	--	--	--	5 U	0.94 U	10 U	--	--	--
Chromium	260	**20**	**817**	**985**	**37**	--	**6.6**	**33**	**95.4**	--	--	--
Chromium VI	50	--	110 U	110 U	11 U	--	**2.7**	--	--	--	--	--
Copper	3.1	2 U	2 U	**6**	**7**	--	10 U	**3.6**	**4.6**	--	--	--
Lead	8.1	20 U	1 U	**2**	20 U	--	20 U	**3.2**	8.9 U	--	--	--
Mercury	0.059	0.1 U	0.2 U	0.1 U	0.1 U	--	0.16 U	0.079 U	0.079 U	--	--	--
Nickel	8.2	10 U	10 U	**10**	10 U	--	10 U	1.9 U	1.9 U	--	--	--
Selenium	71	--	--	--	--	--	10 U	4.8 U	4.8 U	--	--	--
Silver	1,900	--	--	--	--	--	5 U	1.4 U	1.4 U	--	--	--
Thallium	--	--	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--
Zinc	81	10 U	**6**	4 U	**80**	--	**8.9**	**52**	**32.4**	--	--	--
Conventional Parameters (µg/L)												
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	5 U	5 U	--	--	--	--	--	--	--
Calcium	--	**34,600**	**148,000**	**103,000**	--	**116,000**	--	--	--	--	--	--
Ferrous iron	--	**282**	**7,300**	**1,000**	--	**7,890**	--	--	--	--	--	--
Iron	--	**390**	**5,810**	**1,030**	--	**8,710**	--	--	--	--	--	--
Magnesium	--	**12,300**	**228,000**	**243,000**	--	**13,700**	--	--	--	--	--	--
Manganese	100	**48**	**1,100**	**131**	--	**340**	--	--	--	--	--	--
Potassium	--	**25,500**	--	--	--	**20,200**	--	--	--	--	--	--
Sodium	--	**36,300**	--	--	--	**60,600**	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area Location ID Sample ID Sample Date Sample Type Screening Level	MW-7(B)	MW-8(B)		MW-43(C)							
	Location ID	MW-7(B)	MW-8(B)	MW-8(B)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)
	Sample ID	MW-7(B)-1007	MW-8(B)-36263	MW-8(B)-36228	MW-43(C)-0308	MW-43(C)	MW-43_1103	MW-43_0303	MW-43_092302	MW-43_090502	MW-43_032502	MW-43_072501
	Sample Date	10/02/2007	04/13/1999	03/09/1999	03/24/2008	09/20/2007	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (µg/L)												
Gasoline range hydrocarbons	800	250 U	--	--	--	250 U	50 U	50 U	--	50 U	50 U	50 U
Diesel range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	500	250 U	**440**	**700**	--	250 U	250 U	250 U	--	250 U	250 U	**431**
Motor oil range hydrocarbons	500	500 U	--	--	--	500 U	--	--	--	--	--	--
Oil	500	--	--	--	--	--	250 U	250 U	--	250 U	750 U	500 U
Polycyclic Aromatic Hydrocarbons (µg/L)												
1-Methylnaphthalene	--	1 U	--	--	--	0.1 U	--	--	--	--	--	--
2-Methylnaphthalene	--	1 U	1 U	--	--	0.1 U	--	--	--	--	--	--
Acenaphthene	3.3	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Acenaphthylene	--	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Anthracene	9.6	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Benzo(a)anthracene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Benzo(a)pyrene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Benzo(b)fluoranthene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Benzo(g,h,i)perylene	--	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Benzo(k)fluoranthene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Chrysene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Dibenzo(a,h)anthracene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Dibenzofuran	--	--	--	--	--	0.1 U	--	--	--	--	--	--
Fluoranthene	3.3	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Fluorene	3	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Naphthalene	83	1 U	1 U	--	--	0.1 U	1 U	0.01 U	**0.02**	--	--	--
Phenanthrene	--	1 U	1 U	--	--	0.1 U	--	0.01 U	**0.01**	--	--	--
Pyrene	15	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	1 U	1 U	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--
Semivolatile Organics (µg/L)												
bis(2-Ethylhexyl)phthalate	1	1 U	1 U	--	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area	MW-43(C)									
	Location ID	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)
	Sample ID	MW-43_033001	MW-43_091900	MW-43_031000	MW-43_082899	MW-43_032299	MW-43_091898	MW-43_091097	MW-43_061797	MW-43_0398	MW-43_1196
	Sample Date	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	09/18/1998	09/10/1997	06/17/1997	03/17/1998	11/07/1996
	Sample Type	N	N	N	N	N	N	N	N	N	N
	Screening Level										
Metals, Dissolved (µg/L)											
Antimony	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--
Metals (µg/L)											
Antimony	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)											
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	MW-43(C)									
	Location ID	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)
	Sample ID	MW-43_033001	MW-43_091900	MW-43_031000	MW-43_082899	MW-43_032299	MW-43_091898	MW-43_091097	MW-43_061797	MW-43_0398	MW-43_1196
	Sample Date	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	09/18/1998	09/10/1997	06/17/1997	03/17/1998	11/07/1996
	Sample Type	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level										
Total Petroleum Hydrocarbons (µg/L)											
Gasoline range hydrocarbons	800	50 U	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**
Diesel range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	500	**278**	**305**	**295**	**357**	**348**	**316**	**1,130**	**250**	**250**	**287**
Motor oil range hydrocarbons	500	--	--	--	--	--	--	--	--	--	--
Oil	500	750 U	**250**	**250**	**250**	**250**	--	**250**	**274**	**250**	**250**
Polycyclic Aromatic Hydrocarbons (µg/L)											
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	--	--	--
Fluorene	3	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--
Pyrene	15	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	--	--	--	--	--	--	--	--	--	--
Semivolatile Organics (µg/L)											
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

	Area	MW-43(C)		MW-53(C)								
	Location ID	MW-43(C)	MW-43(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)
	Sample ID	MW-43_110795	MW-43_030295	MW-53(C)-0907	MW-53_1103	MW-53_0303	MW-53_092302	MW-53_090502	MW-53_032502	MW-53_072501	MW-53_091900	MW-53_031000
	Sample Date	11/07/1995	03/02/1995	09/21/2007	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001	09/19/2000	03/10/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N
Analyte	**Screening Level**											
Metals, Dissolved (µg/L)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--
Metals (µg/L)												
Antimony	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--	--	--
Arsenic	5	--	--	--	10 U	**43**	**33.6**	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--	--	--
Cadmium	8.8	--	--	--	5 U	0.94 U	10 U	--	--	--	--	--
Chromium	260	--	--	--	**5.4**	**86**	**75.3**	--	--	--	--	--
Chromium VI	50	--	--	--	1.2 U	--	--	--	--	--	--	--
Copper	3.1	--	--	--	10 U	**22**	**10.5**	--	--	--	--	--
Lead	8.1	--	--	--	20 U	**2.8**	8.9 U	--	--	--	--	--
Mercury	0.059	--	--	--	0.16 U	**0.081**	**0.087**	--	--	--	--	--
Nickel	8.2	--	--	--	10 U	1.9 U	1.9 U	--	--	--	--	--
Selenium	71	--	--	--	10 U	4.8 U	4.8 U	--	--	--	--	--
Silver	1,900	--	--	--	5 U	1.4 U	1.4 U	--	--	--	--	--
Thallium	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--	--	--
Zinc	81	--	--	--	**46.7**	**34**	**10.3**	--	--	--	--	--
Conventional Parameters (µg/L)												
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	--	--	**505,000**	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	**6,800**	--	--	--	--	--	--	--	--
Iron	--	--	--	**6,600**	--	--	--	--	--	--	--	--
Magnesium	--	--	--	**52,800**	--	--	--	--	--	--	--	--
Manganese	100	--	--	**1,410**	--	--	--	--	--	--	--	--
Potassium	--	--	--	**28,000**	--	--	--	--	--	--	--	--
Sodium	--	--	--	**200,000**	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area	MW-43(C)		MW-53(C)								
	Location ID	**MW-43(C)**	**MW-43(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**
	Sample ID	**MW-43_110795**	**MW-43_030295**	**MW-53(C)-0907**	**MW-53_1103**	**MW-53_0303**	**MW-53_092302**	**MW-53_090502**	**MW-53_032502**	**MW-53_072501**	**MW-53_091900**	**MW-53_031000**
	Sample Date	**11/07/1995**	**03/02/1995**	**09/21/2007**	**11/03/2003**	**03/25/2003**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/25/2001**	**09/19/2000**	**03/10/2000**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**											
Total Petroleum Hydrocarbons (µg/L)												
Gasoline range hydrocarbons	800	--	--	250 U	50 U	50 U	--	**79**	50 U	50 U	**50**	**50**
Diesel range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	500	**287**	**650**	250 U	250 U	250 U	--	**5,500**	250 U	**570**	**406**	**395**
Motor oil range hydrocarbons	500	--	--	500 U	--	--	--	--	--	--	--	--
Oil	500	--	--	--	250 U	250 U	--	**340**	750 U	500 U	**250**	**250**
Polycyclic Aromatic Hydrocarbons (µg/L)												
1-Methylnaphthalene	--	--	--	0.1 U	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	0.1 U	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	5 U	0.1 U	--	**0.01**	**0.03**	--	--	--	--	--
Acenaphthylene	--	--	5 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Anthracene	9.6	--	5 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Benzo(a)anthracene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Benzo(a)pyrene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Chrysene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Dibenzofuran	--	--	--	0.1 U	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Fluorene	3	--	5 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Naphthalene	83	--	5 U	0.1 U	1 U	0.01 U	**0.06**	--	--	--	--	--
Phenanthrene	--	--	5 U	0.1 U	--	0.01 U	**0.02**	--	--	--	--	--
Pyrene	15	--	0.5 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	--	0.1 U	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--
Semivolatile Organics (µg/L)												
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

	Area	MW-53(C)			MW-56(C)							
	Location ID	**MW-53(C)**	**MW-53(C)**	**MW-53(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**
	Sample ID	**MW-53_082899**	**MW-53_032299**	**MW-53_102598**	**MW-56(C)-0907**	**MW-56_0303**	**MW-56_092302**	**MW-56_090502**	**MW-56_032502**	**MW-56_072501**	**MW-56_033001**	**MW-56_0900**
	Sample Date	**08/28/1999**	**03/22/1999**	**10/25/1998**	**09/21/2007**	**03/25/2003**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/25/2001**	**03/30/2001**	**09/19/2000**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**											
Metals, Dissolved (µg/L)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--
Metals (µg/L)												
Antimony	--	--	--	--	--	9.9 U	9.9 U	--	--	--	--	--
Arsenic	5	--	--	--	--	**30**	**28.4**	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--
Cadmium	8.8	--	--	--	--	0.94 U	10 U	--	--	--	--	--
Chromium	260	--	--	--	--	**57**	**127**	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	**14**	**27.3**	--	--	--	--	--
Lead	8.1	--	--	--	--	**5.9**	**14.2**	--	--	--	--	--
Mercury	0.059	--	--	--	--	0.079 U	**0.098**	--	--	--	--	--
Nickel	8.2	--	--	--	--	**16**	**29.3**	--	--	--	--	--
Selenium	71	--	--	--	--	4.8 U	4.8 U	--	--	--	--	--
Silver	1,900	--	--	--	--	1.4 U	1.4 U	--	--	--	--	--
Thallium	--	--	--	--	--	9.5 U	9.5 U	--	--	--	--	--
Zinc	81	--	--	--	--	**50**	**141**	--	--	--	--	--
Conventional Parameters (µg/L)												
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	--	--	--	**168,000**	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	**5,400**	--	--	--	--	--	--	--
Iron	--	--	--	--	**5,580**	--	--	--	--	--	--	--
Magnesium	--	--	--	--	**15,100**	--	--	--	--	--	--	--
Manganese	100	--	--	--	**364**	--	--	--	--	--	--	--
Potassium	--	--	--	--	**23,400**	--	--	--	--	--	--	--
Sodium	--	--	--	--	**95,100**	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area	MW-53(C)			MW-56(C)							
	Location ID	MW-53(C)	MW-53(C)	MW-53(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)
	Sample ID	MW-53_082899	MW-53_032299	MW-53_102598	MW-56(C)-0907	MW-56_0303	MW-56_092302	MW-56_090502	MW-56_032502	MW-56_072501	MW-56_033001	MW-56_0900
	Sample Date	08/28/1999	03/22/1999	10/25/1998	09/21/2007	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001	03/30/2001	09/19/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N
	Screening Level											
Total Petroleum Hydrocarbons (µg/L)												
Gasoline range hydrocarbons	800	**50**	**50**	**50**	250 U	50 U	--	50 U	50 U	50 U	50 U	**50**
Diesel range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	500	**394**	**458**	**543**	250 U	250 U	--	**3,300**	250 U	**727**	**390**	**250**
Motor oil range hydrocarbons	500	--	--	--	500 U	--	--	--	--	--	--	--
Oil	500	**250**	**250**	**250**	--	250 U	--	**810**	750 U	500 U	750 U	**250**
Polycyclic Aromatic Hydrocarbons (µg/L)												
1-Methylnaphthalene	--	--	--	--	0.1 U	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Acenaphthylene	--	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Anthracene	9.6	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Chrysene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Dibenzofuran	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Fluorene	3	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Naphthalene	83	--	--	--	0.1 U	**0.01**	0.01 U	--	--	--	--	--
Phenanthrene	--	--	--	--	0.1 U	**0.01**	0.01 U	--	--	--	--	--
Pyrene	15	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	--	--	--	0.1 U	0.01 U	0.01 U	--	--	--	--	--
Semivolatile Organics (µg/L)												
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

	Area	MW-56(C)				RMW-11						
	Location ID	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	RMW-11	RMW-11	RMW-11	RMW-11	RMW-11	RMW-11	RMW-11
	Sample ID	MW-56_031000	MW-56_082899	MW-56_032299	MW-56_102598	RMW-11-0907	RMW-11-110499	RMW-11-110499B	RMW-11-101299	RMW-11-81199	RMW-11-41499	RMW-11-30999
	Sample Date	03/10/2000	08/28/1999	03/22/1999	10/25/1998	09/20/2007	11/04/1999	11/04/1999	10/12/1999	08/11/1999	04/14/1999	03/09/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level											
Metals, Dissolved (µg/L)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--
Metals (µg/L)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	50 U	**4**	**4**	**4**	**4**	**3**	**2**
Barium	--	--	--	--	--	**210**	**338**	**339**	--	**365**	**362**	**422**
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	**70**	**319**	**317**	--	**1,560**	**120**	**596**
Chromium VI	50	--	--	--	--	11 U	60 U	60 U	--	10 U	10 U	110 U
Copper	3.1	--	--	--	--	2 U	2 U	2 U	**3**	**21**	2 U	**4**
Lead	8.1	--	--	--	--	20 U	**2**	**3**	**6**	**56**	1 U	**8**
Mercury	0.059	--	--	--	--	0.1 U	0.1 U	0.1 U	--	**0.1**	0.2 U	0.1 U
Nickel	8.2	--	--	--	--	10 U	10 U	10 U	10 U	**20**	10 U	10 U
Selenium	71	--	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	10 U	6 U	6 U	**18**	**115**	**19**	**12**
Conventional Parameters (µg/L)												
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	5 U	5 U	5 U	--	**5**	5 U	5 U
Calcium	--	--	--	--	--	**206,000**	**232,000**	**232,000**	--	**97,300**	**247,000**	**158,000**
Ferrous iron	--	--	--	--	--	--	**38,000**	**39,000**	--	**3,400**	**44,000**	**12,000**
Iron	--	--	--	--	--	--	**38,200**	**37,700**	--	**8,530**	**43,300**	**13,400**
Magnesium	--	--	--	--	--	**30,500**	**48,800**	**49,200**	--	**177,000**	**46,400**	**198,000**
Manganese	100	--	--	--	--	--	**975**	**978**	--	**174**	**1,220**	**464**
Potassium	--	--	--	--	--	**33,600**	--	--	--	--	--	--
Sodium	--	--	--	--	--	**107,000**	**202,000**	**204,000**	--	**1,350,000**	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

	Area	MW-56(C)				RMW-11						
	Location ID	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	RMW-11	RMW-11	RMW-11	RMW-11	RMW-11	RMW-11	RMW-11
	Sample ID	MW-56_031000	MW-56_082899	MW-56_032299	MW-56_102598	RMW-11-0907	RMW-11-110499	RMW-11-110499B	RMW-11-101299	RMW-11-81199	RMW-11-41499	RMW-11-30999
	Sample Date	03/10/2000	08/28/1999	03/22/1999	10/25/1998	09/20/2007	11/04/1999	11/04/1999	10/12/1999	08/11/1999	04/14/1999	03/09/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N
Analyte	**Screening Level**											
Total Petroleum Hydrocarbons (µg/L)												
Gasoline range hydrocarbons	800	**50**	**50**	**50**	**50**	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	500	**301**	**633**	**446**	**881**	250 U	**410**	**440**	--	**1,300**	**400**	**360**
Motor oil range hydrocarbons	500	--	--	--	--	500 U	--	--	--	--	--	--
Oil	500	**250**	**250**	**250**	**250**	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)												
1-Methylnaphthalene	--	--	--	--	--	0.1 U	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Acenaphthene	3.3	--	--	--	--	**0.37**	1 U	1 U	--	1 U	1 U	--
Acenaphthylene	--	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Anthracene	9.6	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Benzo(a)anthracene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Benzo(a)pyrene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Benzo(b)fluoranthene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Benzo(g,h,i)perylene	--	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Benzo(k)fluoranthene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Chrysene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Dibenzofuran	--	--	--	--	--	0.1 U	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Fluorene	3	--	--	--	--	**0.22**	1 U	1 U	--	1 U	1 U	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Naphthalene	83	--	--	--	--	**0.11**	1 U	1 U	--	**3.6**	1 U	--
Phenanthrene	--	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Pyrene	15	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	--	--	--	--	0.1 U	1 U	1 U	--	1 U	1 U	--
Semivolatile Organics (µg/L)												
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	1 U	1 U	--	1 U	1 U	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-11D				RMW-6D			
	Location ID	RMW-11D	RMW-11D	RMW-11D	RMW-11D	RMW-6D	RMW-6D	RMW-6D	RMW-6D
	Sample ID	RMW-11D-110499	RMW-11D-81199	RMW-11D-41399	RMW-11D-030999	RMW-6(D)-0907	RMW-6D-36382	RMW-6D-36264	RMW-6D-36201
	Sample Date	11/04/1999	08/11/1999	04/13/1999	03/09/1999	09/21/2007	08/10/1999	04/14/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N
Metals, Dissolved (µg/L)									
Antimony	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--
Metals (µg/L)									
Antimony	--	--	--	--	--	--	--	--	--
Arsenic	5	**3**	**3**	**3**	**2**	50 U	**4**	**6**	**8**
Barium	--	**373**	**363**	**461**	**462**	**715**	**53**	**65**	**43**
Beryllium	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--
Chromium	260	**1050**	**945**	**931**	**868**	**88**	**114**	**151**	**141**
Chromium VI	50	60 U	10 U	60 U	110 U	--	10 U	10 U	100 U
Copper	3.1	2 U	2 U	2 U	2 U	**49**	2 U	2 U	2 U
Lead	8.1	**4**	**5**	1 U	1 U	**60**	1 U	1 U	1 U
Mercury	0.059	0.1 U	0.1 U	0.2 U	0.1 U	**0.3**	0.1 U	0.2 U	0.1 U
Nickel	8.2	10 U	10 U	10 U	10 U	**50**	10 U	10 U	10 U
Selenium	71	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--
Zinc	81	**7**	**13**	**13**	**5**	**210**	**6**	**7**	**7**
Conventional Parameters (µg/L)									
Cyanide, Weak acid dissociable (WAD)	--	**5**	**6**	5 U	5 U	5 U	5 U	**10**	5 U
Calcium	--	**104,000**	**102,000**	**118,000**	**114,000**	**124,000**	**92,800**	**89,100**	**83,600**
Ferrous iron	--	**1,600**	**2,100**	**2,100**	**900**	**14,200**	**820**	**410**	**290**
Iron	--	**810**	**920**	**980**	**930**	**34,500**	**390**	**280**	**220**
Magnesium	--	**229,000**	**239,000**	**285,000**	**283,000**	**84,400**	**245,000**	**193,000**	**155,000**
Manganese	100	**124**	**149**	**168**	**167**	**1,910**	**111**	**120**	**132**
Potassium	--	--	--	--	--	**43,400**	--	--	--
Sodium	--	**1,710,000**	**1,830,000**	--	--	**1,270,000**	**2,710,000**	--	--

Table 6-3b
Landfill Perimeter Groundwater Results – South

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-11D				RMW-6D			
	Location ID	RMW-11D	RMW-11D	RMW-11D	RMW-11D	RMW-6D	RMW-6D	RMW-6D	RMW-6D
	Sample ID	RMW-11D-110499	RMW-11D-81199	RMW-11D-41399	RMW-11D-030999	RMW-6(D)-0907	RMW-6D-36382	RMW-6D-36264	RMW-6D-36201
	Sample Date	11/04/1999	08/11/1999	04/13/1999	03/09/1999	09/21/2007	08/10/1999	04/14/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N
Analyte	Screening Level								
Total Petroleum Hydrocarbons (µg/L)									
Gasoline range hydrocarbons	800	--	--	--	--	250 U	--	--	--
Diesel range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	500	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	500	**860**	**820**	**720**	**610**	250 U	250 U	250 U	250 U
Motor oil range hydrocarbons	500	--	--	--	--	500 U	--	--	--
Oil	500	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)									
1-Methylnaphthalene	--	--	--	--	--	0.1 U	--	--	--
2-Methylnaphthalene	--	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Acenaphthene	3.3	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Acenaphthylene	--	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Anthracene	9.6	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Chrysene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Dibenzofuran	--	--	--	--	--	0.1 U	--	--	--
Fluoranthene	3.3	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Fluorene	3	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Naphthalene	83	**1**	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Phenanthrene	--	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Pyrene	15	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.02	1 U	1 U	1 U	--	0.1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)									
bis(2-Ethylhexyl)phthalate	1	1 U	1 U	1 U	--	--	1 U	1 U	**2**

Table 6-3c
Landfill Perimeter Groundwater Results – North

Analyte	Area	MW-1 (E)		MW-6(O)	RMW-10				
	Location ID	MW-1(E)	MW-1(E)	MW-6(O)	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10
	Sample ID	MW-1E-0308	MW-1(E)-0907	OMW-6_0301	RMW-10-0907	RMW-10-1_1200	RMW-10-110399	RMW-10-1199	RMW-10-0899
	Sample Date	03/25/2008	09/19/2007	03/06/2001	09/20/2007	12/13/2000	11/03/1999	11/03/1999	08/10/1999
	Sample Type	N	N	N	N	N	N	N	N
	Screening Level								
Metals, Dissolved (µg/L)									
Antimony	--	--	--	--	--	--	--	--	--
Arsenic	5	50 U	--	--	--	--	--	--	--
Barium	--	**55**	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--
Chromium	260	**72**	--	--	--	--	--	--	--
Copper	3.1	2 U	--	--	--	--	--	--	--
Lead	8.1	20 U	--	--	--	--	--	--	--
Mercury	0.059	0.1 U	--	--	--	--	--	--	--
Nickel	8.2	10 U	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--
Zinc	81	10 U	--	--	--	--	--	--	--
Metals (µg/L)									
Arsenic	5	50 U	50 U	1 U	50 U	1 U	1 U	1 U	**1**
Barium	--	**48**	**118**	**25**	**16**	**31.4**	**47**	**47**	**49**
Cadmium	8.8	--	--	1 U	--	1 U	--	--	--
Chromium	260	**75**	**118**	**5.07**	**10**	**17**	**96**	**96**	**88**
Chromium VI	50	--	11 U	5 U	11 U	5 U	60 U	60 U	10 U
Copper	3.1	2 U	2 U	--	2 U	--	2 U	2 U	2 U
Lead	8.1	20 U	20 U	1 U	20 U	1 U	1 U	1 U	1 U
Mercury	0.059	0.1 U	0.1 U	1 U	0.1 U	1 U	0.1 U	0.1 U	0.1 U
Nickel	8.2	10 U	10 U	--	10 U	--	10 U	10 U	10 U
Selenium	71	--	--	1 U	--	**1.5**	--	--	--
Silver	1900	--	--	1 U	--	1 U	--	--	--
Zinc	81	10 U	10 U	10 U	10 U	10 U	**7**	**7**	**6**
Conventional Parameters (µg/L)									
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	--	5 U	--	5 U	5 U	5 U
Calcium	--	**154,000**	**154,000**	--	**112,000**	--	**150,000**	**150,000**	**155,000**
Ferrous iron	--	--	--	--	**10,100**	--	**29,000**	**29,000**	**30,000**
Iron	--	--	--	--	**10,200**	--	**27,600**	**27,600**	**29,000**
Magnesium	--	**98,700**	**108,000**	--	**26,400**	--	**47,400**	**47,400**	**50,900**
Manganese	100	--	--	--	**694**	--	**1,040**	**1,040**	**1,220**
Potassium	--	**89,800**	**107,000**	--	**14,300**	--	--	--	--
Sodium	--	**236,000**	**296,000**	--	**30,300**	--	**164,000**	**164,000**	**193,000**
Total Petroleum Hydrocarbons (µg/L)									
Gasoline range hydrocarbons	800	250 U	--	50 U	--	50 U	--	--	--
Diesel range hydrocarbons	500	250 U	250 U	**489**	250 U	250 U	**250**	**250**	250 U
Motor oil range hydrocarbons	500	500 U	500 U	--	500 U	--	--	--	--
Oil	--	--	--	500 U	--	500 U	--	--	--

Table 6-3c
Landfill Perimeter Groundwater Results – North

Analyte	Area	MW-1 (E)		MW-6(O)	RMW-10				
	Location ID	MW-1(E)	MW-1(E)	MW-6(O)	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10
	Sample ID	MW-1E-0308	MW-1(E)-0907	OMW-6_0301	RMW-10-0907	RMW-10-1_1200	RMW-10-110399	RMW-10-1199	RMW-10-0899
	Sample Date	03/25/2008	09/19/2007	03/06/2001	09/20/2007	12/13/2000	11/03/1999	11/03/1999	08/10/1999
	Sample Type	N	N	N	N	N	N	N	N
	Screening Level								
Polycyclic Aromatic Hydrocarbons (µg/L)									
1-Methylnaphthalene	--	0.1 U	1 U	--	0.1 U	--	--	--	--
2-Methylnaphthalene	--	0.1 U	1 U	--	0.1 U	--	1 U	1 U	1 U
Acenaphthene	3.3	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Acenaphthylene	--	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Anthracene	9.6	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Chrysene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Dibenzofuran	--	0.1 U	--	--	0.1 U	--	--	1 U	1 U
Fluoranthene	3.3	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Fluorene	3	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Naphthalene	83	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Phenanthrene	--	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Pyrene	15	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Total cPAH TEQ	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)									
bis(2-Ethylhexyl)phthalate	1	--	1 U	--	--	--	1 U	1 U	1 U

Table 6-3c

Landfill Perimeter Groundwater Results – North

Analyte	Area	RMW-10					RMW-20		
	Location ID	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-20	RMW-20	RMW-20
	Sample ID	RMW-10-81099	RMW-10-0499	RMW-10-41499	RMW-10-0299	RMW-10-20999	RMW-20-0308	DUPLICATE 1-0308	RMW-20-0907
	Sample Date	08/10/1999	04/14/1999	04/14/1999	02/09/1999	02/09/1999	03/26/2008	03/26/2008	09/19/2007
	Sample Type	N	N	N	N	N	N	FD	N
	Screening Level								
Metals, Dissolved (µg/L)									
Antimony	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	50 U	--	--
Barium	--	--	--	--	--	--	**11**	--	--
Beryllium	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	5 U	--	--
Copper	3.1	--	--	--	--	--	2 U	--	--
Lead	8.1	--	--	--	--	--	20 U	--	--
Mercury	0.059	--	--	--	--	--	0.1 U	--	--
Nickel	8.2	--	--	--	--	--	10 U	--	--
Selenium	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	10 U	--	--
Metals (µg/L)									
Arsenic	5	**1**	**1**	**1**	1 U	1 U	50 U	--	50 U
Barium	--	**49**	**37**	**37**	**33**	**33**	**12**	--	**15**
Cadmium	8.8	--	--	--	--	--	--	--	--
Chromium	260	**88**	**160**	**160**	**75**	**75**	5 U	--	5 U
Chromium VI	50	10 U	10 U	10 U	60 U	60 U	12 U	--	11 U
Copper	3.1	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U
Lead	8.1	1 U	1 U	1 U	1 U	1 U	20 U	--	20 U
Mercury	0.059	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	0.1 U	--	0.1 U
Nickel	8.2	10 U	**10**	**10**	10 U	10 U	10 U	--	10 U
Selenium	71	--	--	--	--	--	--	--	--
Silver	1900	--	--	--	--	--	--	--	--
Zinc	81	**6**	**6**	**6**	**8**	**8**	10 U	--	10 U
Conventional Parameters (µg/L)									
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U
Calcium	--	**155,000**	**145,000**	**145,000**	**137,000**	**137,000**	**78,700**	--	**87,700**
Ferrous iron	--	**30,000**	**29,000**	**29,000**	**52,000**	**52,000**	--	--	--
Iron	--	**29,000**	**28,100**	**28,100**	**24,000**	**24,000**	--	--	--
Magnesium	--	**50,900**	**44,600**	**44,600**	**42,300**	**42,300**	**38,700**	--	**37,400**
Manganese	100	**1,220**	**1,030**	**1,030**	**970**	**970**	--	--	--
Potassium	--	--	--	--	--	--	**140,000**	--	**124,000**
Sodium	--	**193,000**	--	--	--	--	**155,000**	--	**149,000**
Total Petroleum Hydrocarbons (µg/L)									
Gasoline range hydrocarbons	800	--	--	--	--	--	250 U	--	--
Diesel range hydrocarbons	500	250 U	250 U	250 U	250 U	250 U	250 U	--	250 U
Motor oil range hydrocarbons	500	--	--	--	--	--	500 U	--	500 U
Oil	--	--	--	--	--	--	--	--	--

Table 6-3c
Landfill Perimeter Groundwater Results – North

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	RMW-10					RMW-20		
	Location ID	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-20	RMW-20	RMW-20
	Sample ID	RMW-10-81099	RMW-10-0499	RMW-10-41499	RMW-10-0299	RMW-10-20999	RMW-20-0308	DUPLICATE 1-0308	RMW-20-0907
	Sample Date	08/10/1999	04/14/1999	04/14/1999	02/09/1999	02/09/1999	03/26/2008	03/26/2008	09/19/2007
	Sample Type	N	N	N	N	N	N	FD	N
Analyte	Screening Level								
Polycyclic Aromatic Hydrocarbons (µg/L)									
1-Methylnaphthalene	--	--	--	--	--	--	0.1 U	0.1 U	1 U
2-Methylnaphthalene	--	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Acenaphthene	3.3	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Acenaphthylene	--	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Anthracene	9.6	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Benzo(a)anthracene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Benzo(a)pyrene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Benzo(b)fluoranthene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Benzo(g,h,i)perylene	--	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Benzo(k)fluoranthene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Chrysene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Dibenzo(a,h)anthracene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Dibenzofuran	--	--	1 U	--	1 U	--	0.1 U	0.1 U	--
Fluoranthene	3.3	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Fluorene	3	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Naphthalene	83	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Phenanthrene	--	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Pyrene	15	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Total cPAH TEQ	0.02	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	1 U
Semivolatile Organics (µg/L)									
bis(2-Ethylhexyl)phthalate	1	1 U	1 U	1 U	**5.8**	**5.8**	--	--	1 U

Table 6-4
C Street Properties Soil Results

Analyte	Screening Level	CWSS-4	CWSS-5	CWSS-6	CWSS-7	CWSS-8	CWSS-9	CWSS-10	CWSS-11	CWSS-12	CWSS-13	CWSS-14	CWSS-15	CWSS-16
	Area	Remedial Investigation Surface Soil Sampling												
	Location ID	CWSS-4	CWSS-5	CWSS-6	CWSS-7	CWSS-8	CWSS-9	CWSS-10	CWSS-11	CWSS-12	CWSS-13	CWSS-14	CWSS-15	CWSS-16
	Sample ID	CWSS-4	CWSS-5-0-1	CWSS-6	CWSS-7	CWSS-8	CWSS-9	CWSS-10	CWSS-11	CWSS-12	CWSS-13	CWSS-14	CWSS-15	CWSS-16
	Sample Date	12/21/2007	08/13/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007	12/21/2007
	Sample Depth	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft	0-1 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1240893.493	1241158.74	1241292.303	1241365.437	1241299.702	1241361.636	1241181.893	1241178.129	1241367.282	1241306.595	1241502.18	1241504.093	1241399.041
	Y	642925.398	643054.736	643102.2897	643180.1531	643351.658	643433.7113	643429.3684	643603.9941	643608.3671	643740.3006	643794.4353	643902.4387	643876.1763
Analyte	Screening Level													
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	7.8	--	10	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	59	11	58	36	5.4 U	70	67	5.4 U	100	84	53 U	48	12
Motor oil range hydrocarbons	2,000	370	35	340	120	11 U	100	250	11 U	1500	240	880	160	46
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)														
Benzene	0.005	0.0009 U	--	0.0017 U	--	--	--	--	--	--	--	--	--	--
Toluene	10	0.0009 U	--	0.0017 U	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	0.0009 U	--	0.0017 U	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	0.0009 U	--	0.0017 U	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	0.0009 U	--	0.0017 U	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	0.0019 U	--	0.0034 U	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	0.0046 U	--	0.0085 U	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	6	10 U	20 U	13	5 U	22	5 U	10 U	5 U	20	11	20	20
Barium	16,000	115	119	73.7	89.6	185	54.2	55.1	89.1	73.6	78.9	76.5	134	94.1
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	33.3	44	29	30.4	10.9	37.8	18.2	19	23.8	41	23.2	39	30
Chromium VI	48	0.454 U	0.127 U	0.499 U	0.469 U	--	0.469 U	0.43 U	0.429 U	0.432 U	0.438 U	0.432 U	0.449 U	0.416 U
Copper	36	51.3	51.7	106	46.1	37.8	58.1	27.7	42.3	31.3	111	93	114	96.6
Lead	81	9	6	9	29	2 U	21	7	5 U	9	11	13	265	20
Mercury	0.1	0.14	0.13	0.1	0.06 U	0.04 U	0.05 U	0.04 U	0.04 U	0.1	0.05	0.06	0.09	0.05
Nickel	48	30	36	23	26	13	44	46	23	29	28	31	37	33
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	71	90	232	95	31	125	41	75	54	577	76	322	145
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	0.066 U	0.0065	0.063 U	0.032	0.0048 U	0.015	0.12	0.0049 U	0.024 U	0.037	0.024 U	0.012	0.0048 U
2-Methylnaphthalene	320	0.066 U	0.013	0.063 U	0.033	0.0048 U	0.017	0.093	0.0049 U	0.024 U	0.078	0.024 U	0.013	0.0048 U
Acenaphthene	0.13	0.066 U	0.0047	0.063 U	0.0049 U	0.0048 U	0.0048 U	0.0048 U	0.0049 U	0.024 U	0.0048 U	0.024 U	0.01	0.0048 U
Acenaphthylene	--	0.066 U	0.0047 U	0.063 U	0.0049 U	0.0048 U	0.0062	0.0048 U	0.0049 U	0.024 U	0.0048 U	0.024 U	0.0097	0.0048 U
Anthracene	1.7	0.066 U	0.0098	0.063 U	0.0059	0.0048 U	0.0048 U	0.014	0.0049 U	0.024 U	0.0048 U	0.024 U	0.054	0.0048 U
Benzo(a)anthracene	0.056	0.066 U	0.016	0.063 U	0.025	0.0048 U	0.0086	0.033	0.0049 U	0.041	0.0048 U	0.068	0.37	0.0048 U
Benzo(a)pyrene	0.14	0.066 U	0.014	0.063 U	0.032	0.0048 U	0.014	0.026	0.0049 U	0.056	0.0048 U	0.068	0.17	0.0048 U
Benzo(b)fluoranthene	0.19	0.066 U	0.041	0.063 U	0.042	0.0048 U	0.016	0.035	0.0049 U	0.039	0.0078	0.07	0.32	0.0062
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.066 U	0.0075	0.063 U	0.016	0.0048 U	0.016	0.039	0.0049 U	0.075	0.0048 U	0.039	0.05	0.0048 U
Benzo(k)fluoranthene	0.19	0.066 U	0.014	0.063 U	0.027	0.0048 U	0.016	0.035	0.0049 U	0.078	0.0053	0.073	0.32	0.0077
Chrysene	0.062	0.066 U	0.032	0.063 U	0.036	0.0048 U	0.022	0.06	0.0049 U	0.066	0.0082	0.082	0.64	0.0082
Dibenzo(a,h)anthracene	0.14	0.066 U	0.0047 U	0.063 U	0.0054	0.0048 U	0.0096	0.0077	0.0049 U	0.024 U	0.0048 U	0.024 U	0.019	0.0048 U
Dibenzofuran	80	--	0.007	--	0.0093	0.0048 U	0.0053	0.029	0.0049 U	0.024 U	0.0048 U	0.024 U	0.011	0.0048 U
Fluoranthene	1.3	0.1	0.038	0.063 U	0.042	0.0048 U	0.027	0.061	0.0049 U	0.1	0.013	0.2	0.92	0.0082
Fluorene	0.18	0.066 U	0.0075	0.063 U	0.0049 U	0.0048 U	0.0048 U	0.0048 U	0.0049 U	0.024 U	0.0048 U	0.024 U	0.014	0.0048 U
Indeno(1,2,3-c,d)pyrene	0.55	0.066 U	0.0047 U	0.063 U	0.014	0.0048 U	0.012	0.031	0.0049 U	0.029	0.0048 U	0.034	0.052	0.0048 U
Naphthalene	0.8	0.066 U	0.0079	0.063 U	0.018	0.0048 U	0.013	0.035	0.0049 U	0.024 U	0.032	0.024 U	0.014	0.0048 U
Phenanthrene	--	0.076	0.029	0.063 U	0.038	0.0048 U	0.034	0.11	0.0049 U	0.041	0.0087	0.12	0.11	0.0062
Pyrene	8	0.098	0.029	0.063 U	0.048	0.0048 U	0.025	0.06	0.0049 U	0.085	0.0092	0.16	1.1	0.0086
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	0.066 U	0.0219	0.063 U	0.0437	0.0048 U	0.0204	0.0408	0.0049 U	0.07656	0.0045	0.09452	0.2845	0.0046

Table 6-4
C Street Properties Soil Results

	Area	Remedial Investigation Surface Soil Sampling		Chevron Interim Action Sampling									
	Location ID	CWSS-17	CWSS-18	CSIA-20130107-001B	CSIA-20130107-002B	CSIA-20130107-003S+3	CSIA-20130107-004S+6	CSIA-20130107-005S+9	CSIA-20130109-006B	CSIA-20130109-007B	CSIA-20130109-008S+3	CSIA-20130109-009S+6	CSIA-20130109-010S+9
	Sample ID	CWSS-17	CWSS-18	CSIA-20130107-001B	CSIA-20130107-002B	CSIA-20130107-003S+3	CSIA-20130107-004S+6	CSIA-20130107-005S+9	CSIA20130109-006B	CSIA20130109-007B	CSIA20130109-008S+3	CSIA20130109-009S+6	CSIA20130109-010S+9
	Sample Date	12/21/2007	12/21/2007	01/07/2013	01/07/2013	01/07/2013	01/07/2013	01/07/2013	01/09/2013	01/09/2013	01/09/2013	01/09/2013	01/09/2013
	Sample Depth	0-1 ft	0-1 ft	10-10 ft	10-10 ft	3-3 ft	6-6 ft	9-9 ft	10-10 ft	10-10 ft	3-3 ft	6-6 ft	9-9 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241399.694	1241312.566	1240976	1240968	1240962	1240958	1240953	1240993	1240979	1240968	1240961	1240959
	Y	643951.3287	644037.3203	642810.2	642816.8	642824.4	642832	642841.3	642818.4	642827.2	642837.4	642841.6	642847.8
Analyte	**Screening Level**												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	--	1.8 U	2.8 U	3.3 U	5.1 U	3 U	2.8 U	2.1 U	3 U	2.4 U	**14**
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	**43**	**54**	**20**	**330**	**43**	5.9 U	**280**	6 U	**14**	**160**
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	**54**	**68**	**30**	**820**	**120**	12 U	**130**	12 U	**30**	**67**
Diesel range hydrocarbons	2,000	**38**	**15**	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	**140**	**68**	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	0.00052 U	0.00044 U	0.0006 U	0.0011 U	0.0007 U	**0.0003 J**	**0.00045 J**	**0.00038 J**	0.00044 U	**0.00026 J**
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	**8**	**14**	--	--	--	--	--	--	--	--	--	--
Barium	16,000	**545**	**91.1**	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	**30.2**	**45.1**	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	0.474 U	0.446 U	--	--	--	--	--	--	--	--	--	--
Copper	36	**67.6**	**63.4**	--	--	--	--	--	--	--	--	--	--
Lead	81	**80**	**166**	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	**0.1**	0.05 U	--	--	--	--	--	--	--	--	--	--
Nickel	48	**31**	**35**	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	**142**	**123**	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	0.0049 U	**0.023**	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	**0.0049**	**0.021**	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	0.0049 U	0.0048 U	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	0.0049 U	**0.0053**	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	0.0049 U	**0.0053**	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	**0.01**	**0.021**	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	**0.01**	**0.023**	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	**0.014**	**0.029**	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	**0.0074**	**0.014**	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	**0.014**	**0.029**	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	**0.017**	**0.036**	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	0.0049 U	0.0048 U	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	0.0049 U	**0.012**	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	**0.022**	**0.053**	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	0.0049 U	0.0048 U	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	**0.0054**	**0.012**	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	0.0049 U	**0.012**	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	**0.011**	**0.035**	--	--	--	--	--	--	--	--	--	--
Pyrene	8	**0.021**	**0.047**	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	**0.0148**	**0.0327**	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	Chevron Interim Action Sampling								CWSI-01		CWSI-02		
	Location ID	CSIA-20130110-011B	CSIA-20130110-012B	CSIA-20130110-013S+3	CSIA-20130110-014S+6	CSIA-20130110-015S+9	CSIA-20130111-016B	CSIA-20130111-017B	CSIA-20130111-018S+9	CWSI-01	CWSI-01	CWSI-02	CWSI-02	CWSI-02
	Sample ID	CSIA20130110-011B	CSIA20130110-012B	CSIA20130110-013S+3	CSIA20130110-014S+6	CSIA20130110-015S+9	CSIA20130111-016B	CSIA20130111-017B	CSIA20130111-018S+9	CWSI-01-3-5	CWSI-01-11-13	CWSI-02-12-13	CWSI-02-7-8	CWSI-02-1-3
	Sample Date	01/10/2013	01/10/2013	01/10/2013	01/10/2013	01/10/2013	01/11/2013	01/11/2013	01/11/2013	10/25/2012	10/25/2012	10/25/2012	10/25/2012	10/25/2012
	Sample Depth	10-10 ft	10-10 ft	3-3 ft	6-6 ft	9-9 ft	10-10 ft	10-10 ft	9-9 ft	3-5 ft	11-13 ft	1-3 ft	7-8 ft	12-13 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241001	1240999	1240984	1240983	1240981	1241020	1241007.51	1241003.09	1241515.069	1241515.069	1241464.667	1241464.667	1241464.667
	Y	642832.2	642838.5	642859	642864.8	642868.8	642850.6	642859.13	642874.23	643326.409	643326.409	643255.767	643255.767	643255.767
Analyte	**Screening Level**													
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	**20**	**5.6**	**100**	**95**	**65**	**26**	**8.6**	**100**	10 U	6.4 U	7 U	**7.6**	6.5 U
Diesel range hydrocarbons (silica gel treated)	2,000	**610**	**170**	**8.1**	**5,600**	**4,600**	**1,600**	**1,300**	**240**	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	**210**	**63**	12 U	**950**	**860**	**300**	**240**	**170**	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	**41**	**95**	**39**	**150**	5.2 U
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	**140**	**120**	**98**	**280**	10 U
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)														
Benzene	0.005	**0.0022**	**0.0036**	**0.0034**	0.0048 U	**0.0026 J**	**0.0014**	0.00046 U	**0.00087**	**0.0012 J**	0.001 U	**0.0008 J**	**0.0009 J**	**0.0011 J**
Toluene	10	--	--	--	--	--	--	--	--	**0.0007 J**	0.001 U	**0.0006 J**	0.0012 U	**0.001 J**
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	0.0013 U	0.001 U	**0.0006 J**	0.0012 U	0.0012 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	0.0013 U	0.001 U	0.001 U	0.0012 U	0.0012 U
o-Xylene	0.95	--	--	--	--	--	--	--	--	0.0013 U	0.001 U	0.001 U	0.0012 U	0.0012 U
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	20 UJ	30 UJ	30 UJ	60 UJ	**5 J**
Arsenic	7	--	--	--	--	--	--	--	--	20 U	30 U	30 U	60 U	**25**
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	0.3 U	0.6 U	0.6 U	1 U	**0.1**
Cadmium	1	--	--	--	--	--	--	--	--	**1.4**	1 U	**1**	2 U	0.2 U
Chromium	260	--	--	--	--	--	--	--	--	**38**	**57**	**30**	**128**	**14.2**
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	**148**	**359**	**209**	**403**	**41.4**
Lead	81	--	--	--	--	--	--	--	--	**166**	**110**	**40**	**1260**	**16**
Mercury	0.1	--	--	--	--	--	--	--	--	**0.06**	**0.22**	0.02 U	**0.05**	0.03 U
Nickel	48	--	--	--	--	--	--	--	--	**39**	**109**	**39**	**160**	**19**
Selenium	1	--	--	--	--	--	--	--	--	20 U	30 U	30 U	60 U	5 U
Silver	0.02	--	--	--	--	--	--	--	--	0.9 U	2 U	2 U	4 U	0.3 U
Thallium	--	--	--	--	--	--	--	--	--	20 U	30 U	30 U	60 U	5 U
Zinc	85	--	--	--	--	--	--	--	--	**347**	**273**	**162**	**250**	**52**
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Area	CWSI-03		CWSI-04			CWSI-05			CWSI-06		CWSI-07	Chevron Interim Action Test Pits	
	Location ID	CWSI-03	CWSI-03	CWSI-04	CWSI-04	CWSI-04	CWSI-05	CWSI-05	CWSI-05	CWSI-06	CWSI-06	CWSI-07	CW-TP-01	CW-TP-02
	Sample ID	CWSI-03-2-4	CWSI-03-7-9	CWSI-04-2-4	CWSI-04-6-8	CWSI-04-13.5-15	CWSI-05-2-4	CWSI-05-7-9	CWSI-05-12-14	CWSI-06-8-10	CWSI-06-12-14	CWSI-07-2-4	CW-TP-01-8-9	CW-TP-02-8.2-9.2
	Sample Date	10/25/2012	10/25/2012	10/25/2012	10/25/2012	10/25/2012	10/26/2012	10/26/2012	10/26/2012	10/26/2012	10/26/2012	10/26/2012	07/06/2012	07/06/2012
	Sample Depth	2-4 ft	7-9 ft	2-4 ft	6-8 ft	13.5-15 ft	2-4 ft	7-9 ft	12-14 ft	8-10 ft	12-14 ft	2-4 ft	8-9 ft	8.2-9.2 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241277.725	1241277.725	1241207.421	1241207.421	1241207.421	1241174.122	1241174.122	1241174.122	1241144.947	1241144.947	1241414.839	1240861.7275	1240872.3853
	Y	643079.964	643079.964	643013.658	643013.658	643013.658	642980.831	642980.831	642980.831	642965.046	642965.046	643208.870	642926.8780	642933.1988
Analyte	**Screening Level**													
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	9.5 U	8.8 U	6.4 U	7.8 U	**19**	**24**	7.6 U	**160**	**1,300**	**62**	7.3 U	**1,400**	**800**
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	**11,000**	**5,700**
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	**940**	**570**
Diesel range hydrocarbons	2,000	**100**	**300**	**67**	**24**	**200**	**69**	**200**	**420**	**1,300**	**240**	**230**	**12,000**	**6,600**
Motor oil range hydrocarbons	2,000	**84**	**410**	**97**	**37**	**260**	**130**	**250**	**590**	**640**	**330**	**220**	**1,400**	**880**
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)														
Benzene	0.005	0.0014 U	**0.0023**	0.0011 U	0.0012 U	**0.017**	**0.0016**	0.0015 U	**0.063**	0.0024 U	**0.003**	**0.0027**	0.0086 U	0.34 U
Toluene	10	**0.0016**	**0.0027**	0.0011 U	**0.0006 J**	**0.0011 J**	**0.0013 J**	0.0015 U	**0.011**	0.0035 U	**0.0013**	**0.0028**	**0.03**	0.34 U
Ethylbenzene	3.9	0.0014 U	**0.0006 J**	0.0011 U	0.0012 U	0.0012 U	0.0013 U	0.0015 U	**0.0075**	0.0024 U	**0.0018**	0.0012 U	**0.01**	0.34 U
m,p-Xylene	--	0.0014 U	**0.0016**	0.0011 U	0.0012 U	0.0012 U	0.0013 U	0.0015 U	**0.029**	0.0024 U	**0.003**	**0.0011 J**	**0.03**	0.34 U
o-Xylene	0.95	0.0014 U	**0.0008 J**	0.0011 U	0.0012 U	0.0012 U	0.0013 U	0.0015 U	**0.0054**	0.0024 U	**0.0005 J**	0.0012 U	**0.032**	0.34 U
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)														
Antimony	--	--	--	6 UJ	6 UJ	10 UJ	6 UJ	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	--	--
Arsenic	7	--	--	6 U	6 U	10 U	6 U	**18**	**7**	**9**	6 U	**11**	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	**0.2**	**0.1**	0.3 U	**0.1**	**0.2**	0.1 U	0.1 U	0.1 U	**0.2**	--	--
Cadmium	1	--	--	**0.7**	0.3 U	**11.7**	**0.3**	**0.4**	**0.3**	**0.7**	**0.5**	**0.3**	--	--
Chromium	260	--	--	**35.9**	**37.8**	**22**	**27.4**	**22.7**	**21.1**	**29.8**	**15.8**	**34.1**	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	**40.9**	**34.5**	**30.3**	**27.2 J**	**50.1 J**	**35.3 J**	**89.4 J**	**41.4 J**	**33 J**	--	--
Lead	81	--	--	**30**	**22**	**452**	**23**	**33**	**69**	**145**	**511**	**25**	--	--
Mercury	0.1	--	--	**0.16**	**0.08**	**0.2**	**0.17**	**0.12**	**0.09**	**0.38**	**0.33**	**0.04**	--	--
Nickel	48	--	--	**40**	**23**	**17**	**30**	**26**	**18**	**33**	**15**	**28**	--	--
Selenium	1	--	--	6 U	6 U	10 U	6 U	6 U	6 U	7 U	6 U	6 U	--	--
Silver	0.02	--	--	0.3 U	0.4 U	0.9 U	0.3 U	0.4 U	0.4 U	0.4 U	0.4 U	0.3 U	--	--
Thallium	--	--	--	6 U	6 U	10 U	6 U	6 U	6 U	7 U	6 U	6 U	--	--
Zinc	85	--	--	**84**	**48**	**5050**	**73 J**	**100 J**	**156 J**	**202 J**	**180 J**	**106 J**	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Screening Level	CW-TP-03	CW-TP-04	CW-TP-04	CW-TP-05	CW-TP-06	CW-TP-07	CW-TP-08	CW-TP-09	CW-TP-09	CBA-SB-1	CBA-SB-1	CBA-SB-2	CBA-SB-2	CBA-SB-2
Area		Chevron Interim Action Test Pits									CBA-SB-1		CBA-SB-2		
Sample ID		CW-TP-03-7-8	CW-TP-54-8-9	CW-TP-04-8-9	CW-TP-05-7-8	CW-TP-06-5.5-6.5	CW-TP-07-9-10	CW-TP-08-7-8	CW-TP-09-10-11	CW-TP-09-6.3-7.3	CBA-SB-1-1.5-2.5-0512	CBA-SB-1-3-5-0512	CBA-SB-2-0.5-2.5-0512	CBA-SB-20-0.5-2.5-0512	CBA-SB-2-3-5-0512
Sample Date		07/06/2012	07/02/2012	07/02/2012	07/06/2012	07/02/2012	07/02/2012	07/02/2012	07/02/2012	07/02/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012
Sample Depth		7-8 ft	7-8 ft	8-9 ft	5.5-6.5 ft	9-10 ft	7-8 ft	10-11 ft	6.3-7.3 ft	8-9 ft	1.5-2.5 ft	3-5 ft	0.5-2.5 ft	0.5-2.5 ft	3-5 ft
Sample Type		N	FD	N	N	N	N	N	N	N	N	N	N	FD	N
X		1240878.3161	1240888.3800	1240888.3800	1240899.5726	1240921.1352	1240939.0200	1240977.2440	1241026.3000	1241026.3000	1241002.928	1241002.928	1240985.787	1240985.787	1240985.787
Y		642938.9793	642910.4892	642910.4892	642928.6332	642859.2571	642888.4348	642882.5867	642884.3184	642884.3184	642847.3949	642847.3949	642842.3926	642842.3926	642842.3926
Total Petroleum Hydrocarbons (mg/kg)															
Gasoline range hydrocarbons	30	750	900	26	980	6.1 U	380	23	330	1,800	1,200	7.4 U	670 J	540 J	19
Diesel range hydrocarbons (silica gel treated)	2,000	4,100	580	530	4,200	6.1 U	840	140	14,000	27,000	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	450	82	70	490	12 U	140	85	1,700	3,200	--	--	--	--	--
Diesel range hydrocarbons	2,000	5,300	760	670	5,000	6.1 U	1,200	230	18,000	34,000	7,400	48	6,600	5,500	26
Motor oil range hydrocarbons	2,000	840	140	120	800	12 U	240	210	2,900	5,200	1,800 NJ	21 NJ	1,800 NJ	1,400 NJ	12 NJ
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)															
Benzene	0.005	0.41 U	0.0019	0.011	0.3 U	0.0009 U	0.0007 U	0.0011	0.0006 U	0.0006 U	--	--	--	--	--
Toluene	10	0.41 U	0.0011 U	0.0013 U	0.3 U	0.0009 U	0.0007 U	0.0017	0.0006 U	0.0006 U	--	--	--	--	--
Ethylbenzene	3.9	0.41 U	0.0011 U	0.0013 U	0.3 U	0.0009 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U	--	--	--	--	--
m,p-Xylene	--	0.41 U	0.0011 U	0.0013 U	0.3 U	0.0009 U	0.0007 U	0.0014	0.0006 U	0.0006 U	--	--	--	--	--
o-Xylene	0.95	0.41 U	0.0011 U	0.0013 U	0.3 U	0.0009 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)															
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Area	CBA-SB-3	CBA-SB-4		CBA-SB-5			CBA-SB-6	CBA-SB-7	CBA-SB-8			CBA-TP-7
	Location ID	CBA-SB-3	CBA-SB-4	CBA-SB-4	CBA-SB-5	CBA-SB-5	CBA-SB-5	CBA-SB-6	CBA-SB-7	CBA-SB-8	CBA-SB-8	CBA-SB-8	CBA-TP-7
	Sample ID	CBA-SB-3-1-3-0512	CBA-SB-4-0.5-2.5-0512	CBA-SB-4-3-5-0512	CBA-SB-5-0-2-0512	CBA-SB-5-3.5-0512	CBA-SB-50-3-5-0512	CBA-SB-6-3-5-0512	CBA-SB-7-1-3-0512	CBA-SB-8-1-3-0512	CBA-SB-8-3-5-0512	CBA-SB-80-3-5-0512	CBA-TP-7-0-1-0512
	Sample Date	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	05/07/2012
	Sample Depth	1-3 ft	0.5-2.5 ft	3-5 ft	0-2 ft	3.5 ft	3-5 ft	3-5 ft	1-3 ft	1-3 ft	3-5 ft	3-5 ft	0-1 ft
	Sample Type	N	N	N	N	N	FD	N	N	N	N	FD	N
	X	1241018.897	1241005.636	1241005.636	1240997.614	1240997.614	1240997.614	1240983.178	1241008.274	1240994.305	1240994.305	1240994.305	1240988.354
	Y	642841.1911	642835.6967	642835.6967	642835.2827	642835.2827	642835.2827	642829.2401	642818.8313	642814.1089	642814.1089	642814.1089	642823.3792
Analyte	Screening Level												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	**18**	**22**	6.9 U	6.4 U	**12**	6.2 U	6.8 U	**11**	**28**	**63**	**43**	6.3 U
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	**200**	**220**	**82**	**16**	**10**	**9.8**	**7.4**	**260**	**570**	**650**	**560**	**18**
Motor oil range hydrocarbons	2,000	**420**	**520**	**130**	**16**	12 U	12 U	12 U	**500**	**1,100**	**1,200**	**960**	**27**
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	**0.022**	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	**0.068**	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	**0.021**	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	**0.06**	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	**0.025**	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	**0.16**	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	**0.25**	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	0.06 U	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	0.06 U	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	0.06 U	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	**0.07**	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	**0.065**	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	0.06 U	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	**0.11**	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	0.06 U	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	**0.66**	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	**0.068**	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	0.06 U	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	**0.28**	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	**0.25**	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	**0.38**	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	**0.11**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	**0.0791**	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	**CWMW-18**		**CWSB-13**			**CWSB-14**			**CWSB-15**		
	Location ID	**CWMW-18**	**CWMW-18**	**CWSB-13**	**CWSB-13**	**CWSB-13**	**CWSB-14**	**CWSB-14**	**CWSB-14**	**CWSB-15**	**CWSB-15**	**CWSB-15**
	Sample ID	**CWMW-18-7-9-0512**	**CWMW-18-13-15-0512**	**CWSB-13-14.0-14.5-0512**	**CWSB-13-21-22-0512**	**CWSB-13-25-27-0512**	**CWSB-14-12-14-0512**	**CWSB-14-25-27-0512**	**CWSB-14-29-30-0512**	**CWSB-15-11-13-0512**	**CWSB-15-18-20-0512**	**CWSB-15-23-25-0512**
	Sample Date	**05/08/2012**	**05/08/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**	**05/07/2012**
	Sample Depth	**7-9 ft**	**13-15 ft**	**14-14.5 ft**	**21-22 ft**	**25-27 ft**	**12-14 ft**	**25-27 ft**	**39-30 ft**	**11-13 ft**	**18-20 ft**	**23-25 ft**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
	X	**1241090.1240**	**1241090.1240**	**1240933.02**	**1240933.02**	**1240933.02**	**1240961.493**	**1240961.493**	**1240961.493**	**1240985.983**	**1240985.983**	**1240985.983**
	Y	**642925.4030**	**642925.4030**	**642870.6497**	**642870.6497**	**642870.6497**	**642894.7931**	**642894.7931**	**642894.7931**	**642907.1316**	**642907.1316**	**642907.1316**
Analyte	**Screening Level**											
Total Petroleum Hydrocarbons (mg/kg)												
Gasoline range hydrocarbons	30	**630**	7.1 U	6.2 U	6.5 U	6.8 U	**370**	9.2 U	8.1 U	**17**	6.4 U	7.1 U
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	**1,300**	**7.4**	5.9 U	**6.5**	6.3 U	**850**	6.3 U	6.3 U	**40**	**6.4**	6.4 U
Motor oil range hydrocarbons	2,000	**660**	12 U	12 U	13 U	13 U	**320**	12 U	13 U	**15**	12 U	13 U
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)												
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)												
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Depth / Sample Type / X / Y / Screening Level	CWSB-16			CWSB-17				CWMW-1		CWMW-2		
	Location ID	CWSB-16	CWSB-16	CWSB-16	CWSB-17	CWSB-17	CWSB-17	CWSB-17	CWMW-1	CWMW-1	CWMW-2	CWMW-2	CWMW-2
	Sample ID	CWSB-16-13-15-0512	CWSB-16-18-20-0512	CWSB-16-8-10-0512	CWSB-170-23-25-0512	CWSB-17-23-25-0512	CWSB-17-28-30-0512	CWSB-17-6-8-0512	CWMW-1-6-7	CWMW-1-11-12	CWMW-2-7-8	CWMW-2-9-10	CWMW-2-15-16
	Sample Date	05/07/2012	05/07/2012	05/07/2012	05/08/2012	05/08/2012	05/08/2012	05/08/2012	08/14/2007	08/14/2007	08/14/2007	08/14/2007	08/14/2007
	Sample Depth	13-15 ft	18-20 ft	8-10 ft	23-25 ft	23-25 ft	28-30 ft	6-8 ft	6-7 ft	11-12 ft	7-8 ft	9-10 ft	15-16 ft
	Sample Type	N	N	N	FD	N	N	N	N	N	N	N	N
	X	1241008.936	1241008.936	1241008.936	1241033.59	1241033.59	1241033.59	1241033.59	1240997.647	1240997.647	1241060.1630	1241060.1630	1241060.1630
	Y	642896.5198	642896.5198	642896.5198	642890.5847	642890.5847	642890.5847	642890.5847	643276.4285	643276.4285	642971.0400	642971.0400	642971.0400
Analyte	Screening Level												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	7.6 U	7 U	**4,200**	7.1 U	7.6 U	6.9 U	**3,700**	**67**	**9.8**	**2,900**	**16,000**	**16**
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	**22**	**9.1**	**3,800**	6.3 U	6.2 U	6.2 U	**21,000**	**4,000**	6 U	**6,200**	**1,900**	**6.4**
Motor oil range hydrocarbons	2,000	13 U	12 U	**650**	12 U	12 U	12 U	**4,100**	260 U	12 U	**2,900**	**290**	12 U
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	0.077 U	0.001 U	0.067 U	0.058 U	0.079 U
Toluene	10	--	--	--	--	--	--	--	0.077 U	0.001 U	0.067 U	0.058 U	0.079 U
Ethylbenzene	3.9	--	--	--	--	--	--	--	0.077 U	0.001 U	0.067 U	0.058 U	0.079 U
m,p-Xylene	--	--	--	--	--	--	--	--	0.077 U	0.001 U	0.067 U	0.058 U	0.079 U
o-Xylene	0.95	--	--	--	--	--	--	--	0.077 U	0.001 U	0.067 U	0.058 U	0.079 U
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	0.15 U	0.002 U	0.13 U	0.12 U	0.16 U
Naphthalene	0.8	--	--	--	--	--	--	--	0.38 U	0.0051 U	0.33 U	0.29 U	0.4 U
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	6 U	6 U	5 U	6 U	6 U
Barium	16,000	--	--	--	--	--	--	--	**20.6**	**17.2**	**15**	**19.8**	**23.5**
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	**20.3**	**14.5**	**12.8**	**13.9**	**21.4**
Chromium VI	48	--	--	--	--	--	--	--	0.149 U	0.147 U	0.139 U	0.147 U	0.148 U
Copper	36	--	--	--	--	--	--	--	**8.6**	**5.7**	**6.1**	**6.4**	**8.5**
Lead	81	--	--	--	--	--	--	--	2 U	2 U	2 U	2 U	2 U
Mercury	0.1	--	--	--	--	--	--	--	**0.04**	0.04 U	0.04 U	0.04 U	0.05 U
Nickel	48	--	--	--	--	--	--	--	**15**	**12**	**10**	**17**	**16**
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	**20**	**16**	**17**	**21**	**26**
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	**3.2**	0.066 U	0.42 U	**2.3**	0.06 U
2-Methylnaphthalene	320	--	--	--	--	--	--	--	**3.3**	0.066 U	0.42 U	**3**	0.06 U
Acenaphthene	0.13	--	--	--	--	--	--	--	**0.26**	0.066 U	0.42 U	0.074 U	0.06 U
Acenaphthylene	--	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Anthracene	1.7	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Chrysene	0.062	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Fluorene	0.18	--	--	--	--	--	--	--	**0.83**	0.066 U	**1.9**	**0.28**	0.06 U
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Naphthalene	0.8	--	--	--	--	--	--	--	**0.72**	0.066 U	0.42 U	**0.6**	0.06 U
Phenanthrene	--	--	--	--	--	--	--	--	**0.3**	0.066 U	0.42 U	**0.36**	0.06 U
Pyrene	8	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	0.08 U	0.066 U	0.42 U	0.074 U	0.06 U

Table 6-4
C Street Properties Soil Results

	Area	CWMW-2		CWSB-1		CWSB-2	CWSB-3		CWSB-4	CWSB-5			CWSB-6	
	Location ID	CWMW-2	CWMW-2	CWSB-1	CWSB-1	CWSB-2	CWSB-3	CWSB-3	CWSB-4	CWSB-5	CWSB-5	CWSB-5	CWSB-6	CWSB-6
	Sample ID	CWMW-2-35.5-36	CWMW-2-36-36.5	CWSB-1-0-1	CWSB-1-5-6	CWSB-2-0-1	CWSB-3-0-1	CWSB-3-5-6	CWSB-4-0-1	CWSB-5-6.5-7	CWSB-5-9-10	CWSB-5-15-16	CWSB-6-6-7	CWSB-6-12-13
	Sample Date	08/21/2007	08/21/2007	08/13/2007	08/13/2007	08/13/2007	08/13/2007	08/13/2007	08/13/2007	08/14/2007	08/14/2007	08/14/2007	08/14/2007	08/14/2007
	Sample Depth	35.5-36 ft	36-36.5 ft	0-1 ft	5-6 ft	0-1 ft	0-1 ft	5-6 ft	0-1 ft	6.5-7 ft	9-10 ft	15-16 ft	6-7 ft	12-13 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241060.1630	1241060.1630	1241459.361	1241459.361	1241459.363	1241428.554	1241428.554	1241387.221	1240848.118	1240848.118	1240848.118	1240916.724	1240916.724
	Y	642971.0400	642971.0400	643340.0524	643340.0524	643340.0497	643374.2406	643374.2406	643277.0567	643077.4807	643077.4807	643077.4807	643166.3811	643166.3811
Analyte	Screening Level													
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	**58**	**1,000**	**15**	**9.2**	7.2 U
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	**17**	**20**	**53**	5.2 U	5.5 U	**37**	**3,200**	**3,400**	**10**	5.8 U	6.3 U
Motor oil range hydrocarbons	2,000	--	--	**70**	**140**	**230**	**14**	11 U	**42**	**2,900**	**2,600**	**15**	12 U	13 U
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)														
Benzene	0.005	--	--	--	--	--	--	--	--	0.058 U	0.054 U	0.0012 U	0.0012 U	0.0012 U
Toluene	10	--	--	--	--	--	--	--	--	0.058 U	0.054 U	0.0012 U	0.0012 U	0.0012 U
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	0.058 U	0.054 U	0.0012 U	0.0012 U	0.0012 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	0.058 U	0.054 U	0.0012 U	0.0012 U	0.0012 U
o-Xylene	0.95	--	--	--	--	--	--	--	--	0.058 U	0.054 U	0.0012 U	0.0012 U	0.0012 U
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	0.12 U	0.11 U	0.0024 U	0.0024 U	0.0024 U
Naphthalene	0.8	--	--	--	--	--	--	--	--	0.29 U	0.27 U	0.006 U	0.0059 U	0.0061 U
Metals (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	10 U	30 U	**25**	**5**	5 U	**7**	**13**	**33**	6 U	6 U	6 U
Barium	16,000	--	--	**94.5**	**153**	**53.7**	**36.6**	**18.6**	**42.8**	**273**	**18**	**28**	**17.4**	**22.2**
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	**26**	**78**	**24.3**	**14.5**	**13.1**	**24.7**	**20.3**	**17.4**	**24.4**	**15.6**	**19.5**
Chromium VI	48	--	--	0.132 U	0.161 U	0.129 U	0.126 U	0.138 U	0.129 U	0.144 U	0.151 U	0.154 U	0.145 U	0.164 U
Copper	36	--	--	**46.6**	**89**	**39.8**	**13.8**	**6**	**32.2**	**96.7**	**7.3**	**11.6**	**5**	**6.9**
Lead	81	--	--	**35**	**190**	**63**	**17**	2 U	**8**	**242**	2 U	**3**	2 U	2 U
Mercury	0.1	--	--	0.05 U	**0.23**	0.05 U	0.04 U	0.04 U	0.04 U	**0.92**	0.06 U	**0.06**	0.05 U	0.05 U
Nickel	48	--	--	**28**	**41**	**25**	**13**	**9**	**18**	**13**	**14**	**20**	**8**	**14**
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	**92**	**150**	**110**	**31**	**16**	**49**	**233**	**20**	**32**	**15**	**19**
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	--	--	**0.021**	**0.01**	**0.042**	0.0047 U	0.0046 U	**0.011**	**8.9**	**0.34**	0.061 U	0.064 U	0.063 U
2-Methylnaphthalene	320	--	--	**0.024**	**0.013**	**0.072**	0.0047 U	0.0046 U	**0.016**	0.33 U	0.3 U	0.061 U	0.064 U	0.063 U
Acenaphthene	0.13	--	--	0.0048 U	0.0047 U	**0.0058**	0.0047 U	0.0046 U	0.0048 U	**0.78**	**0.51**	0.061 U	0.064 U	0.063 U
Acenaphthylene	--	--	--	**0.012**	**0.014**	**0.082**	0.0047 U	0.0046 U	0.0048 U	0.33 U	0.3 U	0.061 U	0.064 U	0.063 U
Anthracene	1.7	--	--	**0.012**	**0.0098**	**0.079**	0.0047 U	0.0046 U	**0.0048**	**0.54**	**0.32**	0.061 U	0.064 U	0.063 U
Benzo(a)anthracene	0.056	--	--	**0.066**	**0.064**	**0.49**	0.0047 U	0.0046 U	**0.036**	**0.68**	**0.45**	0.061 U	0.064 U	0.063 U
Benzo(a)pyrene	0.14	--	--	**0.12**	**0.079**	**1**	**0.0047**	0.0046 U	**0.037**	**0.6**	0.3 U	0.061 U	0.064 U	0.063 U
Benzo(b)fluoranthene	0.19	--	--	**0.16**	**0.12**	**1.5**	**0.0099**	0.0046 U	**0.062**	**0.46**	0.3 U	0.061 U	0.064 U	0.063 U
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	**0.16**	**0.039**	**0.48**	**0.009**	0.0046 U	**0.035**	0.33 U	0.3 U	0.061 U	0.064 U	0.063 U
Benzo(k)fluoranthene	0.19	--	--	**0.048**	**0.044**	**0.5**	0.0047 U	0.0046 U	**0.029**	**0.43**	0.3 U	0.061 U	0.064 U	0.063 U
Chrysene	0.062	--	--	**0.091**	**0.078**	**0.63**	**0.0085**	0.0046 U	**0.054**	**1.3**	**0.97**	0.061 U	0.064 U	0.063 U
Dibenzo(a,h)anthracene	0.14	--	--	**0.021**	**0.0094**	**0.08**	0.0047 U	0.0046 U	**0.0092**	0.33 U	0.3 U	0.061 U	0.064 U	0.063 U
Dibenzofuran	80	--	--	**0.0078**	0.0047 U	**0.023**	0.0047 U	0.0046 U	**0.0053**	--	--	--	--	--
Fluoranthene	1.3	--	--	**0.11**	**0.14**	**0.87**	**0.01**	0.0046 U	**0.074**	**0.53**	0.3 U	0.061 U	0.064 U	0.063 U
Fluorene	0.18	--	--	0.0048 U	0.0047 U	**0.0087**	0.0047 U	0.0046 U	0.0048 U	**2.7**	**1.8**	0.061 U	0.064 U	0.063 U
Indeno(1,2,3-c,d)pyrene	0.55	--	--	**0.12**	**0.03**	**0.46**	**0.0052**	0.0046 U	**0.03**	0.33 U	0.3 U	0.061 U	0.064 U	0.063 U
Naphthalene	0.8	--	--	**0.025**	**0.012**	**0.18**	0.0047 U	0.0046 U	**0.0058**	**0.65**	0.3 U	0.061 U	0.064 U	0.063 U
Phenanthrene	--	--	--	**0.073**	**0.047**	**0.41**	**0.0076**	0.0046 U	**0.038**	**0.7**	0.3 U	0.061 U	0.064 U	0.063 U
Pyrene	8	--	--	**0.11**	**0.1**	**1.1**	**0.01**	0.0046 U	**0.07**	**1.2**	**0.92**	0.061 U	0.064 U	0.063 U
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	**0.16241**	**0.1065**	**1.3093**	**0.007**	0.0046 U	**0.0542**	**0.803**	**0.2647**	0.061 U	0.064 U	0.063 U

Table 6-4
C Street Properties Soil Results

Analyte	Screening Level	CWSB-7			CWSB-8		CWSB-9		CWSB-10		CWSB-11		CWSB-12	
	Location ID	CWSB-7	CWSB-7	CWSB-7	CWSB-8	CWSB-8	CWSB-9	CWSB-9	CWSB-10	CWSB-10	CWSB-11	CWSB-11	CWSB-12	CWSB-12
	Sample ID	CWSB-7-7-8	CWSB-7-10.5-11	CWSB-7-15-16	CWSB-8-12-13	CWSB-8-18-19	CWSB-9-8-12	CWSB-9-15-16	CWSB-10-7-8	CWSB-10-15-16	CWSB-11-7-8	CWSB-11-13-14	CWSB-12-7-8	CWSB-12-13-14
	Sample Date	08/13/2007	08/13/2007	08/13/2007	08/14/2007	08/14/2007	08/13/2007	08/13/2007	08/13/2007	08/13/2007	08/14/2007	08/14/2007	08/14/2007	08/14/2007
	Sample Depth	7-8 ft	10.5-11 ft	15-16 ft	12-13 ft	18-19 ft	8-12 ft	15-16 ft	7-8 ft	15-16 ft	7-8 ft	13-14 ft	7-8 ft	13-14 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241009.472	1241009.472	1241009.472	1240970.609	1240970.609	1240991.365	1240991.365	1241065.273	1241065.273	1241164.998	1241164.998	1241242.191	1241242.191
	Y	643067.1704	643067.1704	643067.1704	642954.9996	642954.9996	642896.5821	642896.5821	642904.4459	642904.4459	643191.1537	643191.1537	643210.8804	643210.8804
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	**170**	**180**	**13**	**760**	5.9 U	**120**	5.3 U	**2,400**	**11**	**5,100**	**12**	**2,800**	**10**
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	**380**	**190**	6.2 U	**430**	**5.9**	**180**	6 U	**12,000**	6 U	**770**	6 U	**440**	6 U
Motor oil range hydrocarbons	2,000	**300**	**240**	12 U	**160**	12 U	**69**	12 U	**3,500**	12 U	66 U	12 U	**26**	12 U
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)														
Benzene	0.005	0.05 U	**0.005**	0.065 U	0.054 U	0.001 U	0.0011 U	0.001 U	0.052 U	0.0009 U	0.065 U	0.061 U	0.056 U	0.001 U
Toluene	10	0.05 U	**0.014**	0.065 U	0.054 U	0.001 U	0.0011 U	0.001 U	0.052 U	0.0009 U	**0.13**	0.061 U	0.056 U	0.001 U
Ethylbenzene	3.9	0.05 U	0.0013 U	0.065 U	0.054 U	0.001 U	0.0011 U	0.001 U	0.052 U	0.0009 U	**4.2**	**1.4**	0.056 U	0.001 U
m,p-Xylene	--	0.05 U	**0.012**	0.065 U	0.054 U	0.001 U	0.0011 U	0.001 U	**0.12**	0.0009 U	**0.35**	**0.13**	**0.084**	0.001 U
o-Xylene	0.95	0.05 U	**0.0041**	0.065 U	0.054 U	0.001 U	0.0011 U	0.001 U	0.052 U	0.0009 U	0.065 U	0.061 U	0.056 U	0.001 U
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	0.099 U	0.0026 U	**0.17**	**0.22**	0.002 U	0.0022 U	0.002 U	0.1 U	0.0018 U	0.13 U	**0.44**	**0.4**	0.0021 U
Naphthalene	0.8	0.25 U	0.0064 U	0.32 U	0.27 U	0.005 U	0.0056 U	0.005 U	0.26 U	0.0045 U	**3.1**	**1.1**	**0.91**	0.0052 U
Metals (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	**6**	**9**	6 U	**6**	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Barium	16,000	**52.7**	**28**	**24.1**	**36**	**19.4**	**24.7**	**24.6**	**23.7**	**20**	**24.8**	**20.8**	**15.9**	**15.7**
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	**18.4**	**23**	**21.6**	**18.3**	**19.1**	**14.7**	**18.9**	**13.9**	**13.5**	**16.1**	**22.2**	**14.6**	**15.4**
Chromium VI	48	0.135 U	0.155 U	0.152 U	0.143 U	0.141 U	0.145 U	0.149 U	0.138 U	0.146 U	0.156 U	0.148 U	0.143 U	0.145 U
Copper	36	**13.1**	**28.6**	**8.2**	**7.9**	**8**	**7.6**	**11.1**	**5.4**	**7.4**	**9.8**	**7.9**	**5.6**	**7.5**
Lead	81	**52**	**94**	2 U	**5**	2 U	**6**	2 U	2 U	2 U	**12**	2 U	**7**	2 U
Mercury	0.1	**0.14**	**0.15**	0.05 U	0.05 U	0.05 U	0.06 U	0.05 U	0.04 U	0.04 U	0.06 U	0.06 U	0.04 U	0.04 U
Nickel	48	**39**	**54**	**16**	**18**	**16**	**15**	**18**	**9**	**13**	**16**	**18**	**9**	**13**
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	**65**	**97**	**25**	**26**	**23**	**33**	**21**	**22**	**22**	**21**	**22**	**16**	**20**
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	**0.063**	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	**1.1**	0.06 U	**7.6**	0.066 U	**6.9**	0.06 U
2-Methylnaphthalene	320	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	**18**	0.066 U	**13**	0.06 U
Acenaphthene	0.13	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	**0.76**	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Acenaphthylene	--	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Anthracene	1.7	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Benzo(a)anthracene	0.056	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Benzo(a)pyrene	0.14	**0.081**	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Benzo(b)fluoranthene	0.19	**0.066**	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Benzo(k)fluoranthene	0.19	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Chrysene	0.062	**0.064**	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Dibenzo(a,h)anthracene	0.14	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Fluorene	0.18	**0.19**	0.19 U	0.062 U	**0.14**	0.064 U	0.064 U	0.066 U	**2.6**	0.06 U	**0.24**	0.066 U	**0.2**	0.06 U
Indeno(1,2,3-c,d)pyrene	0.55	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Naphthalene	0.8	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	**12**	0.066 U	**4**	0.06 U
Phenanthrene	--	0.061 U	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	**0.18**	0.066 U	**0.3**	0.06 U
Pyrene	8	**0.088**	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	**0.10044**	0.19 U	0.062 U	0.063 U	0.064 U	0.064 U	0.066 U	0.58 U	0.06 U	0.066 U	0.066 U	0.064 U	0.06 U

Table 6-4
C Street Properties Soil Results

Analyte	Area	MW-1A(C)					MW-2A(C)				
	Location ID	MW-1A(C)	MW-1A(C)	MW-1A(C)	MW-1A(C)	MW-1A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)
	Sample ID	MW-1A_0195_2.5-4	MW-1A_2.5-4_0195	MW-1A_7.5-9_0195	MW-1A_10-11.5_0195	MW-1A_20-21.5_0195	MW-2A_0195_2.5-4	MW-2A_2.5-4_0195	MW-2A_5-6.5_0195	MW-2A_10-11.5_0195	MW-2A_17.5-19_0195
	Sample Date	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995
	Sample Depth	2.5-4 ft	2.5-4 ft	7.5-9 ft	10-11.5 ft	20-21.5 ft	2.5-4 ft	2.5-4 ft	5-6.5 ft	10-11.5 ft	17.5-19 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N
	X	1240827.992	1240827.992	1240827.992	1240827.992	1240827.992	1240821.787	1240821.787	1240821.787	1240821.787	1240821.787
	Y	643220.6366	643220.6366	643220.6366	643220.6366	643220.6366	643068.1415	643068.1415	643068.1415	643068.1415	643068.1415
Analyte	**Screening Level**										
Total Petroleum Hydrocarbons (mg/kg)											
Gasoline range hydrocarbons	30	--	**27**	**2.8**	1 U	1 U	--	**470**	**18**	1 U	1 U
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	**62**	**13**	**11**	10 U	--	**2,800**	**54**	**17**	**10**
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	**160**	**27**	25 U	25 U	--	**1,100**	**120**	**48**	**40**
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)											
Benzene	0.005	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.4 U	0.05 U	0.05 U	0.05 U
Toluene	10	--	0.05 U	0.05 U	0.05 U	0.05 U	--	**0.58**	0.05 U	0.05 U	0.05 U
Ethylbenzene	3.9	--	0.05 U	**0.1**	0.05 U	0.05 U	--	0.4 U	0.05 U	0.05 U	0.05 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	0.1 U	**0.37**	**0.1**	0.1 U	--	0.8 U	0.1 U	0.1 U	0.1 U
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)											
Antimony	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)											
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	0.15 U	--	--	--	--	0.15 U	--	--	--	--
Acenaphthylene	--	0.15 U	--	--	--	--	0.15 U	--	--	--	--
Anthracene	1.7	0.15 U	--	--	--	--	0.15 U	--	--	--	--
Benzo(a)anthracene	0.056	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Benzo(a)pyrene	0.14	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Benzo(b)fluoranthene	0.19	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Benzo(k)fluoranthene	0.19	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Chrysene	0.062	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Dibenzo(a,h)anthracene	0.14	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Fluorene	0.18	0.15 U	--	--	--	--	0.15 U	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	0.1 U	--	--	--	--	0.01 U	--	--	--	--
Naphthalene	0.8	0.15 U	--	--	--	--	0.15 U	--	--	--	--
Phenanthrene	--	0.15 U	--	--	--	--	0.15 U	--	--	--	--
Pyrene	8	0.1 U	--	--	--	--	1 U	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	0.1 U	--	--	--	--	0.01 U	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Screening Level	MW-3A(C)					MW-4A(C)				
Location ID		MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)
Sample ID		MW-3A_0195_2.5-4	MW-3A_2.5-4_0195	MW-3A_7.5-9_0195	MW-3A_10-11.5_0195	MW-3A_20-21.5_0195	MW-4A _2.5-4_0195	MW-4A_0195_2.5-4	MW-4A _5-6.5_0195	MW-4A _10-11.5_019	MW-4A _20-21.5_019
Sample Date		01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995	01/31/1995
Sample Depth		2.5-4 ft	2.5-4 ft	7.5-9 ft	10-11.5 ft	20-21.5 ft	2.5-4 ft	2.5-4 ft	5-6.5 ft	10-11.5 ft	20-21.5 ft
Sample Type		N	N	N	N	N	N	N	N	N	N
X		1240943.423	1240943.423	1240943.423	1240943.423	1240943.423	1240887.791	1240887.791	1240887.791	1240887.791	1240887.791
Y		643199.7475	643199.7475	643199.7475	643199.7475	643199.7475	642874.7662	642874.7662	642874.7662	642874.7662	642874.7662
Total Petroleum Hydrocarbons (mg/kg)											
Gasoline range hydrocarbons	30	--	**20**	1 U	1 U	**1.7**	**1.9**	--	1 U	1 U	**3.9**
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	**160**	**15**	**72**	**91**	**1,200**	--	**520**	**50**	**210**
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	**240**	**57**	**190**	**150**	**4,000**	--	**1,900**	**180**	**280**
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)											
Benzene	0.005	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Toluene	10	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Ethylbenzene	3.9	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)											
Antimony	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)											
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	0.15 U	--	--	--	--	--	0.15 U	--	--	--
Acenaphthylene	--	0.15 U	--	--	--	--	--	0.15 U	--	--	--
Anthracene	1.7	0.15 U	--	--	--	--	--	0.15 U	--	--	--
Benzo(a)anthracene	0.056	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Benzo(a)pyrene	0.14	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Benzo(b)fluoranthene	0.19	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Benzo(k)fluoranthene	0.19	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Chrysene	0.062	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Dibenzo(a,h)anthracene	0.14	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Fluorene	0.18	0.15 U	--	--	--	--	--	0.15 U	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	0.1 U	--	--	--	--	--	0.01 U	--	--	--
Naphthalene	0.8	0.15 U	--	--	--	--	--	0.15 U	--	--	--
Phenanthrene	--	0.15 U	--	--	--	--	--	0.15 U	--	--	--
Pyrene	8	1 U	--	--	--	--	--	1 U	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	0.1 U	--	--	--	--	--	0.01 U	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Screening Level	MW-5A(C)				MW-6A(C)				MW-7A(C)		
Location ID		MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-6A(C)	MW-6A(C)	MW-6A(C)	MW-6A(C)	MW-7A(C)	MW-7A(C)	MW-7A(C)
Sample ID		MW-5A_0195_2.5-4	MW-5A_2.5-4_0195	MW-5A_10-11.5_0195	MW-5A_20-21.5_0195	MW-6A_0195_2.5-4	MW-6A_2.5-4_0195	MW-6A_7.5-9_0195	MW-6A_20-21.5_0195	MW-7A_0195_5-6.5	MW-7A_5-6.5_0195	MW-7A_14-15.5_0195
Sample Date		01/31/1995	01/31/1995	01/31/1995	01/31/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995
Sample Depth		2.5-4 ft	2.5-4 ft	10-11.5 ft	20-21.5 ft	2.5-4 ft	2.5-4 ft	7.5-9 ft	20-21.5 ft	5-6.5 ft	5-6.5 ft	14-15.5 ft
Sample Type		N	N	N	N	N	N	N	N	N	N	N
X		1241072.034	1241072.034	1241072.034	1241072.034	1240975.743	1240975.743	1240975.743	1240975.743	1240971.071	1240971.071	1240971.071
Y		642897.9998	642897.9998	642897.9998	642897.9998	642910.6585	642910.6585	642910.6585	642910.6585	642865.177	642865.177	642865.177
Total Petroleum Hydrocarbons (mg/kg)												
Gasoline range hydrocarbons	30	--	1 U	**1.5**	1 U	--	1 U	**600**	**250**	--	**550**	**3.5**
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	**180**	**130**	**20**	--	10 U	**8,000**	**4,900**	--	**13,000**	**180**
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	**200**	**150**	**65**	--	25 U	**1,900**	**1,300**	--	**5,600**	**80**
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)												
Benzene	0.005	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.4 U	0.2 U	--	0.4 U	0.05 U
Toluene	10	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.4 U	0.2 U	--	0.4 U	0.05 U
Ethylbenzene	3.9	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.4 U	0.2 U	--	0.4 U	0.05 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	0.1 U	0.1 U	0.1 U	--	0.1 U	0.8 U	0.4 U	--	0.8 U	0.1 U
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)												
Antimony	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)												
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	0.15 U	--	--	--	0.15 U	--	--	--	0.15 U	--	--
Acenaphthylene	--	0.15 U	--	--	--	0.15 U	--	--	--	0.15 U	--	--
Anthracene	1.7	0.15 U	--	--	--	0.15 U	--	--	--	0.15 U	--	--
Benzo(a)anthracene	0.056	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Benzo(a)pyrene	0.14	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Benzo(b)fluoranthene	0.19	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Benzo(k)fluoranthene	0.19	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Chrysene	0.062	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Dibenzo(a,h)anthracene	0.14	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Fluorene	0.18	0.15 U	--	--	--	0.15 U	--	--	--	0.15 U	--	--
Indeno(1,2,3-c,d)pyrene	0.55	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--
Naphthalene	0.8	0.15 U	--	--	--	0.15 U	--	--	--	0.15 U	--	--
Phenanthrene	--	0.15 U	--	--	--	0.15 U	--	--	--	0.15 U	--	--
Pyrene	8	0.02 U	--	--	--	0.02 U	--	--	--	10 U	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	0.01 U	--	--	--	0.01 U	--	--	--	0.01 U	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Area	MW-8(C)			MW-9A(C)					MW-10(C)			
	Location ID	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-10A(C)
	Sample ID	MW-8A_0195_5-6.5	MW-8A_5-6.5_0195	MW-8A_20-21.5_0195	MW-9A_0195_2.5-4	MW-9A_2.5-4_0195	MW-9A_5-6.5_0195	MW-9A_10-11.5_0195	MW-9A_20-21.5_0195	MW-10A_0195_5-6.5	MW-10A_5-6.5_0195	MW-10A_10-11.5_019	MW-10A_20-21.5_019
	Sample Date	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995
	Sample Depth	5-6.5 ft	5-6.5 ft	20-21.5 ft	2.5-4 ft	2.5-4 ft	5-6.5 ft	10-11.5 ft	20-21.5 ft	5-6.5 ft	5-6.5 ft	10-11.5 ft	20-21.5 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241104.227	1241104.227	1241104.227	1241100.605	1241100.605	1241100.605	1241100.605	1241100.605	1240964.079	1240964.079	1240964.079	1240964.079
	Y	642982.0331	642982.0331	642982.0331	643206.9703	643206.9703	643206.9703	643206.9703	643206.9703	643082.584	643082.584	643082.584	643082.584
	Screening Level												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	**2,800**	**1.5**	--	1 U	1 U	1 U	1 U	--	1 U	**4.6**	1 U
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	**5,400**	**13**	--	10 U	10 U	**24**	10 U	--	10 U	**13**	**33**
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	**2,400**	25 U	--	25 U	25 U	**50**	**28**	--	25 U	**42**	**190**
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)													
Benzene	0.005	--	0.1 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Toluene	10	--	0.1 U	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
Ethylbenzene	3.9	--	**4.3**	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.05 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	**15**	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	--	0.1 U	0.1 U	0.1 U
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	0.15 U	--	--	0.15 U	--	--	--	--	0.15 U	--	--	--
Acenaphthylene	--	0.15 U	--	--	0.15 U	--	--	--	--	0.15 U	--	--	--
Anthracene	1.7	0.15 U	--	--	0.15 U	--	--	--	--	0.15 U	--	--	--
Benzo(a)anthracene	0.056	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Benzo(a)pyrene	0.14	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Benzo(b)fluoranthene	0.19	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Benzo(k)fluoranthene	0.19	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Chrysene	0.062	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Dibenzo(a,h)anthracene	0.14	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Fluorene	0.18	**2.3**	--	--	0.15 U	--	--	--	--	0.15 U	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--
Naphthalene	0.8	**11**	--	--	0.15 U	--	--	--	--	0.15 U	--	--	--
Phenanthrene	--	0.15 U	--	--	0.15 U	--	--	--	--	0.15 U	--	--	--
Pyrene	8	10 U	--	--	0.02 U	--	--	--	--	0.02 U	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	0.01 U	--	--	0.01 U	--	--	--	--	0.01 U	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	MW-12A(C)				MW-11(C)			B-2		HA-1			
	Location ID	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	B-2	B-2	HA-1	HA-1	HA-1	HA-1
	Sample ID	MW-12A_0195_5-6.5	MW-12A_5-6.5_0195	MW-12A_10-11.5_019	MW-12A_20-21.5_019	MW-11A_0195_5-6.5	MW-11A_5-6.5_0195	MW-11A_17.5-19_019	B-2-2.0	B-2_0494	HA-1_1.5_0991	HA-1_4_0991	HA-1_7_0991	HA-1_10_0991
	Sample Date	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	02/01/1995	04/21/1994	04/21/1994	09/16/1991	09/16/1991	09/16/1991	09/16/1991
	Sample Depth	5-6.5 ft	5-6.5 ft	10-11.5 ft	20-21.5 ft	5-6.5 ft	5-6.5 ft	17.5-19 ft	0-2 ft	2-15 ft	1.5-1.5 ft	4-4 ft	7-7 ft	10-10 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1240847.173	1240847.173	1240847.173	1240847.173	1240912.478	1240912.478	1240912.478	1241197.576	1241197.576	1241083.827	1241083.827	1241083.827	1241083.827
	Y	642958.9783	642958.9783	642958.9783	642958.9783	643089.7835	643089.7835	643089.7835	643243.3209	643243.3209	643088.068	643088.068	643088.068	643088.068
Analyte	Screening Level													
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	--	1 U	1 U	**1.9**	--	1 U	1 U	--	5 U	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	**56**	10 U	10 U	--	**63**	**13**	--	6.2 U	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	**110**	25 U	25 U	--	**210**	25 U	--	50 U	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	**66**	**19**	**5**	**5,040**
Volatile Organics (mg/kg)														
Benzene	0.005	--	0.05 U	0.05 U	**0.14**	--	0.05 U	0.05 U	0.0012 U	--	--	--	--	--
Toluene	10	--	0.05 U	0.05 U	**0.21**	--	0.05 U	0.05 U	0.0012 U	--	--	--	--	--
Ethylbenzene	3.9	--	0.05 U	0.05 U	0.05 U	--	0.05 U	0.05 U	0.0012 U	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	0.0012 U	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	0.0012 U	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	0.1 U	0.1 U	**0.14**	--	0.1 U	0.1 U	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	6 U	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	**48.8**	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	**28.8**	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	**9**	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	0.05 U	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	6 U	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	**37.5**	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	0.15 U	--	--	--	0.15 U	--	--	--	0.081 U	--	--	--	--
Acenaphthylene	--	0.15 U	--	--	--	0.15 U	--	--	--	0.081 U	--	--	--	--
Anthracene	1.7	0.15 U	--	--	--	0.15 U	--	--	--	0.081 U	--	--	--	--
Benzo(a)anthracene	0.056	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Benzo(a)pyrene	0.14	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Benzo(b)fluoranthene	0.19	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Benzo(k)fluoranthene	0.19	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Chrysene	0.062	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Dibenzo(a,h)anthracene	0.14	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Fluorene	0.18	0.15 U	--	--	--	0.15 U	--	--	--	0.081 U	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--
Naphthalene	0.8	0.15 U	--	--	--	0.15 U	--	--	--	0.081 U	--	--	--	--
Phenanthrene	--	0.15 U	--	--	--	0.15 U	--	--	--	0.081 U	--	--	--	--
Pyrene	8	0.1 U	--	--	--	0.02 U	--	--	--	0.081 U	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	0.1 U	--	--	--	0.01 U	--	--	--	0.081 U	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Screening Level	HA-2				HA-3				HA-4			
	Location ID	HA-2	HA-2	HA-2	HA-2	HA-3	HA-3	HA-3	HA-3	HA-4	HA-4	HA-4	HA-4
	Sample ID	HA-2_1.5_0991	HA-2_4_0991	HA-2_7_0991	HA-2_10_0991	HA-3_1.5_0991	HA-3_4_0991	HA-3_7_0991	HA-3_10_0991	HA-4_1.5_0991	HA-4_4_0991	HA-4_7_0991	HA-4_10_0991
	Sample Date	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/16/1991
	Sample Depth	1.5-1.5 ft	4-4 ft	7-7 ft	10-10 ft	1.5-1.5 ft	4-4 ft	7-7 ft	10-10 ft	1.5-1.5 ft	4-4 ft	7-7 ft	10-10 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241052.238	1241052.238	1241052.238	1241052.238	1241044.38	1241044.38	1241044.38	1241044.38	1241053.611	1241053.611	1241053.611	1241053.611
	Y	643099.2379	643099.2379	643099.2379	643099.2379	643130.0009	643130.0009	643130.0009	643130.0009	643060.3341	643060.3341	643060.3341	643060.3341
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	**95**	**15**	**17**	**45**	**43**	**39**	**39**	**57**	**31**	**98**	**87**	**15**
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	HA-5				TP-23			TP-24		
	Location ID	HA-5	HA-5	HA-5	HA-5	TP-23	TP-23	TP-23	TP-24	TP-24	TP-24
	Sample ID	HA-5_1.5_0991	HA-5_4_0991	HA-5_7_0991	HA-5_10_0991	TP-23_3_0991	TP-23_6_0991	TP-23_8_0991	TP-24_3_0991	TP-24_6_0991	TP-24_8_0991
	Sample Date	09/16/1991	09/16/1991	09/16/1991	09/16/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991
	Sample Depth	1.5-1.5 ft	4-4 ft	7-7 ft	10-10 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N
	X	1241015.543	1241015.543	1241015.543	1241015.543	1241061.917	1241061.917	1241061.917	1241039.14	1241039.14	1241039.14
	Y	643102.5433	643102.5433	643102.5433	643102.5433	643008.1708	643008.1708	643008.1708	642981.9793	642981.9793	642981.9793
Analyte	**Screening Level**										
Total Petroleum Hydrocarbons (mg/kg)											
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	**102**	**256**	**45**	**33**	**104**	**13,900**	**132**	**10,700**	**17,200**	**12,700**
Volatile Organics (mg/kg)											
Benzene	0.005	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)											
Antimony	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)											
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	TP-25			TP-26			TP-27			TP-28		
	Location ID	TP-25	TP-25	TP-25	TP-26	TP-26	TP-26	TP-27	TP-27	TP-27	TP-28	TP-28	TP-28
	Sample ID	TP-25_3_0991	TP-25_6_0991	TP-25_8_0991	TP-26_3_0991	TP-26_6_0991	TP-26_8_0991	TP-27_3_0991	TP-27_6_0991	TP-27_8_0991	TP-28_3_0991	TP-28_6_0991	TP-28_8_0991
	Sample Date	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991
	Sample Depth	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241011.24	1241011.24	1241011.24	1240975.939	1240975.939	1240975.939	1240928.118	1240928.118	1240928.118	1240894.25	1240894.25	1240894.25
	Y	642951.8015	642951.8015	642951.8015	642929.024	642929.024	642929.024	642931.294	642931.294	642931.294	642961.1778	642961.1778	642961.1778
Analyte	**Screening Level**												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	100	5,870	5,060	56	3,010	1230	47	8,040	4,770	108	8,070	369
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	TP-29			TP-30			TP-31			TP-32		
	Location ID	TP-29	TP-29	TP-29	TP-30	TP-30	TP-30	TP-31	TP-31	TP-31	TP-32	TP-32	TP-32
	Sample ID	TP-29_3_0991	TP-29_6_0991	TP-29_8_0991	TP-30_3_0991	TP-30_6_0991	TP-30_8_0991	TP-31_3_0991	TP-31_6_0991	TP-31_8_0991	TP-32_3_0991	TP-32_6_0991	TP-32_8_0991
	Sample Date	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991	09/12/1991
	Sample Depth	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1240893.975	1240893.975	1240893.975	1240928.701	1240928.701	1240928.701	1240993.839	1240993.839	1240993.839	1240965.466	1240965.466	1240965.466
	Y	643020.1012	643020.1012	643020.1012	643053.5221	643053.5221	643053.5221	643111.8688	643111.8688	643111.8688	643087.0912	643087.0912	643087.0912
Analyte	**Screening Level**												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	**93**	**64**	**73**	**58**	**7,020**	**1,690**	**63**	**65**	**55**	**43**	**58**	**322**
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	TP-33			TP-34			TP-35			TP-36		
	Location ID	TP-33	TP-33	TP-33	TP-34	TP-34	TP-34	TP-35	TP-35	TP-35	TP-36	TP-36	TP-36
	Sample ID	TP-33_3_0991	TP-33_6_0991	TP-33_8_0991	TP-34_3_0991	TP-34_6_0991	TP-34_8_0991	TP-35_3_0991	TP-35_6_0991	TP-35_8_0991	TP-36_3_0991	TP-36_6_0991	TP-36_8_0991
	Sample Date	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991
	Sample Depth	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	8-8 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241104.201	1241104.201	1241104.201	1241121.555	1241121.555	1241121.555	1241159.049	1241159.049	1241159.049	1241122.067	1241122.067	1241122.067
	Y	643153.8677	643153.8677	643153.8677	643117.3881	643117.3881	643117.3881	643150.3533	643150.3533	643150.3533	643168.2115	643168.2115	643168.2115
Analyte	**Screening Level**												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	**58**	**65**	**165**	**89**	**7,530**	**147**	**63**	**13,900**	**513**	**96**	**648**	**1,210**
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

	Area	TP-37			TP-38		1991 Surface Soil Sampling					MW-33(C)		MW-34(C)	
	Location ID	TP-37	TP-37	TP-37	TP-38	TP-38	DAS-1	DAS-2	DAS-3	DAS-4	DAS-5	MW-33(C)	MW-33(C)	MW-34(C)	MW-34(C)
	Sample ID	TP-37_3_0991	TP-37_6_0991	TP-37_8_0991	TP-38_3_0991	TP-38_6_0991	DAS-1_1190	DAS-2_1190	DAS-3_1190	DAS-4_1190	DAS-5_1190	MW-33_S-2_0689	MW-33_S-6B_0689	MW-34_S-2_0689	MW-34_S-6_0689
	Sample Date	09/13/1991	09/13/1991	09/13/1991	09/13/1991	09/13/1991	11/26/1990	11/26/1990	11/26/1990	11/26/1990	11/26/1990	06/01/1989	06/01/1989	06/01/1989	06/01/1989
	Sample Depth	3-3 ft	6-6 ft	8-8 ft	3-3 ft	6-6 ft	0-0.1 ft	0-0.1 ft	0-0.1 ft	0-0.1 ft	0-0.1 ft	5-6.5 ft	21-21.5 ft	5-6.5 ft	20-21.5 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1241149.246	1241149.246	1241149.246	1241180.186	1241180.186	1240863.168	1240975.857	1241053.31	1241061.053	1241039.496	1241070.397	1241070.397	1241019.728	1241019.728
	Y	643203.943	643203.943	643203.943	643165.9559	643165.9559	642923.5509	642941.6047	643019.1245	642986.9205	643010.4533	643276.2818	643276.2818	643318.3526	643318.3526
Analyte	Screening Level														
Total Petroleum Hydrocarbons (mg/kg)															
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	1,150	422	889	11,400	7,510	91,000	35,000	130,000	64,000	20,000	57.6	31.6	7.9	30.5
Volatile Organics (mg/kg)															
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)															
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)															
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Area	MW-35(C)				MW-36(C)		MW-37(C)			MW-38(C)		MW-39(C)
	Location ID	MW-35(C)	MW-35(C)	MW-35(C)	MW-35(C)	MW-36(C)	MW-36(C)	MW-37(C)	MW-37(C)	MW-37(C)	MW-38(C)	MW-38(C)	MW-39(C)
	Sample ID	MW-35_S-2_0689	MW-35_S-3_0689	MW-35_S-4_0689	MW-35_S-6_0689	MW-36_S-2_0689	MW-36_S-3_0689	MW-37_S-2_0689	MW-37_S-3_0689	MW-37_S-6_0689	MW-38_S-2_0689	MW-38_S-6A_0689	MW-39_S-6_0689
	Sample Date	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989
	Sample Depth	5-6.5 ft	7.5-9 ft	10-11.5 ft	20-21.5 ft	5-6.5 ft	7.5-9 ft	5-6.5 ft	7.5-9 ft	20-21.5 ft	5-6.5 ft	20-21 ft	20-21.5 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1240771.985	1240771.985	1240771.985	1240771.985	1241038.864	1241038.864	1241014.31	1241014.31	1241014.31	1240704.927	1240704.927	1241050.667
	Y	643047.55	643047.55	643047.55	643047.55	643035.282	643035.282	643265.8163	643265.8163	643265.8163	643105.4209	643105.4209	643297.7424
Analyte	**Screening Level**												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	**67**	**82.5**	**89.6**	**35**	**11,000**	**58**	**515**	**37.3**	**14.7**	**21.5**	**10.2**	**11.3**
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4
C Street Properties Soil Results

Analyte	Area	MW-40(C)		MW-41(C)		MW-42(C)	B-1_Chev	B-2		B-3		B-4	B-5	
	Location ID	MW-40(C)	MW-40(C)	MW-41(C)	MW-41(C)	MW-42(C)	B-1_Chev	B-2	B-2	B-3	B-3	B-4	B-5	B-5
	Sample ID	MW-40_S-6A_0689	MW-40_S-6B_0689	MW-41_S-2_0689	MW-41_S-6_0689	MW-42_S-3_0689	B-1_S-3_0689	B-2_S-2_0689	B-2_S-4_0689	B-3_S-2_0689	B-3_S-3_0689	B-4_S-3_0689	B-5_S-1_0689	B-5_S-2_0689
	Sample Date	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989	06/01/1989
	Sample Depth	20-21 ft	21-21.5 ft	5-6.5 ft	20-21.5 ft	7.5-9 ft	7.5-9 ft	5-6.5 ft	10-11.5 ft	5-6.5 ft	7.5-9 ft	7.5-9 ft	2.5-4 ft	5-6.5 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	X	1240995.805	1240995.805	1240958	1240958	1240913.93	1240958.634	1241197.576	1241197.576	1241032.652	1241032.652	1241079.78	1241039.916	1241039.916
	Y	643079.0486	643079.0486	642953.6913	642953.6913	643000.0648	642879.0697	643243.3209	643243.3209	642906.5342	642906.5342	642914.6775	642959.6437	642959.6437
Analyte	**Screening Level**													
Total Petroleum Hydrocarbons (mg/kg)														
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	**10.2**	**6.8**	**2,150**	**5.7**	**17**	**226**	**175**	**75.7**	**1,740**	**6,560**	**90.5**	**7,460**	**12,000**
Volatile Organics (mg/kg)														
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)														
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)														
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-4

C Street Properties Soil Results

	Area	MW-8(C)	MW-9(B)	MW-10(C)	MW-11(C)	MW-12(C)	MW-13(C)	MW-14(C)	MW-15(C)	MW-16(C)	MW-17(C)	MW-18(C)	MW-19(C)
	Location ID	MW-8(C)	MW-9(B)	MW-10(C)	MW-11(C)	MW-12(C)	MW-13(C)	MW-14(C)	MW-15(C)	MW-16(C)	MW-17(C)	MW-18(C)	MW-19(C)
	Sample ID	MW-8_0287	MW-9_0287	MW-10_0287	MW-11_0287	MW-12_0287	MW-13_0287	MW-14_0287	MW-15_0287	MW-16_0287	MW-17_0287	MW-18_0287	MW-19_0287
	Sample Date	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987	02/01/1987
	Sample Depth	3-3 ft	4-4 ft	4-4 ft	4-4 ft	3.5-3.5 ft	8.5-8.5 ft	8.5-8.5 ft	8.5-8.5 ft	8.5-8.5 ft	3.5-3.5 ft	8-8 ft	6-6 ft
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
	X	1240997.683	1241232.09	1240926.145	1240739.338	1240984.145	1241145.403	1241084.272	1241006.008	1241014.336	1240856.812	1241028.38	1241114.99
	Y	643055.7284	643166.3027	642953.1069	643074.359	643254.52	643181.1705	642951.101	642914.1165	642980.2552	643085.6362	643099.5456	643104.3376
Analyte	Screening Level												
Total Petroleum Hydrocarbons (mg/kg)													
Gasoline range hydrocarbons	30	9 U	**6,500**	9 U	9 U	9 U	9 U	9 U	9 U	9 U	**6,700**	9 U	9 U
Diesel range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (silica gel treated)	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons	2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)													
Benzene	0.005	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	10	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	3.9	--	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	0.95	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	0.034	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)													
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	7	--	--	--	--	--	--	--	--	--	--	--	--
Barium	16,000	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	1	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	48	--	--	--	--	--	--	--	--	--	--	--	--
Copper	36	--	--	--	--	--	--	--	--	--	--	--	--
Lead	81	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	48	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	1	--	--	--	--	--	--	--	--	--	--	--	--
Silver	0.02	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	85	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg)													
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	0.13	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	1.7	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.056	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.19	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.062	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.14	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.3	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	0.18	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.55	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	8	--	--	--	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)	0.14	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	CWF-CW-1		CWF-CW-2		CWMW-18	CWMW-65C	MW-1B							
	Location ID	CWF-CW-1	CWF-CW-1	CWF-CW-2	CWF-CW-2	CWMW-18	CWMW-65C	MW-1B	MW-1B	MW-1(B)	MW-1(B)	MW-1(B)	MW-1(B)	MW-1(B)	MW-1(B)
	Sample ID	CWF-CW-1-07202016	CWF-CW-101-07202016	CWF-CW-2-111416	CWF-CW-2-07202016	CWMW-18-070612	CWMW-65C-070612	MW-1B-10302013	MW-1B-070612	MW-1(B)-0308	MW-1-1007	MW-1-1007FB	MMW-1_1103	MMW-1_092302	MMW-1_92302
	Sample Date	07/20/2016	07/20/2016	11/14/2016	07/20/2016	07/06/2012	07/06/2012	10/30/2013	07/06/2012	03/25/2008	10/02/2007	10/02/2007	11/03/2003	09/23/2002	09/23/2002
	Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level														
Total Petroleum Hydrocarbons (µg/L)															
Gasoline range hydrocarbons	800	**250**	**290**	--	100 U	**360**	30 U	--	**1,300**	**1,900**	**2,500**	--	**3,600**	**4,000**	--
Diesel range hydrocarbons (with silica gel cleanup)	500	**210**	**190**	--	100 U	100 UJ	100 UJ	--	**180 J**	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	200 U	200 U	--	200 U	200 U	200 U	--	200 U	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	**1,400**	**690**	--	**1,200**	250 U	**270**	--	**15,000**	**9,400**	--
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	**220**	**350**	--	200 U	500 U	500 U	--	--	--	--
Oil	500	--	--	--	--	--	--	--	--	--	--	--	5,000 U	**600**	--
Volatile Organics (µg/L)															
Benzene	2.4	**0.05 J**	**0.05 J**	--	0.2 U	0.05 U	0.05 U	--	**200**	**260**	**310**	--	**350**	**260**	--
Toluene	7,300	0.2 U	0.2 U	--	0.2 U	0.05 U	0.05 U	--	**3**	**3.5**	**7.1**	--	**20**	**20**	--
Ethylbenzene	2,100	0.2 U	**0.04 J**	--	0.2 U	**0.55**	0.05 U	--	**2.9**	**8.2**	**7.3**	--	**93**	**84**	--
m,p-Xylene	--	0.4 U	0.4 U	--	0.4 U	**0.2**	0.1 U	--	**2.8**	**4.3**	**4.4**	--	--	--	--
o-Xylene	440	**0.07 J**	**0.08 J**	--	0.2 U	0.05 U	0.05 U	--	**0.36**	1 U	1 U	--	--	--	--
Total xylene (reported, not calculated)	--	--	--	--	--	--	--	--	--	--	--	--	**17**	**33**	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--
Metals, Dissolved (µg/L)															
Antimony	--	1 U	0.4 U	4 U	**3**	--	--	**0.25 J**	--	--	--	--	--	--	--
Arsenic	5	**1**	**1.4**	**1.06 J**	**0.8 J**	--	--	**0.8 J**	--	50 U	--	--	--	--	--
Barium	--	**60**	**69**	**97.4**	**69**	--	--	**98**	--	**67**	--	--	--	--	--
Beryllium	--	1 U	0.4 U	4 U	1 U	--	--	1 U	--	--	--	--	--	--	--
Cadmium	--	0.5 U	0.2 U	2 U	0.5 U	--	--	0.5 U	--	--	--	--	--	--	--
Chromium	260	**4**	**3**	**12.4**	**16**	--	--	**69**	--	**35**	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	0.03 U	--	--	--	--	--	--	--
Copper	3.1	**0.25 J**	1 U	2 U	**10**	--	--	2 U	--	2 U	--	--	--	--	--
Lead	8.1	**0.05 J**	**0.02 J**	2 U	**0.7**	--	--	**1**	--	20 U	--	--	--	--	--
Mercury	0.059	0.1 U	0.1 U	0.1 U	0.1 U	--	--	0.02 U	--	0.1 U	--	--	--	--	--
Nickel	8.2	**0.75 J**	**0.28 J**	**4.02 J**	**5**	--	--	**0.7 J**	--	10 U	--	--	--	--	--
Selenium	--	**0.65 J**	**0.65 J**	10 U	3 U	--	--	**1.3 J**	--	--	--	--	--	--	--
Silver	--	1 U	0.4 U	2 U	1 U	--	--	1 U	--	--	--	--	--	--	--
Thallium	--	1 U	0.4 U	4 U	1 U	--	--	1 U	--	--	--	--	--	--	--
Zinc	81	8 U	8 U	40 U	**14.2 J**	--	--	**7 J**	--	10 U	--	--	--	--	--
Metals, Total (µg/L)															
Antimony	--	0.2 U	0.4 U	**0.504**	**2.6**	--	--	--	--	--	--	--	20 U	9.9 U	--
Arsenic	5	**1.6**	**1.5**	**1.45**	**0.9**	--	--	--	--	50 U	50 U	--	10 U	**10.5**	--
Barium	--	**66.3**	**69**	**102**	**67**	--	--	--	--	**68**	**124**	--	--	--	--
Beryllium	--	0.2 U	0.4 U	2 U	0.4 U	--	--	--	--	--	--	--	5 U	0.5 U	--
Cadmium	8.8	0.2 U	0.2 U	0.1 U	0.2 U	--	--	--	--	--	--	--	5 U	10 U	--
Chromium	260	**3**	**3**	**14.2**	**16**	--	--	--	--	**53**	**26**	--	**173**	**204**	--
Chromium VI	50	**22 J**	**10 J**	**-- R**	10 UJ	--	--	0.03 U	--	--	--	--	1.2 U	--	--
Copper	3.1	1 U	1 U	**7.3**	**14**	--	--	--	--	2 U	**2**	--	10 U	**40.6**	--
Lead	8.1	**0.2**	**0.18 J**	**0.806**	**1.2**	--	--	--	--	20 U	20 U	5 U	20 U	**25.8**	--
Mercury	0.059	0.1 U	0.1 U	0.1 U	0.1 U	--	--	--	--	0.1 U	0.1 U	--	0.16 U	0.079 U	--
Nickel	8.2	**1**	**0.36 J**	**3.79**	**4**	--	--	--	--	10 U	10 U	--	10 U	**7.3**	--
Selenium	71	2.5 U	2 U	**0.811**	2.5 U	--	--	--	--	--	--	--	10 U	4.8 U	--
Silver	1,900	**0.01 J**	0.4 U	2 U	0.4 U	--	--	--	--	--	--	--	5 U	**6.4**	--
Thallium	--	0.2 U	0.4 U	0.2 U	0.4 U	--	--	--	--	--	--	--	20 U	9.5 U	--
Zinc	81	8 UJ	8 UJ	40 U	**13 J**	--	--	--	--	10 U	10 U	--	4.1 U	**93**	--
Conventional Parameters (µg/L)															
Calcium	--	--	--	--	--	--	--	--	--	**162,000**	**274,000**	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	**4,380**	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	**3,400**	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	**154,000**	**113,000**	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	**265**	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	**59,100**	**45,600**	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	**1,120,000**	**657,000**	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	CWF-CW-1		CWF-CW-2		CWMW-18	CWMW-65C	MW-1B							
	Location ID	CWF-CW-1	CWF-CW-1	CWF-CW-2	CWF-CW-2	CWMW-18	CWMW-65C	MW-1B	MW-1B	MW-1(B)	MW-1(B)	MW-1(B)	MW-1(B)	MW-1(B)	MW-1(B)
	Sample ID	CWF-CW-1-07202016	CWF-CW-101-07202016	CWF-CW-2-111416	CWF-CW-2-07202016	CWMW-18-070612	CWMW-65C-070612	MW-1B-10302013	MW-1B-070612	MW-1(B)-0308	MW-1-1007	MW-1-1007FB	MMW-1_1103	MMW-1_092302	MMW-1_92302
	Sample Date	07/20/2016	07/20/2016	11/14/2016	07/20/2016	07/06/2012	07/06/2012	10/30/2013	07/06/2012	03/25/2008	10/02/2007	10/02/2007	11/03/2003	09/23/2002	09/23/2002
	Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level														
Polycyclic Aromatic Hydrocarbons (µg/L)															
1-Methylnaphthalene	--	**0.062**	**0.067**	--	0.01 U	--	--	--	--	**8.7**	**12**	--	--	--	--
2-Methylnaphthalene	--	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	--
Acenaphthene	3.3	**0.49**	**0.61**	--	0.01 U	--	--	--	--	**0.44**	**0.4**	--	--	--	**0.6**
Acenaphthylene	--	**0.024**	**0.037**	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	0.01 U
Anthracene	9.6	**0.028**	**0.035**	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.2**
Benzo(a)anthracene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.2**
Benzo(a)pyrene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.1**
Benzo(b)fluoranthene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.1**
Benzo(g,h,i)perylene	--	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.09**
Benzo(k)fluoranthene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.05**
Chrysene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.2**
Dibenzo(a,h)anthracene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.02**
Dibenzofuran	--	**0.13**	**0.16**	--	0.01 U	--	--	--	--	**0.2**	**0.2**	--	--	--	--
Fluoranthene	3.3	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.5**
Fluorene	3	**0.29**	**0.34**	--	0.01 U	--	--	--	--	0.1 U	**0.12**	--	--	--	**1**
Indeno(1,2,3-c,d)pyrene	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.06**
Naphthalene	83	**0.034**	**0.039**	--	0.01 U	--	--	--	--	**0.77**	**1.3**	--	**6**	--	**3**
Phenanthrene	--	**0.018**	**0.021**	--	**0.016**	--	--	--	--	**0.22**	**0.24**	--	--	--	**2**
Pyrene	15	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.7**
Total cPAH TEQ	0.02	0.01 U	0.01 U	--	0.01 U	--	--	--	--	0.1 U	0.1 U	--	--	--	**0.145**
Semivolatile Organics (µg/L)															
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	MW-1B	MW-1A(C)	MW-2A(C)		MW-2A(C)						MW-3(B)					
Location ID		MW-1(B)	MW-1A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-3(B)	MW-3(B)	MW-3(B)	MW-3(B)	MW-3(B)	MW-3(B)
Sample ID		CMW-1_0701	MW-1A_021095	MW-2A_031798	MW-2A_123097	MW-2A_091097	MW-2A_061797	MW-2A_033197	MW-2A_1196	MW-2A_110795	MW-2A_021095	MW-3(B)-0907	CMW-3_0701	MW-3-B-110499	MW-3-B-81199	MW-3-B-41499	MW-3-B-21099
Sample Date		07/26/2001	02/10/1995	03/17/1998	12/30/1997	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	09/25/2007	07/26/2001	11/04/1999	08/11/1999	04/14/1999	02/10/1999
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	**5,070**	**100**	**156**	**50**	**50**	**50**	**50**	**54.6**	**55**	**130**	--	50 U	--	--	--	--
Diesel range hydrocarbons (with silica gel cleanup)	500	**7,310**	--	--	--	--	--	--	--	--	--	--	250 U	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	**1,820**	--	--	--	--	--	--	--	--	--	--	500 U	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	--	**8,700**	**5,850**	**2,460**	**1,430**	**2,620**	**5,830**	**7,920**	**7,920**	**10,000**	250 U	--	250 U	250 U	250 U	250 U
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	500 U	--	--	--	--	--
Oil	500	--	**2,400**	**880**	**1,040**	**250**	**1,270**	**1,740**	**2,460**	**2,460**	**2,400**	--	--	--	--	--	--
Volatile Organics (µg/L)																	
Benzene	2.4	**491**	**1.4**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	**0.69**	--	0.5 U	--	--	--	1 U
Toluene	7,300	**28.8**	--	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	--	0.5 U	--	--	--	1 U
Ethylbenzene	2,100	**105**	--	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	--	0.5 U	--	--	--	1 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
Total xylene (reported, not calculated)	--	**28.9**	**2.6**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	--	**1.4**	--	1 U	--	--	--	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	50 U	--	5 U	**2**	**1**	5 U
Barium	--	--	--	--	--	--	--	--	--	--	--	**5**	--	**43**	**6**	**6**	**24**
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	**16**	--	5 U	**26**	**28**	5 U
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	11 U	--	10 U	10 U	10 U	10 U
Copper	3.1	--	--	--	--	--	--	--	--	--	--	**17**	--	**18**	**26**	**30**	**10**
Lead	8.1	--	--	--	--	--	--	--	--	--	--	20 U	--	5 U	1 U	1 U	1 U
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	0.1 U	--	0.1 U	**0.1**	0.2 U	0.1 U
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	10 U	--	10 U	10 U	10 U	10 U
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	10 U	--	**47**	**12**	**15**	**28**
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	--	**30,900**	--	**310,000**	**69,800**	**84,400**	**138,000**
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	**170**	**310**	**4,400**	40 U
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	**30**	**250**	**3,490**	**40**
Magnesium	--	--	--	--	--	--	--	--	--	--	--	**82,900**	--	**550,000**	**76,800**	**91,700**	**390,000**
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	**490**	**108**	**239**	**2**
Potassium	--	--	--	--	--	--	--	--	--	--	--	**57,900**	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	**987,000**	--	**4,000,000**	**519,000**	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-1B	MW-1A(C)	MW-2A(C)		MW-2A(C)						MW-3(B)					
	Location ID	MW-1(B)	MW-1A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-2A(C)	MW-3(B)	MW-3(B)	MW-3(B)	MW-3(B)	MW-3(B)	MW-3(B)
	Sample ID	CMW-1_0701	MW-1A_021095	MW-2A_031798	MW-2A_123097	MW-2A_091097	MW-2A_061797	MW-2A_033197	MW-2A_1196	MW-2A_110795	MW-2A_021095	MW-3(B)-0907	CMW-3_0701	MW-3-B-110499	MW-3-B-81199	MW-3-B-41499	MW-3-B-21099
	Sample Date	07/26/2001	02/10/1995	03/17/1998	12/30/1997	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	09/25/2007	07/26/2001	11/04/1999	08/11/1999	04/14/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	1 U	1 U	1 U	1 U
Acenaphthene	3.3	0.1 U	10 U	--	--	--	--	--	--	--	10 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Acenaphthylene	--	--	10 U	--	--	--	--	--	--	--	10 U	0.1 U	--	1 U	1 U	1 U	1 U
Anthracene	9.6	--	10 U	--	--	--	--	--	--	--	10 U	0.1 U	--	1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Chrysene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--
Fluoranthene	3.3	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Fluorene	3	0.1 U	10 U	--	--	--	--	--	--	--	10 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Naphthalene	83	0.1 U	10 U	--	--	--	--	--	--	--	10 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Phenanthrene	--	0.1 U	10 U	--	--	--	--	--	--	--	10 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Pyrene	15	--	1 U	--	--	--	--	--	--	--	1 U	0.1 U	--	1 U	1 U	1 U	1 U
Total cPAH TEQ	0.02	--	0.2 U	--	--	--	--	--	--	--	0.2 U	0.1 U	--	1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	9

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	MW-3A(C)		MW-3A(C)				MW-4(B)							MW-4A(C)		
	Location ID	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4A(C)	MW-4A(C)	MW-4A(C)
	Sample ID	MW-3A_091097	MW-3A_061797	MW-3A_033197	MW-3A_1196	MW-3A_110795	MW-3A_021095	MW-4B-0308	DUP-01-0907	MW-4(B)-0907	MW-4-B-110399	MW-4-B-81199	MW-4-B-41399	MW-4-B-20999	MW-4A_0303	MW-4A_092302	MW-4A_090502
	Sample Date	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	03/24/2008	09/19/2007	09/19/2007	11/03/1999	08/11/1999	04/13/1999	02/09/1999	03/25/2003	09/23/2002	09/05/2002
	Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	161	--	--	212	212	180	--	--	--	--	--	--	--	50 U	--	50 U
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	3,970	4,520	1,700	3,480	3,480	5,200	--	250 U	250 U	250 U	250 U	250 U	250 U	250 U	--	780
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	500 U	500 U	--	--	--	--	--	--	--
Oil	500	880	1,350	1,190	1,110	1,110	--	--	--	--	--	--	--	--	250 U	--	340
Volatile Organics (µg/L)																	
Benzene	2.4	--	--	--	0.5	--	--	--	--	--	--	--	--	1 U	0.5 U	--	0.5 U
Toluene	7,300	--	--	--	0.5	--	--	--	--	--	--	--	--	1 U	0.5 U	--	0.5 U
Ethylbenzene	2,100	--	--	--	0.5	--	--	--	--	--	--	--	--	1 U	0.5 U	--	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Total xylene (reported, not calculated)	--	--	--	--	1.5	--	2	--	--	--	--	--	--	--	1.5 U	--	1.5 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	50 U	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	54	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	21	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9 U	9.9 U	--
Arsenic	5	--	--	--	--	--	--	50 U	70	70	21	21	20	16	4.9 U	7.1	--
Barium	--	--	--	--	--	--	--	50	60	59	40	29	25	26	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	0.94 U	10 U	--
Chromium	260	--	--	--	--	--	--	37	52	51	30	16	6	7	14	26.3	--
Chromium VI	50	--	--	--	--	--	--	11 U	11 U	11 U	20	10 U	60 U	60 U	--	--	--
Copper	3.1	--	--	--	--	--	--	5	2 U	2 U	2 U	2 U	2 U	2 U	7	7.2	--
Lead	8.1	--	--	--	--	--	--	20 U	20 U	20 U	1 U	1 U	1 U	1 U	14	20.4	--
Mercury	0.059	--	--	--	--	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.079 U	0.079 U	--
Nickel	8.2	--	--	--	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7.4	1.9 U	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 U	4.8 U	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	0.051	28.4	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.5 U	9.5 U	--
Zinc	81	--	--	--	--	--	--	10 U	10 U	10 U	8	5	11	44	24	20.8	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	181,000	180,000	255,000	224,000	220,000	232,000	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	29,000	26,000	24,000	23,000	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	27,600	24,300	23,600	22,100	--	--	--
Magnesium	--	--	--	--	--	--	--	--	28,600	28,300	23,700	18,600	17,900	19,000	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	881	771	803	853	--	--	--
Potassium	--	--	--	--	--	--	--	--	39,500	39,000	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	87,400	86,000	80,700	55,500	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-3A(C)		MW-3A(C)				MW-4(B)							MW-4A(C)		
	Location ID	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-3A(C)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4(B)	MW-4A(C)	MW-4A(C)	MW-4A(C)
	Sample ID	MW-3A_091097	MW-3A_061797	MW-3A_033197	MW-3A_1196	MW-3A_110795	MW-3A_021095	MW-4B-0308	DUP-01-0907	MW-4(B)-0907	MW-4-B-110399	MW-4-B-81199	MW-4-B-41399	MW-4-B-20999	MW-4A_0303	MW-4A_092302	MW-4A_090502
	Sample Date	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	03/24/2008	09/19/2007	09/19/2007	11/03/1999	08/11/1999	04/13/1999	02/09/1999	03/25/2003	09/23/2002	09/05/2002
	Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--
Acenaphthene	3.3	--	--	--	--	--	10 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Acenaphthylene	--	--	--	--	--	--	10 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Anthracene	9.6	--	--	--	--	--	10 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Benzo(a)anthracene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Benzo(a)pyrene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Chrysene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Fluorene	3	--	--	--	--	--	10 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Naphthalene	83	--	--	--	--	--	10 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	**0.02**	--
Phenanthrene	--	--	--	--	--	--	10 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Pyrene	15	--	--	--	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Total cPAH TEQ	0.02	--	--	--	--	--	0.2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	0.01 U	0.01 U	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	**1.2**	1 U	1 U	1 U	**6**	**1.4**	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-4A(C)										MW-4A©		MW-5A(C)		
	Location ID	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)
	Sample ID	MW-4A_032502	MW-4A_072501	MW-4A_091900	MW-4A_031000	MW-4A_082899	MW-4A_032299	MW-4A_091097	MW-4A_061797	MW-4A_033197	MW-4A_1196	MW-4A_110795	MW-4A_021095	MW-5A_072501	MW-5A_031000	MW-5A_082899
	Sample Date	03/25/2002	07/25/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	07/25/2001	03/10/2000	08/28/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level															
Total Petroleum Hydrocarbons (µg/L)																
Gasoline range hydrocarbons	800	50 U	--	**50**	**50**	**50**	**50**	**89.8**	**50**	**50**	**50**	--	**61**	50 U	--	**50**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	400 U	**262**	**1,870**	**1,230**	**900**	**629**	**2,060**	**1,080**	**1,310**	--	**1,850**	**5,900**	**2,300**	**1,450**	**738**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	1000 U	500 U	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	--	**2,200**	**867**	**868**	**250**
Volatile Organics (µg/L)																
Benzene	2.4	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	0.5 U	--	**0.5**
Toluene	7,300	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	0.5 U	**0.649**	**0.568**
Ethylbenzene	2,100	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	0.5 U	--	**0.5**
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	1.5 U	1 U	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	--	--	1 U	**1.28**	**1.5**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)																
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	MW-4A(C)										MW-4A©		MW-5A(C)		
	Location ID	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-4A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)
	Sample ID	MW-4A_032502	MW-4A_072501	MW-4A_091900	MW-4A_031000	MW-4A_082899	MW-4A_032299	MW-4A_091097	MW-4A_061797	MW-4A_033197	MW-4A_1196	MW-4A_110795	MW-4A_021095	MW-5A_072501	MW-5A_031000	MW-5A_082899
	Sample Date	03/25/2002	07/25/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	07/25/2001	03/10/2000	08/28/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level															
Polycyclic Aromatic Hydrocarbons (µg/L)																
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Fluorene	3	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--
Pyrene	15	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Semivolatile Organics (µg/L)																
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-5A(C)									MW-7(B)		MW-7A(C)		MW-7A(C)		
	Location ID	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-5A(C)	MW-7(B)	MW-7(B)	MW-7A(C)	MW-7A(C)	MW-7A(C)	MW-7A(C)	MW-7A(C)
	Sample ID	MW-5A_032299	MW-5A_091898	MW-5A_031798	MW-5A_1297	MW-5A_091097	MW-5A_061797	MW-5A_033197	MW-5A_110795	MW-5A_021095	MW-7(B)-1007	MW-7(B)-1007FB	MW-7A_031000	MW-7A_082899	MW-7A_032299	MW-7A_031798	MW-7A_1196
	Sample Date	03/22/1999	09/18/1998	03/17/1998	12/30/1997	09/10/1997	06/17/1997	03/31/1997	11/07/1995	02/10/1995	10/02/2007	10/02/2007	03/10/2000	08/28/1999	03/22/1999	03/17/1998	11/07/1996
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	50	50	50	50	50	50	50	50	400	250 U	--	382	408	1,850	474	--
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	352	2,020	317	250	1,850	468	561	793	5,300	250 U	--	16,800	205,000	26,400	5,070	--
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	500 U	--	--	--	--	--	--
Oil	500	250	--	250	250	818	250	250	250	3,800	--	--	2,800	40,900	7,250	250	--
Volatile Organics (µg/L)																	
Benzene	2.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	--	1 U	--	0.5	0.5	0.5	0.5	2
Toluene	7,300	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	--	1 U	--	0.5	0.5	0.5	0.5	--
Ethylbenzene	2,100	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	--	1 U	--	0.5	0.5	0.5	0.5	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	--	--	--	1.52	1.52	1.5	1.5	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	50 U	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	31	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	20 U	1.35	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	34,600	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	282	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	390	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	12,300	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	48	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	25,500	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	36,300	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-5A(C)									MW-7(B)		MW-7A(C)				MW-7A(C)
	Location ID	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-5A(C)**	**MW-7(B)**	**MW-7(B)**	**MW-7A(C)**	**MW-7A(C)**	**MW-7A(C)**	**MW-7A(C)**	**MW-7A(C)**
	Sample ID	**MW-5A_032299**	**MW-5A_091898**	**MW-5A_031798**	**MW-5A_1297**	**MW-5A_091097**	**MW-5A_061797**	**MW-5A_033197**	**MW-5A_110795**	**MW-5A_021095**	**MW-7(B)-1007**	**MW-7(B)-1007FB**	**MW-7A_031000**	**MW-7A_082899**	**MW-7A_032299**	**MW-7A_031798**	**MW-7A_1196**
	Sample Date	**03/22/1999**	**09/18/1998**	**03/17/1998**	**12/30/1997**	**09/10/1997**	**06/17/1997**	**03/31/1997**	**11/07/1995**	**02/10/1995**	**10/02/2007**	**10/02/2007**	**03/10/2000**	**08/28/1999**	**03/22/1999**	**03/17/1998**	**11/07/1996**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	--	**19**	1 U	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	10 U	1 U	--	--	--	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	--	10 U	1 U	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	--	**4.9**	1 U	--	--	--	--	--	--
Fluorene	3	--	--	--	--	--	--	--	--	**17**	1 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	**76**	1 U	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	**22**	1 U	--	--	--	--	--	--
Pyrene	15	--	--	--	--	--	--	--	--	5 U	1 U	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	--	0.2 U	1 U	--	--	--	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area			MW-8(B)		MW-8A(C)							MW-8A(C)				
	Location ID	MW-7A(C)	MW-7A(C)	MW-8(B)	MW-8(B)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-8A(C)	MW-9(B)
	Sample ID	MW-7A_110795	MW-7A_021095	MW-8(B)-36263	MW-8(B)-36228	MW-8A_091900	MW-8A_082899	MW-8A_032299	MW-8A_091898	MW-8A_031798	MW-8A_123097	MW-8A_091097	MW-8A_061797	MW-8A_033197	MW-8A_1196	MW-8A_110795	MMW-9_1103
	Sample Date	11/07/1995	02/10/1995	04/13/1999	03/09/1999	09/19/2000	08/28/1999	03/22/1999	09/18/1998	03/17/1998	12/30/1997	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	11/03/2003
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	--	**640**	--	--	**50**	**77.8**	**50**	**740**	**651**	**599**	**1,380**	**688**	**777**	**1,060**	**1,060**	**6,000**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	--	**25,000**	**440**	**700**	**5,970**	**2,670**	**2,780**	**4,530**	**7,100**	**9,370**	**5,290**	**6,860**	**8,380**	**8,410**	**8,410**	--
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	--	--	--	--	**1,670**	**250**	**3,850**	**250**	**1,110**	**2,460**	**1,290**	**1,470**	**1,590**	**1,520**	**1,520**	5,200 U
Volatile Organics (µg/L)																	
Benzene	2.4	**2**	--	--	1 U	**0.5**	**0.5**	**0.5**	**0.5**	--	--	**1.73**	**1.56**	--	**0.697**	**0.697**	**970**
Toluene	7,300	--	--	--	1 U	**0.5**	**0.874**	**0.5**	**0.5**	--	--	--	**0.542**	--	**0.59**	**0.59**	**38**
Ethylbenzene	2,100	--	--	--	1 U	**0.5**	**0.5**	**0.5**	**0.5**	**10**	**5**	**12.2**	**17.9**	**15.7**	**15.5**	**15.5**	**550**
m,p-Xylene	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	--	**1**	--	--	**1.5**	**1.5**	**1.76**	**1.5**	**6.13**	**5.55**	**5.63**	**11.5**	**25.6**	**7.97**	**7.97**	**150**
Dichloromethane (Methylene chloride)	94	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U
Arsenic	5	--	--	**2**	**2**	--	--	--	--	--	--	--	--	--	--	--	10 U
Barium	--	--	--	**361**	**331**	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Chromium	260	--	--	**817**	**985**	--	--	--	--	--	--	--	--	--	--	--	5 U
Chromium VI	50	--	--	110 U	110 U	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	2 U	**6**	--	--	--	--	--	--	--	--	--	--	--	10 U
Lead	8.1	--	--	1 U	**2**	--	--	--	--	--	--	--	--	--	--	--	20 U
Mercury	0.059	--	--	0.2 U	0.1 U	--	--	--	--	--	--	--	--	--	--	--	0.16 U
Nickel	8.2	--	--	10 U	**10**	--	--	--	--	--	--	--	--	--	--	--	10 U
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U
Zinc	81	--	--	**6**	4 U	--	--	--	--	--	--	--	--	--	--	--	4.1 U
Conventional Parameters (µg/L)																	
Calcium	--	--	--	**148,000**	**103,000**	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	**7,300**	**1,000**	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	**5,810**	**1,030**	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	**228,000**	**243,000**	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	**1,100**	**131**	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area			MW-8(B)		MW-8A(C)							MW-8A(C)				
	Location ID	**MW-7A(C)**	**MW-7A(C)**	**MW-8(B)**	**MW-8(B)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-8A(C)**	**MW-9(B)**
	Sample ID	**MW-7A_110795**	**MW-7A_021095**	**MW-8(B)-36263**	**MW-8(B)-36228**	**MW-8A_091900**	**MW-8A_082899**	**MW-8A_032299**	**MW-8A_091898**	**MW-8A_031798**	**MW-8A_123097**	**MW-8A_091097**	**MW-8A_061797**	**MW-8A_033197**	**MW-8A_1196**	**MW-8A_110795**	**MMW-9_1103**
	Sample Date	**11/07/1995**	**02/10/1995**	**04/13/1999**	**03/09/1999**	**09/19/2000**	**08/28/1999**	**03/22/1999**	**09/18/1998**	**03/17/1998**	**12/30/1997**	**09/10/1997**	**06/17/1997**	**03/31/1997**	**11/07/1996**	**11/07/1995**	**11/03/2003**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	10 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	10 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	9.6	--	10 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	0.02	--	5 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	3	--	**10**	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	10 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**170**
Phenanthrene	--	--	10 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	15	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	0.2 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	MW-9(B)				MW-9A(C)					MW-9A(C)							
	Location ID	MW-9(B)	MW-9(B)	MW-9(B)	MW-9(B)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)	MW-9A(C)
	Sample ID	MMW-9_0303	MMW-9_092302	CMW-9_0901	CMW-9_0701	MW-9A_1103	MW-9A_0303	MW-9A_092302	MW-9A_072601	MW-9A_091900	MW-9A_031000	MW-9A_082899	MW-9A_032299	MW-9A_091898	MW-9A_0398	MW-9A_0997	MW-9A_0697	MW-9A_1297
	Sample Date	03/25/2003	09/23/2002	09/19/2001	07/26/2001	11/03/2003	03/25/2003	09/23/2002	07/26/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	09/18/1998	03/17/1998	09/10/1997	06/17/1997	12/30/1997
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																	
Total Petroleum Hydrocarbons (µg/L)																		
Gasoline range hydrocarbons	800	**11,000**	**6,600**	--	**8,260**	50 U	50 U	**78**	**89.8**	**50**	**50**	**131**	**50**	**50**	**50**	**50**	**50**	**50**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	**80,700**	**95,100**	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	10,500 U	20,500 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**4,900**	**22,000**	--	--	**290**	250 U	**970**	250 U	**1,090**	**868**	**1,380**	**1,050**	**799**	**250**	**250**	**250**	**250**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	**580**	2,500 U	--	--	**490**	**460**	**310**	500 U	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**	**250**
Volatile Organics (µg/L)																		
Benzene	2.4	**720**	**380**	--	**502**	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Toluene	7,300	**42**	**32**	--	**50.3**	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**
Ethylbenzene	2,100	**610**	**420**	--	**539**	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.722**	**0.5**
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	**240**	**191**	--	**314**	0.5 U	1.5 U	1.5 U	1 U	**1.5**	**1.5**	--	**1.5**	**1.5**	**1.5**	**1.5**	**2.48**	**1.5**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																		
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																		
Antimony	--	9.9 U	9.9 U	--	--	20 U	9.9 U	9.9 U	--	--	--	--	--	--	--	--	--	--
Arsenic	5	**18**	**11.7**	--	--	10 U	4.9 U	**8.2**	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	0.5 U	0.5 U	--	--	5 U	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	**1.5**	10 U	--	--	5 U	**2.1**	10 U	--	--	--	--	--	--	--	--	--	--
Chromium	260	**29**	**56.6**	--	--	**33**	**49**	**177**	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	1.2 U	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	**7.5**	**4.5**	--	--	10 U	**17**	**4.6**	--	--	--	--	--	--	--	--	--	--
Lead	8.1	**30**	**10.6**	--	--	20 U	**3.5**	8.9 U	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	0.079 U	0.079 U	--	--	0.16 U	0.079 U	0.079 U	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	**9.2**	**5.4**	--	--	10 U	**8.2**	1.9 U	--	--	--	--	--	--	--	--	--	--
Selenium	71	**10**	4.8 U	--	--	10 U	**5.2**	**5.1**	--	--	--	--	--	--	--	--	--	--
Silver	1,900	1.4 U	1.4 U	--	--	5 U	1.4 U	1.4 U	--	--	--	--	--	--	--	--	--	--
Thallium	--	9.5 U	9.5 U	--	--	20 U	9.5 U	9.5 U	--	--	--	--	--	--	--	--	--	--
Zinc	81	**56**	**14.5**	--	--	4.1 U	**170**	**8.6**	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)																		
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Area		MW-9(B)				MW-9A(C)					MW-9A(C)							
Location ID		**MW-9(B)**	**MW-9(B)**	**MW-9(B)**	**MW-9(B)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**	**MW-9A(C)**
Sample ID		**MMW-9_0303**	**MMW-9_092302**	**CMW-9_0901**	**CMW-9_0701**	**MW-9A_1103**	**MW-9A_0303**	**MW-9A_092302**	**MW-9A_072601**	**MW-9A_091900**	**MW-9A_031000**	**MW-9A_082899**	**MW-9A_032299**	**MW-9A_091898**	**MW-9A_0398**	**MW-9A_0997**	**MW-9A_0697**	**MW-9A_1297**
Sample Date		**03/25/2003**	**09/23/2002**	**09/19/2001**	**07/26/2001**	**11/03/2003**	**03/25/2003**	**09/23/2002**	**07/26/2001**	**09/19/2000**	**03/10/2000**	**08/28/1999**	**03/22/1999**	**09/18/1998**	**03/17/1998**	**09/10/1997**	**06/17/1997**	**12/30/1997**
Sample Type		**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**																	
Polycyclic Aromatic Hydrocarbons (µg/L)																		
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	**3**	**1**	--	0.1 U	--	**0.01**	**0.07**	0.1 U	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	**0.8**	0.02 U	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Anthracene	9.6	**1**	**1**	--	--	--	**0.02**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.02	0.1 U	**0.05**	--	--	--	**0.02**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.02	0.1 U	**0.03**	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	0.1 U	**0.03**	--	--	--	**0.04**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	0.1 U	**0.03**	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	0.1 U	0.02 U	--	--	--	**0.01**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Chrysene	0.02	**0.2**	**0.3**	--	--	--	**0.06**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	0.1 U	0.02 U	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	**0.6**	**0.3**	--	--	--	**0.2**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Fluorene	3	**12**	**5**	--	0.1 U	--	**0.03**	**0.01**	0.1 U	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	0.1 U	0.02 U	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Naphthalene	83	**110**	**2**	--	**285**	1 U	**0.03**	**0.09**	0.1 U	--	--	--	--	--	--	--	--	--
Phenanthrene	--	**16**	**5**	--	0.1 U	--	**0.1**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Pyrene	15	**2**	**2**	--	--	--	**0.1**	**0.01**	0.1 U	--	--	--	--	--	--	--	--	--
Total cPAH TEQ	0.02	**0.1**	**0.044**	--	--	--	**0.01**	0.01 U	0.1 U	--	--	--	--	--	--	--	--	--
Semivolatile Organics (µg/L)																		
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area			MW-10(B)				MW-10(B)							
	Location ID	MW-9A(C)	MW-9A(C)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)	MW-10(B)
	Sample ID	MW-9A_1196	MW-9A_20995	MMW-10B_1103	MMW-10B_0303	MMW-10B_92302	MMW-10B_092302	MMW-10B_090502	MMW-10B_032502	MMW-10B_072601	MMW-10B_72601	MMW-10B_033001	MMW-10B_091900	MMW-10B_031000	MMW-10B_082899
	Sample Date	11/07/1996	02/09/1995	11/03/2003	03/25/2003	09/23/2002	09/23/2002	09/05/2002	03/25/2002	07/26/2001	07/26/2001	03/30/2001	09/19/2000	03/10/2000	08/28/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level														
Total Petroleum Hydrocarbons (µg/L)															
Gasoline range hydrocarbons	800	**50**	--	50 U	50 U	--	--	50 U	50 U	50 U	--	50 U	--	--	--
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**250**	--	800 U	250 U	--	--	**470**	250 U	250 U	--	**343**	**508**	--	**382**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	**250**	--	1,000 U	**270**	--	--	**350**	750 U	500 U	--	750 U	--	--	--
Volatile Organics (µg/L)															
Benzene	2.4	**0.5**	--	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	**0.624**	--
Toluene	7,300	**0.5**	--	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	**0.72**	--
Ethylbenzene	2,100	**0.5**	--	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	--	0.5 U	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	**1.5**	--	0.5 U	1.5 U	--	--	1.5 U	1.5 U	1 U	--	1 U	--	--	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)															
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)															
Antimony	--	--	--	20 U	9.9 U	--	9.9 U	--	--	--	--	--	--	--	--
Arsenic	5	--	--	10 U	**97**	--	**50.6**	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	5 U	0.5 U	--	0.5 U	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	5 U	**3.2**	--	10 U	--	--	--	--	--	--	--	--
Chromium	260	--	--	**17.1**	**160**	--	**272**	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	1.2 U	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	10 U	**21**	--	**7**	--	--	--	--	--	--	--	--
Lead	8.1	--	--	20 U	**1.9**	--	8.9 U	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	0.16 U	0.079 U	--	0.079 U	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	10 U	**9.6**	--	**2.4**	--	--	--	--	--	--	--	--
Selenium	71	--	--	10 U	4.8 U	--	4.8 U	--	--	--	--	--	--	--	--
Silver	1,900	--	--	5 U	1.4 U	--	1.4 U	--	--	--	--	--	--	--	--
Thallium	--	--	--	20 U	9.5 U	--	9.5 U	--	--	--	--	--	--	--	--
Zinc	81	--	--	**27.6**	**36**	--	**10.3**	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)															
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area			MW-10(B)				MW-10(B)							
	Location ID	**MW-9A(C)**	**MW-9A(C)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**	**MW-10(B)**
	Sample ID	**MW-9A_1196**	**MW-9A_20995**	**MMW-10B_1103**	**MMW-10B_0303**	**MMW-10B_92302**	**MMW-10B_092302**	**MMW-10B_090502**	**MMW-10B_032502**	**MMW-10B_072601**	**MMW-10B_72601**	**MMW-10B_033001**	**MMW-10B_091900**	**MMW-10B_031000**	**MMW-10B_082899**
	Sample Date	**11/07/1996**	**02/09/1995**	**11/03/2003**	**03/25/2003**	**09/23/2002**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/26/2001**	**07/26/2001**	**03/30/2001**	**09/19/2000**	**03/10/2000**	**08/28/1999**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**														
Polycyclic Aromatic Hydrocarbons (µg/L)															
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	10 U	--	0.01 U	**0.01**	--	--	--	--	0.1 U	--	--	--	--
Acenaphthylene	--	--	10 U	--	0.01 U	**0.05**	--	--	--	--	0.1 U	--	--	--	--
Anthracene	9.6	--	10 U	--	0.01 U	**0.02**	--	--	--	--	0.1 U	--	--	--	--
Benzo(a)anthracene	0.02	--	0.2 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Benzo(a)pyrene	0.02	--	0.2 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Benzo(b)fluoranthene	0.02	--	0.2 U	--	**0.01**	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Benzo(g,h,i)perylene	--	--	0.2 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Benzo(k)fluoranthene	0.02	--	0.2 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Chrysene	0.02	--	0.2 U	--	**0.02**	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	0.2 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	0.2 U	--	**0.04**	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Fluorene	3	--	10 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	0.2 U	--	0.01 U	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Naphthalene	83	--	10 U	1 U	**0.04**	**0.01**	--	--	--	--	0.1 U	--	--	--	--
Phenanthrene	--	--	10 U	--	**0.04**	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Pyrene	15	--	1 U	--	**0.03**	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Total cPAH TEQ	0.02	--	0.2 U	--	**0.01**	0.01 U	--	--	--	--	0.1 U	--	--	--	--
Semivolatile Organics (µg/L)															
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Area					MW-10A(C)			MW-10A(C)		MW-11A(C)					
	Location ID	MW-10(B)	MW-10(B)	MW-10(B)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)
	Sample ID	MMW-10B_032299	MMW-10B_031798	MMW-10B_091898	MW-10A_0398	MW-10A_123097	MW-10A_033197	MW-10A_021095	MW-10A_020995	MW-11A_082899	MW-11A_032299	MW-11A_031798	MW-11A_123097	MW-11A_091097	MW-11A_061797
	Sample Date	03/22/1999	03/17/1998	09/18/1998	03/17/1998	12/30/1997	03/31/1997	02/10/1995	02/09/1995	08/28/1999	03/22/1999	03/17/1998	12/30/1997	09/10/1997	06/17/1997
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level														
Total Petroleum Hydrocarbons (µg/L)															
Gasoline range hydrocarbons	800	--	--	--	50 U	--	--	**950**	--	**50**	**50**	**50**	**50**	--	--
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**339**	**391**	**390**	250 U	**324**	**319**	**1,700**	--	**1,190**	**666**	**635**	**690**	**797**	**706**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	--	--	--	250 U	--	--	--	--	**250**	**250**	**250**	**250**	--	--
Volatile Organics (µg/L)															
Benzene	2.4	--	--	--	0.5 U	--	--	--	--	**0.5**	**0.5**	**0.5**	**0.5**	--	--
Toluene	7,300	--	--	--	0.5 U	--	--	--	--	**0.5**	**0.5**	**0.5**	**0.5**	--	**0.848**
Ethylbenzene	2,100	--	--	--	0.5 U	--	--	**0.55**	--	**0.5**	**0.5**	**0.5**	**0.5**	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	--	--	--	1.5 U	--	--	**4.3**	--	**1.5**	**1.5**	**1.5**	**1.5**	--	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)															
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)															
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)															
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area				MW-10A(C)			MW-10A(C)		MW-11A(C)					
	Location ID	MW-10(B)	MW-10(B)	MW-10(B)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-10A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-11A(C)
	Sample ID	MMW-10B_032299	MMW-10B_031798	MMW-10B_091898	MW-10A_0398	MW-10A_123097	MW-10A_033197	MW-10A_021095	MW-10A_020995	MW-11A_082899	MW-11A_032299	MW-11A_031798	MW-11A_123097	MW-11A_091097	MW-11A_061797
	Sample Date	03/22/1999	03/17/1998	09/18/1998	03/17/1998	12/30/1997	03/31/1997	02/10/1995	02/09/1995	08/28/1999	03/22/1999	03/17/1998	12/30/1997	09/10/1997	06/17/1997
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level														
Polycyclic Aromatic Hydrocarbons (µg/L)															
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Fluorene	3	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Pyrene	15	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Semivolatile Organics (µg/L)															
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area				MW-12A(C)			MW-12A(C)								
	Location ID	**MW-11A(C)**	**MW-11A(C)**	**MW-11A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**	**MW-12A(C)**
	Sample ID	**MW-11A_033197**	**MW-11A_021095**	**MW-11A_020995**	**MW-12A-C-0907**	**MW-12A(C)-0907FB**	**DUP-03-0907**	**MW-12A_1103**	**MW-12A_0303**	**MW-12A_092302**	**MW-12A_92302**	**MW-12A_090502**	**MW-12A_032502**	**MW-12A_072501**	**MW-12A_033001**	**MW-12A_091900**
	Sample Date	**03/31/1997**	**02/10/1995**	**02/09/1995**	**09/25/2007**	**09/25/2007**	**09/25/2007**	**11/03/2003**	**03/25/2003**	**09/23/2002**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/25/2001**	**03/30/2001**	**09/19/2000**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**FD**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**															
Total Petroleum Hydrocarbons (µg/L)																
Gasoline range hydrocarbons	800	--	--	--	250 U	--	250 U	50 U	50 U	--	--	50 U	50 U	50 U	50 U	**50**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**1,030**	**760**	--	250 U	--	250 U	**430**	250 U	--	--	**590**	**1,200**	**1,150**	**705**	**891**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	500 U	--	500 U	--	--	--	--	--	--	--	--	--
Oil	500	--	--	--	--	--	--	250 U	250 U	--	--	**250**	750 U	500 U	750 U	--
Volatile Organics (µg/L)																
Benzene	2.4	--	--	--	1 U	--	1 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**
Toluene	7,300	--	--	--	1 U	--	1 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	**0.578**	**0.5**
Ethylbenzene	2,100	--	--	--	1 U	--	1 U	0.5 U	0.5 U	--	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**
m,p-Xylene	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	1 U	--	1 U	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	--	--	--	--	--	--	0.5 U	1.5 U	--	--	1.5 U	1.5 U	1 U	**1.11**	**1.02**
Dichloromethane (Methylene chloride)	94	--	--	--	2 U	--	2 U	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	5 U	--	5 U	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																
Antimony	--	--	--	--	--	--	--	--	9.9 U	9.9 U	--	--	--	--	--	--
Arsenic	5	--	--	--	50 U	--	50 U	--	**400**	**14.9**	--	--	--	--	--	--
Barium	--	--	--	--	**24**	--	**23**	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	0.94 U	10 U	--	--	--	--	--	--
Chromium	260	--	--	--	**23**	--	**22**	--	**300**	**93.3**	--	--	--	--	--	--
Chromium VI	50	--	--	--	11 U	--	11 U	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	2 U	--	2 U	--	**33**	**10.6**	--	--	--	--	--	--
Lead	8.1	--	--	--	20 U	1 U	20 U	--	**2.4**	8.9 U	--	--	--	--	--	--
Mercury	0.059	--	--	--	0.1 U	--	0.1 U	--	0.4 U	0.079 U	--	--	--	--	--	--
Nickel	8.2	--	--	--	10 U	--	10 U	--	**12**	**3.6**	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	**22**	**4.8**	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	1.4 U	**1.6**	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	9.5 U	9.5 U	--	--	--	--	--	--
Zinc	81	--	--	--	10 U	--	10 U	--	**49**	**9.9**	--	--	--	--	--	--
Conventional Parameters (µg/L)																
Calcium	--	--	--	--	**169,000**	--	**164,000**	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	**6,460**	--	**7,660**	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	**7,840**	--	**7,520**	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	**30,400**	--	**29,600**	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	**658**	--	**636**	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	**26,000**	--	**25,300**	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	**162,000**	--	**158,000**	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area				MW-12A(C)						MW-12A(C)					
	Location ID	MW-11A(C)	MW-11A(C)	MW-11A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)
	Sample ID	MW-11A_033197	MW-11A_021095	MW-11A_020995	MW-12A-C-0907	MW-12A(C)-0907FB	DUP-03-0907	MW-12A_1103	MW-12A_0303	MW-12A_092302	MW-12A_92302	MW-12A_090502	MW-12A_032502	MW-12A_072501	MW-12A_033001	MW-12A_091900
	Sample Date	03/31/1997	02/10/1995	02/09/1995	09/25/2007	09/25/2007	09/25/2007	11/03/2003	03/25/2003	09/23/2002	09/23/2002	09/05/2002	03/25/2002	07/25/2001	03/30/2001	09/19/2000
	Sample Type	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
Analyte	Screening Level															
Polycyclic Aromatic Hydrocarbons (µg/L)																
1-Methylnaphthalene	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	10 U	0.1 U	--	0.1 U	--	**0.09**	**0.2**	--	--	--	--	--	--
Acenaphthylene	--	--	--	10 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Anthracene	9.6	--	--	10 U	0.1 U	--	0.1 U	--	**0.01**	0.01 U	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	--	0.01 U	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Chrysene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	0.1 U	--	0.1 U	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	**0.02**	--	--	--	--	--	--
Fluorene	3	--	--	10 U	0.1 U	--	0.1 U	--	**0.02**	**0.04**	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Naphthalene	83	--	--	10 U	0.1 U	--	0.1 U	1 U	**0.02**	--	**0.03**	--	--	--	--	--
Phenanthrene	--	--	--	10 U	0.1 U	--	0.1 U	--	0.01 U	**0.02**	--	--	--	--	--	--
Pyrene	15	--	--	1 U	0.1 U	--	0.1 U	--	0.01 U	**0.02**	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	--	0.2 U	0.1 U	--	0.1 U	--	0.01 U	0.01 U	0.001 U	--	--	--	--	--
Semivolatile Organics (µg/L)																
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-12A(C)												MW-		
	Location ID	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-13(B)	MW-13(B)	MW-13(B)
	Sample ID	MW-12A_031000	MW-12A_082899	MW-12A_032299	MW-12A_091898	MW-12A_031798	MW-12A_123097	MW-12A_091097	MW-12A_061797	MW-12A_033197	MW-12A_1196	MW-12A_110795	MW-12A_021095	MW-13(B)-0308	MW-13(B)-0907	MMW-13_1103
	Sample Date	03/10/2000	08/28/1999	03/22/1999	09/18/1998	03/17/1998	12/30/1997	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	03/24/2008	09/20/2007	11/03/2003
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level															
Total Petroleum Hydrocarbons (µg/L)																
Gasoline range hydrocarbons	800	--	**80.1**	**88.4**	**74.4**	**78.1**	**51**	**108**	**78.5**	**74.6**	**90.4**	**90.4**	--	250 U	250 U	50 U
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**1,680**	**1,480**	**1,510**	**1,960**	**806**	**1,430**	**3,080**	**3,250**	**2,370**	**1,790**	**1,790**	**1,500**	250 U	250 U	250 U
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	500 U	500 U	--
Oil	500	**250**	**250**	--	--	**250**	--	**874**	--	**250**	**250**	--	--	--	--	250 U
Volatile Organics (µg/L)																
Benzene	2.4	**0.5**	**0.5**	--	**0.5**	**0.5**	--	--	**0.585**	**0.5**	**0.5**	--	--	1 U	1 U	0.5 U
Toluene	7,300	**0.592**	**0.5**	--	**0.5**	**0.5**	**0.506**	--	**0.625**	**0.5**	**0.5**	--	--	1 U	1 U	0.5 U
Ethylbenzene	2,100	**0.5**	**0.5**	--	**0.5**	**0.5**	--	--	**1.64**	**0.5**	**0.5**	--	--	1 U	1 U	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--
Total xylene (reported, not calculated)	--	**1.6**	**1.5**	--	**1.5**	**1.5**	--	--	**5.6**	**1.5**	**1.5**	--	--	--	--	0.5 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--
Metals, Dissolved (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	50 U	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	**8**	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--
Metals, Total (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	50 U	50 U	10 U
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	**7**	**8**	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U	5 U
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	11 U	11 U	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	10 U
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	20 U	20 U	20 U
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	0.16 U
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U	10 U
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.7 U
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	10 U	10 U	20 U
Conventional Parameters (µg/L)																
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	**99,900**	**105,000**	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	**11,500**	**9,270**	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	**12,900**	**13,300**	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	**106,000**	**44,000**	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area Location ID Sample ID Sample Date Sample Type Screening Level	MW-12A(C)												MW-		
	Location ID	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-12A(C)	MW-13(B)	MW-13(B)	MW-13(B)
	Sample ID	MW-12A_031000	MW-12A_082899	MW-12A_032299	MW-12A_091898	MW-12A_031798	MW-12A_123097	MW-12A_091097	MW-12A_061797	MW-12A_033197	MW-12A_1196	MW-12A_110795	MW-12A_021095	MW-13(B)-0308	MW-13(B)-0907	MMW-13_1103
	Sample Date	03/10/2000	08/28/1999	03/22/1999	09/18/1998	03/17/1998	12/30/1997	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	03/24/2008	09/20/2007	11/03/2003
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Polycyclic Aromatic Hydrocarbons (µg/L)																
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	0.1 U	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	0.1 U	--
Acenaphthene	3.3	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	0.1 U	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	0.1 U	--
Anthracene	9.6	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	0.1 U	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Chrysene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--
Fluoranthene	3.3	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Fluorene	3	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	0.1 U	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	0.1 U	1 U
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	10 U	1 U	0.1 U	--
Pyrene	15	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	0.1 U	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	--	--	--	--	0.2 U	1 U	0.1 U	--
Semivolatile Organics (µg/L)																
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	13(B)			MW-14(B)	MW-14(B)										
	Location ID	MW-13(B)	MW-13(B)	MW-13(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)
	Sample ID	MMW-13_1103D	MMW-13_0902	CMW-13_0901	MW-14(B)-0907	MMW-14_0303	MMW-14_092302	MMW-14_090502	MMW-14_032502	MMW-14_072601	MMW-14_0301	MMW-14_033001	MMW-14_091900	MMW-14_0300	MMW-14_031000	MMW-14_082899
	Sample Date	11/03/2003	09/23/2002	09/19/2001	09/19/2007	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/26/2001	03/30/2001	03/30/2001	09/19/2000	03/10/2000	03/10/2000	08/28/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level															
Total Petroleum Hydrocarbons (µg/L)																
Gasoline range hydrocarbons	800	50 U	50 U	50 U	**3,000**	**3,600**	--	**8,500**	**4,500**	**6,120**	--	**6,980**	**6,510**	--	**6,120**	**9,810**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	250 U	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	250 U	250 U	--	250 U	**2,000**	--	**2,000**	**2,300**	**868**	--	**1,090**	**1,240**	--	**1,460**	**1,100**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--
Oil	500	250 U	250 U	--	--	510 U	--	250 U	750 U	500 U	750 U	750 U	--	250 U	--	--
Volatile Organics (µg/L)																
Benzene	2.4	0.5 U	0.5 U	0.5 U	1 U	**6.8**	--	5 U	**6.5**	**19**	2.5 U	2.5 U	--	--	**8.21**	--
Toluene	7,300	0.5 U	0.5 U	0.5 U	1 U	2 U	--	**5**	5 U	**5.93**	--	**4.61**	--	--	--	--
Ethylbenzene	2,100	0.5 U	0.5 U	0.5 U	**28**	**7.1**	--	**150**	**2.6**	**178**	--	**205**	**200**	--	**136**	**370**
m,p-Xylene	--	--	--	--	**14**	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	0.5 U	1.5 U	1 U	--	**8.8**	--	**110**	1.5 U	**133**	--	**160**	**156**	--	**128**	**372**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																
Antimony	--	--	9.9 U	--	--	9.9 U	9.9 U	--	--	--	--	--	--	--	--	--
Arsenic	5	--	**38.7**	--	50 U	**290**	**127**	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	**32**	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	0.5 U	--	--	0.5 U	0.5 U	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	10 U	--	--	**2**	10 U	--	--	--	--	--	--	--	--	--
Chromium	260	--	**4.2**	--	**32**	**42**	**27**	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	11 U	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	**108**	--	2 U	**80**	**11.6**	--	--	--	--	--	--	--	--	--
Lead	8.1	--	**21**	--	20 U	**150**	**73.8**	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	0.079 U	--	0.1 U	0.4 U	0.079 U	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	**2.7**	--	10 U	**15**	**3.4**	--	--	--	--	--	--	--	--	--
Selenium	71	--	4.8 U	--	--	4.8 U	**6.2**	--	--	--	--	--	--	--	--	--
Silver	1,900	--	1.4 U	--	--	1.4 U	**1.7**	--	--	--	--	--	--	--	--	--
Thallium	--	--	9.5 U	--	--	9.5 U	9.5 U	--	--	--	--	--	--	--	--	--
Zinc	81	--	**13.3**	--	10 U	**100**	**16.6**	--	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)																
Calcium	--	--	--	--	**172,000**	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	**389**	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	**410**	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	**16,800**	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	**242**	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	**17,900**	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	**52,400**	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	13(B)			MW-14(B)	MW-14(B)										
	Location ID	**MW-13(B)**	**MW-13(B)**	**MW-13(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**	**MW-14(B)**
	Sample ID	**MMW-13_1103D**	**MMW-13_0902**	**CMW-13_0901**	**MW-14(B)-0907**	**MMW-14_0303**	**MMW-14_092302**	**MMW-14_090502**	**MMW-14_032502**	**MMW-14_072601**	**MMW-14_0301**	**MMW-14_033001**	**MMW-14_091900**	**MMW-14_0300**	**MMW-14_031000**	**MMW-14_082899**
	Sample Date	**11/03/2003**	**09/23/2002**	**09/19/2001**	**09/19/2007**	**03/25/2003**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/26/2001**	**03/30/2001**	**03/30/2001**	**09/19/2000**	**03/10/2000**	**03/10/2000**	**08/28/1999**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**															
Polycyclic Aromatic Hydrocarbons (µg/L)																
1-Methylnaphthalene	--	--	--	--	**28**	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	**48**	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	**0.03**	**0.876**	**0.21**	**0.5**	**0.5**	--	--	0.1 U	--	--	--	--	--	--
Acenaphthylene	--	--	0.01 U	--	0.1 U	**0.2**	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Anthracene	9.6	--	**0.02**	--	0.1 U	**0.04**	**0.03**	--	--	0.1 U	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	0.01 U	--	0.1 U	**0.01**	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	0.01 U	--	0.1 U	0.01 U	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	0.01 U	--	0.1 U	0.01 U	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	0.01 U	--	0.1 U	0.01 U	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	**0.01**	--	0.1 U	0.01 U	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Chrysene	0.02	--	0.01 U	--	0.1 U	**0.01**	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	0.01 U	--	0.1 U	0.01 U	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	**0.11**	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	**0.02**	--	0.1 U	**0.02**	**0.02**	--	--	0.1 U	--	--	--	--	--	--
Fluorene	3	--	**0.02**	0.1 U	**0.45**	**2**	**1**	--	--	**0.939**	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	0.01 U	--	0.1 U	0.01 U	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Naphthalene	83	--	**0.03**	0.1 U	**30**	**5**	**120**	--	--	**105**	--	--	--	--	--	--
Phenanthrene	--	--	**0.02**	0.1 U	**0.21**	**0.07**	**0.5**	--	--	**0.579**	--	--	--	--	--	--
Pyrene	15	--	**0.04**	--	0.1 U	**0.05**	**0.03**	--	--	0.1 U	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	**0.01**	--	0.1 U	**0.01**	0.01 U	--	--	0.1 U	--	--	--	--	--	--
Semivolatile Organics (µg/L)																
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level				MW-14(B)	MW-18(C)	MW-33(C)						MW-37(C)				
	Location ID	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-18(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-37(C)	MW-37(C)	MW-37(C)	MW-37(C)	MW-37(C)
	Sample ID	MMW-14_0899	MMW-14_032299	MMW-14_091898	MMW-14_031798	MW-18_21195	MW-33_091097	MW-33_061797	MW-33_033197	MW-33_1196	MW-33_110795	MW-33_021095	MW-37_1103	MW-37_092302	MW-37_090502	MW-37_032502	MW-37_072501
	Sample Date	08/28/1999	03/22/1999	09/18/1998	03/17/1998	02/11/1995	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	11/03/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	--	11,500	8,650	10,400	--	50	50	60.4	50	--	--	500 U	--	600	560	606
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	--	1,190	1,580	3,950	--	1,130	610	813	462	462	790	6,600	--	5,200	4,200	7,080
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	250 U	250 U	--	3,220	--	250	250	--	250	--	--	1,200	--	2,400	1,300	969
Volatile Organics (µg/L)																	
Benzene	2.4	--	22.4	--	20	--	0.5	0.5	0.868	0.5	--	--	0.5 U	--	0.5 U	0.5 U	0.56
Toluene	7,300	--	8.57	--	--	--	0.5	0.5	1.14	0.5	--	--	0.5 U	--	0.78	0.5 U	0.922
Ethylbenzene	2,100	--	108	277	14.6	--	0.5	0.5	0.667	0.5	--	--	0.5 U	--	0.5 U	0.65	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	--	130	331	--	--	1.5	1.5	1.06	1.5	--	--	0.5 U	--	1.5 U	1.5 U	1.25
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	20 U	9.9 U	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	10 U	5.6	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	5 U	10 U	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	5 U	55.1	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	1.6	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	10 U	7.8	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	20 U	8.9 U	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	0.16 U	0.079 U	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	10 U	1.9 U	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	10 U	4.8 U	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	5 U	1.4 U	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	20 U	9.5 U	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	4.1 U	22.1	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area				MW-14(B)	MW-18(C)	MW-33(C)						MW-37(C)				
	Location ID	MW-14(B)	MW-14(B)	MW-14(B)	MW-14(B)	MW-18(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-33(C)	MW-37(C)	MW-37(C)	MW-37(C)	MW-37(C)	MW-37(C)
	Sample ID	MMW-14_0899	MMW-14_032299	MMW-14_091898	MMW-14_031798	MW-18_21195	MW-33_091097	MW-33_061797	MW-33_033197	MW-33_1196	MW-33_110795	MW-33_021095	MW-37_1103	MW-37_092302	MW-37_090502	MW-37_032502	MW-37_072501
	Sample Date	08/28/1999	03/22/1999	09/18/1998	03/17/1998	02/11/1995	09/10/1997	06/17/1997	03/31/1997	11/07/1996	11/07/1995	02/10/1995	11/03/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	10 U	--	--	--	--	--	10 U	--	**0.02**	--	--	--
Acenaphthylene	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	0.01 U	--	--	--
Anthracene	9.6	--	--	--	--	10 U	--	--	--	--	--	10 U	--	**0.02**	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Chrysene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	**0.01**	--	--	--
Fluorene	3	--	--	--	--	10 U	--	--	--	--	--	10 U	--	**0.01**	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Naphthalene	83	--	--	--	--	10 U	--	--	--	--	--	10 U	1 U	**0.3**	--	--	--
Phenanthrene	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	**0.03**	--	--	--
Pyrene	15	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**0.03**	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	0.01 U	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	MW-37(C)				MW-43(C)											
	Location ID	MW-37(C)	MW-37(C)	MW-37(C)	MW-37(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)
	Sample ID	MW-37_091900	MW-37_031000	MW-37_082899	MW-37_032299	MW-43(C)-0308	MW-43(C)-0907FB	MW-43(C)	MW-43_1103	MW-43_0303	MW-43_092302	MW-43_090502	MW-43_032502	MW-43_072501	MW-43_033001	MW-43_091900	MW-43_031000
	Sample Date	09/19/2000	03/10/2000	08/28/1999	03/22/1999	03/24/2008	09/20/2007	09/20/2007	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001	03/30/2001	09/19/2000	03/10/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	**388**	**625**	**2,800**	**1,690**	--	--	250 U	50 U	50 U	--	50 U	50 U	50 U	50 U	**50**	**50**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**5,640**	**3,160**	**10,900**	**9,240**	--	--	250 U	250 U	250 U	--	250 U	250 U	**431**	**278**	**305**	**295**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	500 U	--	--	--	--	--	--	--	--	--
Oil	500	**996**	**752**	--	--	--	--	--	250 U	250 U	--	250 U	750 U	500 U	750 U	**250**	**250**
Volatile Organics (µg/L)																	
Benzene	2.4	--	--	--	**1.14**	--	--	1 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**
Toluene	7,300	**0.81**	--	**1.06**	**1.2**	--	--	1 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**
Ethylbenzene	2,100	--	--	--	--	--	--	1 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**
m,p-Xylene	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	--	--	--	**0.208**	--	--	--	0.5 U	1.5 U	--	1 U	1 U	1 U	1 U	**1.5**	**1.5**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	50 U	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	**12**	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	**9**	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	**20**	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--	--	--	--
Arsenic	5	--	--	--	--	50 U	--	--	10 U	**24**	**18**	--	--	--	--	--	--
Barium	--	--	--	--	--	**22**	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	5 U	0.94 U	10 U	--	--	--	--	--	--
Chromium	260	--	--	--	--	**37**	--	--	**6.6**	**33**	**95.4**	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	11 U	--	--	**2.7**	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	**7**	--	--	10 U	**3.6**	**4.6**	--	--	--	--	--	--
Lead	8.1	--	--	--	--	20 U	1 U	--	20 U	**3.2**	8.9 U	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	0.1 U	--	--	0.16 U	0.079 U	0.079 U	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	10 U	--	--	10 U	1.9 U	1.9 U	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	10 U	4.8 U	4.8 U	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	5 U	1.4 U	1.4 U	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--	--	--	--
Zinc	81	--	--	--	--	**80**	--	--	**8.9**	**52**	**32.4**	--	--	--	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	**116,000**	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	**7,890**	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	**8,710**	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	**13,700**	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	**340**	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	**20,200**	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	**60,600**	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area		MW-37(C)			MW-43(C)											
	Location ID	**MW-37(C)**	**MW-37(C)**	**MW-37(C)**	**MW-37(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**	**MW-43(C)**
	Sample ID	**MW-37_091900**	**MW-37_031000**	**MW-37_082899**	**MW-37_032299**	**MW-43(C)-0308**	**MW-43(C)-0907FB**	**MW-43(C)**	**MW-43_1103**	**MW-43_0303**	**MW-43_092302**	**MW-43_090502**	**MW-43_032502**	**MW-43_072501**	**MW-43_033001**	**MW-43_091900**	**MW-43_031000**
	Sample Date	**09/19/2000**	**03/10/2000**	**08/28/1999**	**03/22/1999**	**03/24/2008**	**09/20/2007**	**09/20/2007**	**11/03/2003**	**03/25/2003**	**09/23/2002**	**09/05/2002**	**03/25/2002**	**07/25/2001**	**03/30/2001**	**09/19/2000**	**03/10/2000**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Anthracene	9.6	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Chrysene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Fluorene	3	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	0.1 U	1 U	0.01 U	**0.02**	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	0.1 U	--	0.01 U	**0.01**	--	--	--	--	--	--
Pyrene	15	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	--	--	--	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	MW-43(C)									MW-50(C)				MW-		
	Location ID	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)
	Sample ID	MW-43_082899	MW-43_032299	MW-43_091898	MW-43_091097	MW-43_061797	MW-43_0398	MW-43_1196	MW-43_110795	MW-43_030295	MW-50_1103	MW-50_0303	MW-50_092302	MW-50_072601	MW-50_033001	MW-50_091900	MW-50_031000
	Sample Date	08/28/1999	03/22/1999	09/18/1998	09/10/1997	06/17/1997	03/17/1998	11/07/1996	11/07/1995	03/02/1995	11/03/2003	03/25/2003	09/23/2002	07/26/2001	03/30/2001	09/19/2000	03/10/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	**50**	**50**	**50**	**50**	**50**	**50**	**50**	--	--	**11,000**	**14,000**	**16,000**	**11,800**	**15,200**	**18,400**	**16,900**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**357**	**348**	**316**	**1,130**	**250**	**250**	**287**	**287**	**650**	**4,100**	**900**	**7,500**	**801**	**1,670**	**1,490**	**2,380**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	**250**	**250**	--	**250**	**274**	**250**	**250**	--	--	**320**	**920**	**950**	500 U	750 U	--	--
Volatile Organics (µg/L)																	
Benzene	2.4	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	**7**	20 U	20 U	**21.1**	10 U	--	**26.6**
Toluene	7,300	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	**11**	**9.8**	**11**	**13.9**	**15.5**	--	--
Ethylbenzene	2,100	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	--	**460**	**630**	**840**	**766**	**840**	**938**	**980**
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	--	--	**880**	**1,500**	**2,300**	**2,010**	**2,120**	**2,600**	**2,420**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	10 U	**17**	**14.3**	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	5 U	0.94 U	10 U	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	5 U	**49**	**38.3**	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	10 U	**28**	**22**	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	20 U	**15**	**11.5**	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	0.16 U	0.079 U	0.079 U	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	10 U	**14**	**20.5**	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	10 U	4.8 U	4.8 U	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	5 U	1.4 U	1.4 U	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	20 U	**67**	**43.5**	--	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	MW-43(C)									MW-50(C)				MW-		
	Location ID	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-43(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)	MW-50(C)
	Sample ID	MW-43_082899	MW-43_032299	MW-43_091898	MW-43_091097	MW-43_061797	MW-43_0398	MW-43_1196	MW-43_110795	MW-43_030295	MW-50_1103	MW-50_0303	MW-50_092302	MW-50_072601	MW-50_033001	MW-50_091900	MW-50_031000
	Sample Date	08/28/1999	03/22/1999	09/18/1998	09/10/1997	06/17/1997	03/17/1998	11/07/1996	11/07/1995	03/02/1995	11/03/2003	03/25/2003	09/23/2002	07/26/2001	03/30/2001	09/19/2000	03/10/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	--	5 U	--	**0.5**	**0.5**	0.1 U	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	5 U	--	**0.1**	0.01 U	0.1 U	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	--	5 U	--	**0.02**	**0.03**	0.1 U	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	**0.01**	**0.02**	0.1 U	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	--	0.1 U	--	**0.02**	**0.02**	0.1 U	--	--	--
Fluorene	3	--	--	--	--	--	--	--	--	5 U	--	**1**	**1**	0.1 U	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	--	0.1 U	--	0.01 U	0.01 U	0.1 U	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	5 U	**310**	**210**	**430**	**324**	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	5 U	--	**0.6**	**1**	**1**	--	--	--
Pyrene	15	--	--	--	--	--	--	--	--	0.5 U	--	**0.03**	**0.04**	0.1 U	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	--	0.1 U	--	**0.01**	**0.0077**	0.1 U	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	50(C)			MW-51(C)								MW-51(C)				
	Location ID	MW-50(C)	MW-50(C)	MW-50(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-52(C)	MW-52(C)
	Sample ID	MW-50_082899	MW-50_032299	MW-50_102598	MW-51(C)-0907	MW-51(C)-0907FB	MW-51_1103	MW-51_092302	MW-51_091901	MW-51_072601	MW-51_72601	MW-51_031000	MW-51_082899	MW-51_032299	MW-51_102598	MW-52_1103	MW-52_0303
	Sample Date	08/28/1999	03/22/1999	10/25/1998	09/19/2007	09/19/2007	11/03/2003	09/23/2002	09/19/2001	07/26/2001	07/26/2001	03/10/2000	08/28/1999	03/22/1999	10/25/1998	11/03/2003	03/25/2003
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	15,200	29,300	1,220	10,000	--	10,000	9,600	--	--	6,310	7,980	9,810	9,130	3,270	50 U	50 U
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	1,430	1,210	838	430	--	500	4,500	2,300	--	--	3,030	2,730	2,030	1,500	50	450
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	--	--	--	--	--	1,700	510	500 U	--	--	--	--	--	--	250 U	250 U
Volatile Organics (µg/L)																	
Benzene	2.4	--	31.8	2.77	14	--	89	60	--	--	929	189	253	123.6	23.2	0.5 U	0.5 U
Toluene	7,300	25.6	29	2.83	24	--	71	78	--	--	101	131	143	101	26.8	0.5 U	0.5 U
Ethylbenzene	2,100	941	1,180	44.5	860	--	1,300	1,100	--	806	--	1,030	1,140	582	140	0.5 U	0.5 U
m,p-Xylene	--	--	--	--	140	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	2,370	3,410	109	--	--	260	410	--	--	365	560	655	463	125	0.5 U	1.5 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	20 U	9.9 U	--	--	--	--	--	--	--	20 U	9.9 U
Arsenic	5	--	--	--	--	--	10 U	4.9 U	--	--	--	--	--	--	--	10 U	13
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	5 U	0.5 U	--	--	--	--	--	--	--	5 U	0.5 U
Cadmium	8.8	--	--	--	--	--	13.1	55.9	--	--	--	--	--	--	--	5 U	0.94 U
Chromium	260	--	--	--	--	--	5 U	18.8	--	--	--	--	--	--	--	5 U	4.9
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	10 U	83.7	--	--	--	--	--	--	--	10 U	21
Lead	8.1	--	--	--	--	6.86	20 U	11.9	--	--	--	--	--	--	--	20 U	5.7
Mercury	0.059	--	--	--	--	--	0.16 U	0.079 U	--	--	--	--	--	--	--	0.16 U	0.079 U
Nickel	8.2	--	--	--	--	--	10 U	1.9 U	--	--	--	--	--	--	--	10 U	3.5
Selenium	71	--	--	--	--	--	10 U	4.8 U	--	--	--	--	--	--	--	10 U	4.8 U
Silver	1,900	--	--	--	--	--	5 U	1.4 U	--	--	--	--	--	--	--	5 U	1.4 U
Thallium	--	--	--	--	--	--	20 U	9.5 U	--	--	--	--	--	--	--	20 U	9.5 U
Zinc	81	--	--	--	--	--	81.7	169	--	--	--	--	--	--	--	20 U	64
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	165,000	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	5,620	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	3,900	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	7,320	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	102	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	10,400	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	55,800	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	50(C)			MW-51(C)								MW-51(C)				
	Location ID	MW-50(C)	MW-50(C)	MW-50(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-51(C)	MW-52(C)	MW-52(C)
	Sample ID	MW-50_082899	MW-50_032299	MW-50_102598	MW-51(C)-0907	MW-51(C)-0907FB	MW-51_1103	MW-51_092302	MW-51_091901	MW-51_072601	MW-51_72601	MW-51_031000	MW-51_082899	MW-51_032299	MW-51_102598	MW-52_1103	MW-52_0303
	Sample Date	08/28/1999	03/22/1999	10/25/1998	09/19/2007	09/19/2007	11/03/2003	09/23/2002	09/19/2001	07/26/2001	07/26/2001	03/10/2000	08/28/1999	03/22/1999	10/25/1998	11/03/2003	03/25/2003
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	**65**	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	**0.61**	--	--	**1**	--	--	**1.4**	--	--	--	--	--	0.01 U
Acenaphthylene	--	--	--	--	0.11 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Anthracene	9.6	--	--	--	0.1 U	--	--	**0.06**	--	--	0.1 U	--	--	--	--	--	**0.02**
Benzo(a)anthracene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Benzo(a)pyrene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Benzo(b)fluoranthene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Benzo(g,h,i)perylene	--	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Benzo(k)fluoranthene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Chrysene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Dibenzo(a,h)anthracene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Dibenzofuran	--	--	--	--	**0.95**	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	0.1 U	--	--	**0.01**	--	--	0.1 U	--	--	--	--	--	0.01 U
Fluorene	3	--	--	--	**1.7**	--	--	**4**	--	--	0.1 U	--	--	--	--	--	0.01 U
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Naphthalene	83	--	--	--	**210**	--	**380**	**470**	--	--	**261**	--	--	--	--	1 U	**0.03**
Phenanthrene	--	--	--	--	**1.8**	--	--	**3**	--	--	**2.98**	--	--	--	--	--	**0.01**
Pyrene	15	--	--	--	0.1 U	--	--	**0.06**	--	--	0.1 U	--	--	--	--	--	0.01 U
Total cPAH TEQ	0.02	--	--	--	0.1 U	--	--	0.01 U	--	--	0.1 U	--	--	--	--	--	0.01 U
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-52(C)								MW-53(C)	MW-53(C)						
	Location ID	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)
	Sample ID	MW-52_092302	MW-52_072601	MW-52_033001	MW-52_091900	MW-52_031000	MW-52_082899	MW-52_032299	MW-52_102598	MW-53(C)-0907	MW-53(C)-0907FB	MW-53_1103	MW-53_0303	MW-53_092302	MW-53_090502	MW-53_032502	MW-53_072501
	Sample Date	09/23/2002	07/26/2001	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	09/21/2007	09/21/2007	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	**720**	**1,760**	**149**	**2,380**	**1,910**	**4,180**	**2,660**	**2,360**	250 U	--	50 U	50 U	--	**79**	50 U	50 U
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**820**	**339**	**830**	**1,390**	**1,630**	**1,600**	**1,850**	**1,030**	250 U	--	250 U	250 U	--	**5,500**	250 U	**570**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	500 U	--	--	--	--	--	--	--
Oil	500	**310**	500 U	750 U	--	--	--	--	--	--	--	250 U	250 U	--	**340**	750 U	500 U
Volatile Organics (µg/L)																	
Benzene	2.4	5 U	**4.94**	**0.672**	--	**2.17**	--	**71.4**	**2.11**	1 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Toluene	7,300	**0.82**	**1.33**	0.5 U	--	--	--	**2.4**	**1.59**	1 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
Ethylbenzene	2,100	**2.9**	**12.4**	**1.16**	**19.1**	**41.7**	**48.7**	**47.2**	**35.7**	1 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	1.5 U	**3.56**	1 U	**4.45**	**9**	**11.2**	**11.1**	**9.64**	--	--	0.5 U	1.5 U	--	1.5 U	1.5 U	1 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	9.9 U	--	--	--	--	--	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--
Arsenic	5	**18.4**	--	--	--	--	--	--	--	--	--	10 U	**43**	**33.6**	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	0.5 U	--	--	--	--	--	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--
Cadmium	8.8	10 U	--	--	--	--	--	--	--	--	--	5 U	0.94 U	10 U	--	--	--
Chromium	260	**3.6**	--	--	--	--	--	--	--	--	--	**5.4**	**86**	**75.3**	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	1.2 U	--	--	--	--	--
Copper	3.1	**25.1**	--	--	--	--	--	--	--	--	--	10 U	**22**	**10.5**	--	--	--
Lead	8.1	8.9 U	--	--	--	--	--	--	--	--	**1.42**	20 U	**2.8**	8.9 U	--	--	--
Mercury	0.059	0.079 U	--	--	--	--	--	--	--	--	--	0.16 U	**0.081**	**0.087**	--	--	--
Nickel	8.2	**3.1**	--	--	--	--	--	--	--	--	--	10 U	1.9 U	1.9 U	--	--	--
Selenium	71	4.8 U	--	--	--	--	--	--	--	--	--	10 U	4.8 U	4.8 U	--	--	--
Silver	1,900	1.4 U	--	--	--	--	--	--	--	--	--	5 U	1.4 U	1.4 U	--	--	--
Thallium	--	9.5 U	--	--	--	--	--	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--
Zinc	81	**55.1**	--	--	--	--	--	--	--	--	--	**46.7**	**34**	**10.3**	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	**505,000**	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	**6,800**	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	**6,600**	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	**52,800**	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	**1,410**	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	**28,000**	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	**200,000**	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	MW-52(C)								MW-53(C)	MW-53(C)						
	Location ID	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-52(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)
	Sample ID	MW-52_092302	MW-52_072601	MW-52_033001	MW-52_091900	MW-52_031000	MW-52_082899	MW-52_032299	MW-52_102598	MW-53(C)-0907	MW-53(C)-0907FB	MW-53_1103	MW-53_0303	MW-53_092302	MW-53_090502	MW-53_032502	MW-53_072501
	Sample Date	09/23/2002	07/26/2001	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	09/21/2007	09/21/2007	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	**Screening Level**																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Acenaphthene	3.3	**0.08**	0.1 U	--	--	--	--	--	--	0.1 U	--	--	**0.01**	**0.03**	--	--	--
Acenaphthylene	--	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Anthracene	9.6	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Benzo(a)anthracene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Benzo(a)pyrene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Benzo(b)fluoranthene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Benzo(g,h,i)perylene	--	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Benzo(k)fluoranthene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Chrysene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Dibenzo(a,h)anthracene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--
Fluoranthene	3.3	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Fluorene	3	**0.1**	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Naphthalene	83	**0.1**	0.1 U	--	--	--	--	--	--	0.1 U	--	1 U	0.01 U	**0.06**	--	--	--
Phenanthrene	--	**0.01**	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	**0.02**	--	--	--
Pyrene	15	**0.02**	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Total cPAH TEQ	0.02	0.01 U	0.1 U	--	--	--	--	--	--	0.1 U	--	--	0.01 U	0.01 U	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area Location ID Sample ID Sample Date Sample Type Screening Level						MW-54(C)		MW-54(C)								
Location ID		MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-55(C)	MW-55(C)	MW-55(C)
Sample ID		MW-53_091900	MW-53_031000	MW-53_082899	MW-53_032299	MW-53_102598	MW-54(C)-0308	MW-54(C)-0907	MW-54_092302	MW-54_072501	MW-54_091900	MW-54_082899	MW-54_032299	MW-54_102598	MW-55_092302	MW-55_0902	MW-55_0302
Sample Date		09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	03/27/2008	09/21/2007	09/23/2002	07/25/2001	09/19/2000	08/28/1999	03/22/1999	10/25/1998	09/23/2002	09/05/2002	03/25/2002
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	**50**	**50**	**50**	**50**	**50**	250 U	250 U	50 U	50 U	**50**	**50**	**50**	**50**	50 U	50 U	50 U
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**406**	**395**	**394**	**458**	**543**	250 U	250 U	250 U	**1,260**	**822**	**1,850**	**2,150**	**367**	**270**	**270**	250 U
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	500 U	500 U	--	--	--	--	--	--	--	--	--
Oil	500	**250**	**250**	**250**	**250**	**250**	--	--	250 U	500 U	**250**	**250**	**250**	**250**	250 U	250 U	750 U
Volatile Organics (µg/L)																	
Benzene	2.4	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	1 U	1 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	0.5 U	0.5 U	0.5 U
Toluene	7,300	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	1 U	1 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	0.5 U	0.5 U	0.5 U
Ethylbenzene	2,100	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	1 U	1 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	0.5 U	0.5 U	0.5 U
m,p-Xylene	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	--	--	1.5 U	1 U	**1.5**	**1.5**	**1.5**	**1.5**	1.5 U	1.5 U	1.5 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	**150**	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	**57**	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	**21**	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	9.9 U	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	**160**	--	**127**	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	**60**	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	**38**	--	**335**	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	12 U	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	**10**	--	**14.2**	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	20 U	--	**9.7**	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	0.1 U	--	**0.091**	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	10 U	--	**10.1**	--	--	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	--	4.8 U	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	1.4 U	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	9.5 U	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	10 U	--	**48.5**	--	--	--	--	--	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	**220,000**	**324,000**	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	**26,200**	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	**26,600**	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	**26,100**	**53,400**	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	**1,560**	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	**25,800**	**47,000**	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	**235,000**	**210,000**	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area						MW-54(C)		MW-54(C)								
	Location ID	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-53(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-54(C)	MW-55(C)	MW-55(C)	MW-55(C)
	Sample ID	MW-53_091900	MW-53_031000	MW-53_082899	MW-53_032299	MW-53_102598	MW-54(C)-0308	MW-54(C)-0907	MW-54_092302	MW-54_072501	MW-54_091900	MW-54_082899	MW-54_032299	MW-54_102598	MW-55_092302	MW-55_0902	MW-55_0302
	Sample Date	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	03/27/2008	09/21/2007	09/23/2002	07/25/2001	09/19/2000	08/28/1999	03/22/1999	10/25/1998	09/23/2002	09/05/2002	03/25/2002
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	0.1 U	0.1 U	**0.08**	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Anthracene	9.6	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Chrysene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	0.1 U	0.1 U	**0.01**	--	--	--	--	--	--	--	--
Fluorene	3	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	0.1 U	0.1 U	**0.02**	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	0.1 U	0.1 U	**0.01**	--	--	--	--	--	--	--	--
Pyrene	15	--	--	--	--	--	0.1 U	0.1 U	**0.02**	--	--	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	0.1 U	0.1 U	0.01 U	--	--	--	--	--	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-55(C)					MW-55(C)										MW-56(C)
	Location ID	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-55(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)
	Sample ID	MW-55_091901	MW-55_072601	MW-55_033001	MW-55_0900	MW-55_031000	MW-55-C-81099	MW-55-C-81099D	MW-55-C-41499	MW-55-C-21099	MW-55_102598	MW-55_082899	MW-55_032299	MW-56(C)-0907	MW-56_0303	MW-56_092302	MW-56_090502
	Sample Date	09/19/2001	07/26/2001	03/30/2001	09/19/2000	03/10/2000	08/10/1999	08/10/1999	04/14/1999	02/10/1999	10/25/1998	08/28/1999	03/22/1999	09/21/2007	03/25/2003	09/23/2002	09/05/2002
	Sample Type	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	50 U	50 U	50 U	**50**	**50**	--	--	--	--	**50**	**50**	**50**	250 U	50 U	--	50 U
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	250 U	**911**	**550**	**250**	**422**	**260**	**260**	**300**	**260**	**443**	**310**	**948**	250 U	250 U	--	**3,300**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	500 U	--	--	--
Oil	500	750 U	500 U	750 U	**250**	**250**	--	--	--	--	**250**	**250**	**812**	--	250 U	--	**810**
Volatile Organics (µg/L)																	
Benzene	2.4	0.5 U	0.5 U	**0.622**	**0.5**	**0.5**	--	--	--	1 U	**0.5**	**0.5**	**0.5**	1 U	0.5 U	--	0.5 U
Toluene	7,300	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	--	--	--	1 U	**0.5**	**0.5**	**0.5**	1 U	0.5 U	--	0.5 U
Ethylbenzene	2,100	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	--	--	--	1 U	**0.5**	**0.5**	**0.5**	1 U	0.5 U	--	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	1 U	--	--	--	1 U	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	1 U	--	--	--	1 U	--	--	--
Total xylene (reported, not calculated)	--	1.5 U	1 U	1 U	**1.5**	**1.5**	--	--	--	--	**1.5**	**1.5**	**1.5**	--	1.5 U	--	1.5 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9 U	9.9 U	--
Arsenic	5	--	--	--	--	--	**46**	**46**	**21**	**19**	--	--	--	--	**30**	**28.4**	--
Barium	--	--	--	--	--	--	**47**	**45**	**37**	**34**	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	0.5 U	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	0.94 U	10 U	--
Chromium	260	--	--	--	--	--	**57**	**52**	**48**	**42**	--	--	--	--	**57**	**127**	--
Chromium VI	50	--	--	--	--	--	10 U	10 U	**20**	100 U	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	2 U	2 U	2 U	2 U	--	--	--	--	**14**	**27.3**	--
Lead	8.1	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	--	**5.9**	**14.2**	--
Mercury	0.059	--	--	--	--	--	0.1 U	0.1 U	0.2 U	0.1 U	--	--	--	--	0.079 U	**0.098**	--
Nickel	8.2	--	--	--	--	--	10 U	10 U	10 U	10 U	--	--	--	--	**16**	**29.3**	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 U	4.8 U	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4 U	1.4 U	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.5 U	9.5 U	--
Zinc	81	--	--	--	--	--	**8**	**7**	**8**	**19**	--	--	--	--	**50**	**141**	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	**158,000**	**154,000**	**166,000**	**155,000**	--	--	--	**168,000**	--	--	--
Ferrous iron	--	--	--	--	--	--	**24,000**	**24,000**	**27,000**	**12,000**	--	--	--	**5,400**	--	--	--
Iron	--	--	--	--	--	--	**23,100**	**22,700**	**27,000**	**24,700**	--	--	--	**5,580**	--	--	--
Magnesium	--	--	--	--	--	--	**15,400**	**15,500**	**18,900**	**19,200**	--	--	--	**15,100**	--	--	--
Manganese	100	--	--	--	--	--	**3,020**	**2,800**	**3,660**	**3,540**	--	--	--	**364**	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	**23,400**	--	--	--
Sodium	--	--	--	--	--	--	**32,500**	**33,300**	--	--	--	--	--	**95,100**	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-55(C)					MW-55(C)							MW-56(C)			
	Location ID	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-55(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**	**MW-56(C)**
	Sample ID	**MW-55_091901**	**MW-55_072601**	**MW-55_033001**	**MW-55_0900**	**MW-55_031000**	**MW-55-C-81099**	**MW-55-C-81099D**	**MW-55-C-41499**	**MW-55-C-21099**	**MW-55_102598**	**MW-55_082899**	**MW-55_032299**	**MW-56(C)-0907**	**MW-56_0303**	**MW-56_092302**	**MW-56_090502**
	Sample Date	**09/19/2001**	**07/26/2001**	**03/30/2001**	**09/19/2000**	**03/10/2000**	**08/10/1999**	**08/10/1999**	**04/14/1999**	**02/10/1999**	**10/25/1998**	**08/28/1999**	**03/22/1999**	**09/21/2007**	**03/25/2003**	**09/23/2002**	**09/05/2002**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**FD**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**																
Polycyclic Aromatic Hydrocarbons (μg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	--	--	--
Acenaphthene	3.3	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Acenaphthylene	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Anthracene	9.6	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Benzo(a)anthracene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Benzo(a)pyrene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Chrysene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--
Fluoranthene	3.3	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Fluorene	3	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Naphthalene	83	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	**0.01**	0.01 U	--
Phenanthrene	--	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	**0.01**	0.01 U	--
Pyrene	15	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Total cPAH TEQ	0.02	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	0.1 U	0.01 U	0.01 U	--
Semivolatile Organics (μg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area				MW-56(C)					MW-57(C)		MW-58(C)					
	Location ID	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-57(C)	MW-57(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)
	Sample ID	MW-56_032502	MW-56_072501	MW-56_033001	MW-56_0900	MW-56_031000	MW-56_082899	MW-56_032299	MW-56_102598	MW-57_031000	MW-57_102598	MW-58_1103	MW-58_0303	MW-58_092302	MW-58_090502	MW-58_032502	MW-58_072501
	Sample Date	03/25/2002	07/25/2001	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	03/10/2000	10/25/1998	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	50 U	50 U	50 U	**50**	**50**	**50**	**50**	**50**	**10,600**	**6,360**	--	**780**	--	**330**	**550**	**181**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	250 U	**727**	**390**	**250**	**301**	**633**	**446**	**881**	**27,400,000**	**3,570**	**1,800**	**1,900**	--	**1,700**	**2,200**	**3,900**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	750 U	500 U	750 U	**250**	**250**	**250**	**250**	**250**	--	--	250 U	250 U	--	**420**	750 U	**722**
Volatile Organics (µg/L)																	
Benzene	2.4	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**5.52**	**11.5**	--	2 U	--	0.5 U	**1.4**	**0.647**
Toluene	7,300	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	--	**1.96**	--	**1.4**	--	**0.56**	**1.4**	**0.596**
Ethylbenzene	2,100	0.5 U	0.5 U	0.5 U	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**8.8**	**40.5**	--	0.5 U	--	0.5 U	**0.81**	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	1.5 U	1 U	1 U	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	--	**10.4**	--	**1.9**	--	1.5 U	**1.7**	**1.5**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	10 U	**6**	**6.9**	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	5 U	0.94 U	10 U	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	**11.5**	**42**	**65.8**	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	1.2 U	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	10 U	**3.8**	2.6 U	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	20 U	**1.4**	8.9 U	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	0.16 U	0.079 U	0.079 U	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	10 U	**4.4**	1.9 U	--	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	10 U	**6**	4.8 U	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	5 U	1.4 U	1.4 U	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	**24.8**	**14**	49 U	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area				MW-56(C)					MW-57(C)		MW-58(C)					
	Location ID	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-56(C)	MW-57(C)	MW-57(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)
	Sample ID	MW-56_032502	MW-56_072501	MW-56_033001	MW-56_0900	MW-56_031000	MW-56_082899	MW-56_032299	MW-56_102598	MW-57_031000	MW-57_102598	MW-58_1103	MW-58_0303	MW-58_092302	MW-58_090502	MW-58_032502	MW-58_072501
	Sample Date	03/25/2002	07/25/2001	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	03/10/2000	10/25/1998	11/03/2003	03/25/2003	09/23/2002	09/05/2002	03/25/2002	07/25/2001
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**0.2**	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	**0.04**	0.01 U	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**0.01**	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Fluorene	3	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**0.02**	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	**0.4**	**0.2**	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**0.03**	--	--	--
Pyrene	15	--	--	--	--	--	--	--	--	--	--	--	**0.1**	0.01 U	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	--	--	--	--	**0.2**	0.01 U	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area		MW-58(C)					MW-59(C)									MW-
	Location ID	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)
	Sample ID	MW-58_033001	MW-58_091900	MW-58_031000	MW-58_082899	MW-58_032299	MW-58_102598	MW-59_1103	MW-59_0303	MW-59_092302	MW-59_072601	MW-59_033001	MW-59_0900	MW-59_091900	MW-59_031000	MW-59_082899	MW-59_032299
	Sample Date	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	11/03/2003	03/25/2003	09/23/2002	07/26/2001	03/30/2001	09/19/2000	09/19/2000	03/10/2000	08/28/1999	03/22/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	**281**	**246**	**264**	**273**	**158**	**50**	50 U	50 U	50 U	50 U	50 U	--	**50**	**50**	**50**	**50**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**2,100**	**1,440**	**2,390**	**2,240**	**2,320**	**1,160**	250 U	250 U	250 U	250 U	**403**	**1,070**	**1,070**	**315**	**542**	**599**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	750 U	--	--	--	--	**250**	250 U	250 U	250 U	500 U	750 U	**968**	**968**	**250**	**250**	**250**
Volatile Organics (µg/L)																	
Benzene	2.4	**1.28**	--	--	**0.974**	**0.644**	**0.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	**0.5**	**0.5**	**0.5**	**0.5**
Toluene	7,300	**0.574**	--	--	--	--	**0.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	**0.5**	**0.5**	**0.5**	**0.5**
Ethylbenzene	2,100	0.5 U	--	--	--	--	**0.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	**0.5**	**0.5**	**0.5**	**0.5**
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	**1.41**	**1.72**	**1.85**	--	**1.08**	**1.5**	0.5 U	1.5 U	1.5 U	1 U	1 U	--	**1.5**	**1.5**	**1.5**	**1.5**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	--	--	20 U	9.9 U	9.9 U	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	10 U	4.9 U	4.9 U	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	5 U	0.5 U	0.5 U	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	5 U	0.94 U	10 U	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	5 U	**12**	**26.5**	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	**1.2**	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	10 U	**7.6**	**3.6**	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	20 U	**1.9**	8.9 U	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	0.16 U	0.079 U	0.079 U	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	10 U	**2.8**	1.9 U	--	--	--	--	--	--	--
Selenium	71	--	--	--	--	--	--	10 U	4.8 U	4.8 U	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	5 U	1.4 U	1.4 U	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	20 U	9.5 U	9.5 U	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	4.1 U	**13**	**6**	--	--	--	--	--	--	--
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area		MW-58(C)					MW-59(C)									MW-
	Location ID	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-58(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)	MW-59(C)
	Sample ID	MW-58_033001	MW-58_091900	MW-58_031000	MW-58_082899	MW-58_032299	MW-58_102598	MW-59_1103	MW-59_0303	MW-59_092302	MW-59_072601	MW-59_033001	MW-59_0900	MW-59_091900	MW-59_031000	MW-59_082899	MW-59_032299
	Sample Date	03/30/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	11/03/2003	03/25/2003	09/23/2002	07/26/2001	03/30/2001	09/19/2000	09/19/2000	03/10/2000	08/28/1999	03/22/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Anthracene	9.6	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	**0.03**	0.01 U	0.1 U	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Chrysene	0.02	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Fluorene	3	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	1 U	**0.02**	0.01 U	0.1 U	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Pyrene	15	--	--	--	--	--	--	--	0.01 U	0.01 U	0.1 U	--	--	--	--	--	--
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	**0.01**	0.01 U	0.1 U	--	--	--	--	--	--
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	59(C)	MW-60(C)				MW-61(C)							MW-62(C)		
	Location ID	MW-59(C)	MW-60(C)	MW-60(C)	MW-60(C)	MW-60(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-62(C)	MW-62(C)	MW-62(C)
	Sample ID	MW-59_102598	MW-60(C)-0907	MW-60(C)-0907FB	MW-60_031000	MW-60_102598	MW-61_090502	MW-61_072501	MW-61_091900	MW-61_031000	MW-61_082899	MW-61_032299	MW-61_102598	MW-62_092302	MW-62_072501	MW-62_091900
	Sample Date	10/25/1998	09/24/2007	09/24/2007	03/10/2000	10/25/1998	09/05/2002	07/25/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	09/23/2002	07/25/2001	09/19/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level															
Total Petroleum Hydrocarbons (µg/L)																
Gasoline range hydrocarbons	800	50	930	--	54.8	62.9	50 U	166	153	294	279	502	266	50 U	93.1	89.3
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	388	250 U	--	1,420	1,420	2,300	6,960	2,360	2,030	3,060	3,210	3,120	2,700	11,300	2,240
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	250	--	--	--	250	1,600	1,180	250	250	250	850	250	1,600	1,580	250
Volatile Organics (µg/L)																
Benzene	2.4	0.5	1 U	--	0.5	0.5	0.5 U	0.645	0.52	0.52	0.52	0.52	0.5	0.5 U	0.5 U	0.5
Toluene	7,300	0.5	1 U	--	0.5	0.5	0.5 U	0.5 U	0.5	0.52	0.52	0.52	0.55	0.5 U	0.5 U	0.5
Ethylbenzene	2,100	0.5	1 U	--	0.5	1.16	0.5 U	0.5 U	0.52	0.5	0.52	0.52	0.5	0.5 U	0.5 U	0.5
m,p-Xylene	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	1.5	--	--	1.5	1.55	1.5 U	1.31	1.52	1.52	1.52	1.52	1.55	1.5 U	1 U	1.52
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	9.9 U	--	--
Arsenic	5	--	50 U	--	--	--	--	--	--	--	--	--	--	4.9 U	--	--
Barium	--	--	8	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--
Chromium	260	--	13	--	--	--	--	--	--	--	--	--	--	22.4	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	2 U	--	--	--	--	--	--	--	--	--	--	16.4	--	--
Lead	8.1	--	20 U	1 U	--	--	--	--	--	--	--	--	--	8.9 U	--	--
Mercury	0.059	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.079 U	--	--
Nickel	8.2	--	10 U	--	--	--	--	--	--	--	--	--	--	6.1	--	--
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	4.8 U	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	1.4 U	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	9.5 U	--	--
Zinc	81	--	10 U	--	--	--	--	--	--	--	--	--	--	78.2	--	--
Conventional Parameters (µg/L)																
Calcium	--	--	128,000	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	207	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	290	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	9,430	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	65	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	9,200	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	31,200	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level	59(C)	MW-60(C)				MW-61(C)							MW-62(C)		
	Location ID	MW-59(C)	MW-60(C)	MW-60(C)	MW-60(C)	MW-60(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-61(C)	MW-62(C)	MW-62(C)	MW-62(C)
	Sample ID	MW-59_102598	MW-60(C)-0907	MW-60(C)-0907FB	MW-60_031000	MW-60_102598	MW-61_090502	MW-61_072501	MW-61_091900	MW-61_031000	MW-61_082899	MW-61_032299	MW-61_102598	MW-62_092302	MW-62_072501	MW-62_091900
	Sample Date	10/25/1998	09/24/2007	09/24/2007	03/10/2000	10/25/1998	09/05/2002	07/25/2001	09/19/2000	03/10/2000	08/28/1999	03/22/1999	10/25/1998	09/23/2002	07/25/2001	09/19/2000
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	**Screening Level**															
Polycyclic Aromatic Hydrocarbons (µg/L)																
1-Methylnaphthalene	--	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	**0.14**	--	--	--	--	--	--	--	--	--	--	**0.08**	--	--
Acenaphthylene	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.01**	--	--
Anthracene	9.6	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.03**	--	--
Benzo(a)anthracene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.01**	--	--
Benzo(a)pyrene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Benzo(b)fluoranthene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Benzo(g,h,i)perylene	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Benzo(k)fluoranthene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Chrysene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.02**	--	--
Dibenzo(a,h)anthracene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Dibenzofuran	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.02**	--	--
Fluorene	3	--	**0.18**	--	--	--	--	--	--	--	--	--	--	**0.03**	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Naphthalene	83	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.04**	--	--
Phenanthrene	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.01 U	--	--
Pyrene	15	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.04**	--	--
Total cPAH TEQ	0.02	--	0.1 U	--	--	--	--	--	--	--	--	--	--	**0.0082**	--	--
Semivolatile Organics (µg/L)																
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-62(C)				MW-63(C)			MW-64(C)			MW-65(C)		MW-65(C)			
	Location ID	MW-62(C)	MW-62(C)	MW-62(C)	MW-62(C)	MW-63(C)	MW-63(C)	MW-63(C)	MW-64(C)	MW-64(C)	MW-64(C)	MW-65(C)	MW-65(C)	MW-65(C)	MW-65(C)	MW-65(C)	MW-65(C)
	Sample ID	MW-62_031000	MW-62_082899	MW-62_032299	MW-62_102598	MW-63_1103	MW-63_0303	MW-63_092302	MW-64_1103	MW-64_0303	MW-64_092302	MW-65(C)-0308	MW-65(C)-0907	MW-65(C)-0907FB	MW-65_1103	MW-65_0303	MW-65_092302
	Sample Date	03/10/2000	08/28/1999	03/22/1999	10/25/1998	11/03/2003	03/25/2003	09/23/2002	11/03/2003	03/25/2003	09/23/2002	03/27/2008	09/27/2007	09/27/2007	11/03/2003	03/25/2003	09/23/2002
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Total Petroleum Hydrocarbons (µg/L)																	
Gasoline range hydrocarbons	800	185	228	502	111	50 U	50 U	50 U	50 U	50 U	99	250 U	250 U	--	50 U	50 U	140
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	3,270	3,710	5,360	3,300	16,000	990	520	1,900	200	6,000	250 U	250 U	--	400	2,200	8,700
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	500 U	500 U	--	--	--	--
Oil	500	250	816	1,510	250	30,000	2,000	760	2,100	2,100	2,300	--	--	--	1,100	1,200	2,500
Volatile Organics (µg/L)																	
Benzene	2.4	0.5	0.52	0.52	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	--	0.5 U	0.5 U	0.5 U
Toluene	7,300	0.5	0.52	3.89	0.55	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	--	0.5 U	0.5 U	0.5 U
Ethylbenzene	2,100	0.5	0.52	0.52	0.55	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	1 U	--	0.5 U	0.5 U	0.5 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
Total xylene (reported, not calculated)	--	1.52	1.52	11	1.55	0.5 U	1.5 U	1.5 U	0.5 U	1.5 U	1.5 U	--	--	--	0.5 U	1.5 U	1.5 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																	
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																	
Antimony	--	--	--	--	--	20 U	9.9 U	21.5	20 U	9.9 U	9.9 U	--	--	--	20 U	9.9 U	9.9 U
Arsenic	5	--	--	--	--	10 U	150	234	10 U	63	79.5	--	50 U	--	10 U	41	56.4
Barium	--	--	--	--	--	--	--	--	--	--	--	--	10	--	--	--	--
Beryllium	--	--	--	--	--	5 U	1.1	4.7	5 U	0.68	2.9	--	--	--	5 U	1.1	1.7
Cadmium	8.8	--	--	--	--	5 U	0.94 U	52.5	5 U	2.2	10 U	--	--	--	5 U	2.5	10 U
Chromium	260	--	--	--	--	5 U	150	545	5 U	91	304	--	6	--	5 U	62	220
Chromium VI	50	--	--	--	--	0.6 U	--	--	1.2 U	--	--	--	--	--	0.74	--	--
Copper	3.1	--	--	--	--	10 U	1,100	2,920	10 U	90	273	--	2 U	--	10 U	140	261
Lead	8.1	--	--	--	--	20 U	2,600	12,400	20 U	120	514	--	20 U	2.6	20 U	85	401
Mercury	0.059	--	--	--	--	0.16 U	0.4 U	3.4	0.16 U	0.17	0.44	--	0.1 U	--	0.16 U	0.21	0.44
Nickel	8.2	--	--	--	--	10 U	66	419	10 U	100	348	--	10 U	--	14	59	227
Selenium	71	--	--	--	--	10 U	9.1	4.8 U	10 U	4.8 U	9.3	--	--	--	10 U	4.8 U	11.6
Silver	1,900	--	--	--	--	5 U	11	80.8	5 U	1.4 U	2.4	--	--	--	5 U	1.4 U	6.2
Thallium	--	--	--	--	--	20 U	25	28.5	20 U	9.5 U	22	--	--	--	20 U	12	10.3
Zinc	81	--	--	--	--	91.7	2,200	11,400	4.1 U	290	658	--	10 U	--	123	670	1,320
Conventional Parameters (µg/L)																	
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	190,000	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	3,460	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	3,870	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	23,900	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	6	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	11,100	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	95,500	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	MW-62(C)				MW-63(C)			MW-64(C)			MW-65(C)		MW-65(C)			
	Location ID	MW-62(C)	MW-62(C)	MW-62(C)	MW-62(C)	MW-63(C)	MW-63(C)	MW-63(C)	MW-64(C)	MW-64(C)	MW-64(C)	MW-65(C)	MW-65(C)	MW-65(C)	MW-65(C)	MW-65(C)	MW-65(C)
	Sample ID	MW-62_031000	MW-62_082899	MW-62_032299	MW-62_102598	MW-63_1103	MW-63_0303	MW-63_092302	MW-64_1103	MW-64_0303	MW-64_092302	MW-65(C)-0308	MW-65(C)-0907	MW-65(C)-0907FB	MW-65_1103	MW-65_0303	MW-65_092302
	Sample Date	03/10/2000	08/28/1999	03/22/1999	10/25/1998	11/03/2003	03/25/2003	09/23/2002	11/03/2003	03/25/2003	09/23/2002	03/27/2008	09/27/2007	09/27/2007	11/03/2003	03/25/2003	09/23/2002
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																
Polycyclic Aromatic Hydrocarbons (µg/L)																	
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	**0.14**	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Acenaphthene	3.3	--	--	--	--	--	**0.04**	**0.2**	--	**0.03**	**0.2**	--	**0.61**	--	--	**0.3**	**0.8**
Acenaphthylene	--	--	--	--	--	--	**0.1**	**1**	--	**0.04**	**0.5**	--	0.1 U	--	--	**0.08**	**0.02**
Anthracene	9.6	--	--	--	--	--	**0.2**	**1**	--	**0.07**	**0.4**	--	0.1 U	--	--	**0.2**	0.01 U
Benzo(a)anthracene	0.02	--	--	--	--	**0.3**	**0.4**	**2**	--	**0.06**	**0.2**	--	0.1 U	--	--	**0.2**	**0.02**
Benzo(a)pyrene	0.02	--	--	--	--	**0.6**	**0.5**	**2**	--	**0.06**	**0.2**	--	0.1 U	--	--	**0.1**	0.01 U
Benzo(b)fluoranthene	0.02	--	--	--	--	**0.6**	**0.5**	**2**	--	**0.09**	**0.3**	--	0.1 U	--	--	**0.2**	0.01 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	**0.5**	**3**	--	**0.1**	**0.2**	--	0.1 U	--	--	**0.1**	**0.02**
Benzo(k)fluoranthene	0.02	--	--	--	--	**0.3**	**0.2**	**0.8**	--	**0.03**	**0.06**	--	0.1 U	--	--	**0.06**	0.01 U
Chrysene	0.02	--	--	--	--	**0.5**	**0.5**	**3**	--	**0.07**	**0.4**	--	0.1 U	--	--	**0.2**	**0.03**
Dibenzo(a,h)anthracene	0.02	--	--	--	--	**0.1**	**0.1**	**0.5**	--	**0.03**	**0.05**	--	0.1 U	--	--	**0.02**	0.01 U
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	0.1 U	--	--	--	--
Fluoranthene	3.3	--	--	--	--	--	**0.6**	**4**	--	**0.08**	**0.6**	--	0.1 U	--	--	**0.5**	**0.2**
Fluorene	3	--	--	--	--	--	**0.08**	**0.5**	--	**0.08**	**0.2**	--	0.1 U	--	--	**0.2**	**0.03**
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	**0.3**	**0.4**	**2**	--	**0.08**	**0.2**	--	0.1 U	--	--	**0.1**	0.01 U
Naphthalene	83	--	--	--	--	1 U	**0.4**	**3**	1 U	**0.09**	**1**	--	**0.13**	--	1 U	**0.2**	**0.1**
Phenanthrene	--	--	--	--	--	--	**0.5**	**3**	--	**0.1**	**0.3**	--	0.1 U	--	--	**0.2**	0.01 U
Pyrene	15	--	--	--	--	--	**1**	**8**	--	**0.1**	**0.9**	--	0.1 U	--	--	**0.8**	**0.2**
Total cPAH TEQ	0.02	--	--	--	--	**0.8**	**0.7**	**2.76**	--	**0.09**	**0.285**	--	0.1 U	--	--	**0.16**	**0.0093**
Semivolatile Organics (µg/L)																	
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	MW-66(C)			MW-67(C)		MW-68(C)		MW-69(C)			MW-70(C)						
	Location ID	MW-66(C)	MW-66(C)	MW-66(C)	MW-67(C)	MW-67(C)	MW-68(C)	MW-68(C)	MW-69(C)	MW-69(C)	MW-69(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)
	Sample ID	MW-66_1103	MW-66_0303	MW-66_092302	MW-67_0303	MW-67_092302	MW-68_0303	MW-68_092302	MW-69_1103	MW-69_0303	MW-69_092302	MW-70(C)-0308	MW-70_1103	MW-70_0303	MW-70_092302	MW-60_072601	MW-70_091900	MW-70_082899
	Sample Date	11/03/2003	03/25/2003	09/23/2002	03/25/2003	09/23/2002	03/25/2003	09/23/2002	11/03/2003	03/25/2003	09/23/2002	03/24/2008	11/03/2003	03/25/2003	09/23/2002	07/26/2001	09/19/2000	08/28/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																	
Total Petroleum Hydrocarbons (µg/L)																		
Gasoline range hydrocarbons	800	**2,300**	**1,700**	**1,500**	50 U	**67**	**84**	**1,400**	50 U	50 U	--	**800**	**900**	**5,300**	**2,100**	50 U	**50**	**50**
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**2,000**	**4,000**	**1,700**	**2,500**	**2,000**	**670**	**2,000**	**810**	250 U	--	**1,300**	**970**	**500,000**	**45,000**	250 U	**549**	**1,810**
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	**1,400**	--	--	--	--	--	--
Oil	500	**490**	--	**480**	**1,900**	**950**	**1,700**	**760**	**610**	**600**	--	--	250 U	50,000 U	2,500 U	500 U	**250**	**250**
Volatile Organics (µg/L)																		
Benzene	2.4	0.5 U	10 U	10 U	0.5 U	0.5 U	2 U	**18**	0.5 U	0.5 U	--	--	0.5 U	**4.4**	5 U	0.5 U	**0.5**	**0.5**
Toluene	7,300	0.5 U	5 U	**1.9**	0.5 U	0.5 U	**0.52**	**11**	0.5 U	0.5 U	--	--	0.5 U	5 U	1 U	0.5 U	**0.5**	**0.5**
Ethylbenzene	2,100	0.5 U	5 U	**1.5**	0.5 U	0.5 U	**0.74**	**11**	0.5 U	0.5 U	--	--	**6**	**1.3**	**1.3**	0.5 U	**0.5**	**0.5**
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	0.5 U	15 U	7.5 U	1.5 U	1.5 U	1.5 U	**18**	0.5 U	1.5 U	--	--	**6**	**9.4**	**4.9**	1 U	**1.5**	**1.5**
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																		
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																		
Antimony	--	20 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	20 U	9.9 U	9.9 U	--	20 U	9.9 U	9.9 U	--	--	--
Arsenic	5	10 U	**23**	**18.1**	**8.3**	**21.6**	**15**	**25.6**	10 U	**18**	**34.7**	--	10 U	**11**	**18.7**	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	5 U	0.5 U	**0.61**	0.5 U	**0.64**	0.5 U	**0.88**	5 U	0.5 U	**1.4**	--	5 U	0.5 U	**0.73**	--	--	--
Cadmium	8.8	5 U	0.94 U	10 U	0.94 U	10 U	**7**	10 U	5 U	**2.9**	10 U	--	5 U	0.94 U	10 U	--	--	--
Chromium	260	**6.5**	**58**	**88.3**	**57**	**80.2**	**7.6**	**69.3**	5 U	**39**	**101**	--	**6.2**	**40**	**112**	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	--	--	--	--
Copper	3.1	10 U	**26**	**41.2**	**26**	**61.3**	**130**	**262**	10 U	**290**	**380**	--	10 U	**16**	**52.1**	--	--	--
Lead	8.1	20 U	**32**	**61.2**	**73**	**192**	**48**	**583**	20 U	**170**	**791**	--	20 U	**9.6**	**31.7**	--	--	--
Mercury	0.059	0.16 U	0.079 U	**0.19**	0.079 U	**0.19**	0.079 U	0.079 U	0.16 U	**0.33**	**1.5**	--	0.16 U	0.079 U	**0.14**	--	--	--
Nickel	8.2	10 U	**43**	**61**	**36**	**72.1**	**7.2**	**96.5**	10 U	**18**	**102**	--	10 U	**23**	**58.4**	--	--	--
Selenium	71	10 U	4.8 U	4.8 U	4.8 U	4.8 U	**5**	**9**	4.7 U	**5.1**	**7.7**	--	4.7 U	4.8 U	4.8 U	--	--	--
Silver	1,900	5 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	**7.5**	**19.9**	1.4 U	**1.6**	--	5 U	1.4 U	1.4 U	--	--	--
Thallium	--	20 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	20 U	9.5 U	9.5 U	--	20 U	9.5 U	9.5 U	--	--	--
Zinc	81	**24**	**97**	**141**	**92**	**212**	**480**	**800**	20 U	**140**	**1,170**	--	20 U	**62**	**179**	--	--	--
Conventional Parameters (µg/L)																		
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	MW-66(C)			MW-67(C)		MW-68(C)		MW-69(C)			MW-70(C)						
	Location ID	MW-66(C)	MW-66(C)	MW-66(C)	MW-67(C)	MW-67(C)	MW-68(C)	MW-68(C)	MW-69(C)	MW-69(C)	MW-69(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)	MW-70(C)
	Sample ID	MW-66_1103	MW-66_0303	MW-66_092302	MW-67_0303	MW-67_092302	MW-68_0303	MW-68_092302	MW-69_1103	MW-69_0303	MW-69_092302	MW-70(C)-0308	MW-70_1103	MW-70_0303	MW-70_092302	MW-60_072601	MW-70_091900	MW-70_082899
	Sample Date	11/03/2003	03/25/2003	09/23/2002	03/25/2003	09/23/2002	03/25/2003	09/23/2002	11/03/2003	03/25/2003	09/23/2002	03/24/2008	11/03/2003	03/25/2003	09/23/2002	07/26/2001	09/19/2000	08/28/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																	
Polycyclic Aromatic Hydrocarbons (µg/L)																		
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	**0.5**	**0.6**	**0.1**	**0.1**	**0.1**	**2**	--	0.01 U	**0.6**	--	--	**3**	**2**	0.1 U	--	--
Acenaphthylene	--	--	**0.1**	0.01 U	**0.02**	**0.02**	**0.03**	0.01 U	--	0.01 U	0.01 U	--	--	**2**	0.05 U	0.1 U	--	--
Anthracene	9.6	--	**0.05**	**0.03**	**0.03**	**0.02**	**0.02**	**0.2**	--	0.01 U	**0.04**	--	--	**0.1**	**0.2**	0.1 U	--	--
Benzo(a)anthracene	0.02	--	0.01 U	**0.03**	**0.02**	0.01 U	**0.02**	**0.3**	--	**0.02**	**0.06**	--	0.01 U	**0.1**	**0.07**	0.1 U	--	--
Benzo(a)pyrene	0.02	--	0.01 U	**0.03**	0.01 U	0.01 U	**0.02**	**0.2**	--	**0.07**	**0.05**	--	0.01 U	0.1 U	0.05 U	0.1 U	--	--
Benzo(b)fluoranthene	0.02	--	0.01 U	**0.03**	**0.02**	0.01 U	**0.03**	**0.5**	--	**0.2**	**0.07**	--	0.01 U	0.1 U	0.05 U	0.1 U	--	--
Benzo(g,h,i)perylene	--	--	0.01 U	**0.03**	0.01 U	0.01 U	**0.03**	**0.4**	--	**0.2**	**0.05**	--	--	0.1 U	0.05 U	0.1 U	--	--
Benzo(k)fluoranthene	0.02	--	0.01 U	**0.01**	**0.01**	0.01 U	**0.01**	**0.1**	--	**0.09**	**0.03**	--	0.01 U	0.1 U	0.05 U	0.1 U	--	--
Chrysene	0.02	--	0.01 U	**0.04**	**0.02**	0.01 U	**0.03**	**0.6**	--	**0.02**	**0.06**	--	0.01 U	**0.1**	**0.1**	0.1 U	--	--
Dibenzo(a,h)anthracene	0.02	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.09**	--	**0.02**	**0.01**	--	0.02 U	0.1 U	0.05 U	0.1 U	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	**0.03**	**0.08**	**0.08**	**0.03**	**0.07**	**0.8**	--	**0.03**	**1**	--	--	**0.3**	**0.2**	0.1 U	--	--
Fluorene	3	--	**0.8**	**0.8**	**0.06**	**0.2**	**0.03**	**0.2**	--	0.01 U	**0.5**	--	--	**8**	**5**	0.1 U	--	--
Indeno(1,2,3-c,d)pyrene	0.02	--	0.01 U	**0.02**	0.01 U	0.01 U	**0.02**	**0.3**	--	**0.1**	**0.04**	--	0.02 U	0.1 U	0.05 U	0.1 U	--	--
Naphthalene	83	1 U	**0.3**	**0.4**	**0.07**	**0.08**	**0.2**	**2**	1 U	**0.05**	**1**	--	**7**	**19**	**8**	0.1 U	--	--
Phenanthrene	--	--	**0.02**	**0.05**	**0.07**	0.01 U	**0.08**	**1**	--	**0.02**	**0.04**	--	--	**3**	**2**	0.1 U	--	--
Pyrene	15	--	**0.04**	**0.1**	**0.09**	**0.06**	**0.1**	**0.8**	--	**0.05**	**2**	--	--	**0.3**	**0.2**	0.1 U	--	--
Total cPAH TEQ	0.02	--	0.01 U	**0.0399**	**0.01**	0.01 U	**0.03**	**0.335**	--	**0.11**	**0.0716**	--	0.01 U	**0.1**	**0.043**	0.1 U	--	--
Semivolatile Organics (µg/L)																		
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Area			MW-71(C)			MW-72(C)		MW-73(C)	MW-74(C)			MW-75(C)	MW-76(C)			MW-77(C)		
Location ID		MW-70(C)	MW-71(C)	MW-71(C)	MW-71(C)	MW-72(C)	MW-72(C)	MW-73(C)	MW-74(C)	MW-74(C)	MW-74(C)	MW-75(C)	MW-76(C)	MW-76(C)	MW-76(C)	MW-77(C)	MW-77(C)	N-1(C)
Sample ID		MW-70_032299	MW-71_1103	MW-71_0303	MW-71_092302	MW-72_0303	MW-72_092302	MW-73_092302	MW-74_1103	MW-74_0303	MW-74_092302	MW-75_092302	MW-76_1103	MW-76_0303	MW-76_092302	MW-77_0303	MW-77_092302	N-1_032299
Sample Date		03/22/1999	11/03/2003	03/25/2003	09/23/2002	03/25/2003	09/23/2002	09/23/2002	11/03/2003	03/25/2003	09/23/2002	09/23/2002	11/03/2003	03/25/2003	09/23/2002	03/25/2003	09/23/2002	03/22/1999
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Analyte	Screening Level																	
Total Petroleum Hydrocarbons (µg/L)																		
Gasoline range hydrocarbons	800	50	100	50 U	440	50 U	50 U	2,100	14,000	38,000	41,000	2,100	50 U	50 U	59	50 U	50 U	101
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	1,570	1,100	250 U	660	--	1,800	1,800	7,000	21,000	100,000	1,500	800	890	1,100	250 U	250 U	3,340
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil	500	250	250 U	250 U	740	10,000	530	280	4,800 U	2,500 U	5,000 U	280	250 U	1000 U	500 U	250 U	250 U	2,100
Volatile Organics (µg/L)																		
Benzene	2.4	0.5	1	0.5 U	190	0.5 U	0.5 U	5 U	1	50 U	10 U	45	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.502
Toluene	7,300	0.5	0.5 U	0.5 U	4.4	0.5 U	0.5 U	1.4	8	30	21	8.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.96
Ethylbenzene	2,100	0.5	0.5 U	0.5 U	39	0.5 U	0.5 U	26	720	1,200	1,200	8.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.51
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported, not calculated)	--	1.5	0.5 U	1.5 U	9.8	1.5 U	1.5 U	29	910	2,000	2,200	32	0.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7.87
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Dissolved (µg/L)																		
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals, Total (µg/L)																		
Antimony	--	--	20 U	9.9 U	9.9 U	9.9 U	9.9 U	9.9 U	20 U	9.9 U	9.9 U	9.9 U	20 U	16	49.5 U	9.9 U	9.9 U	--
Arsenic	5	--	10 U	14	4.9 U	20	49.7	22.8	10 U	9.2	92	30.1	10 U	880	2,460	65	68.1	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	5 U	0.5 U	0.5 U	0.5 U	1.1	0.59	5 U	0.5 U	0.79	0.81	5 U	0.5 U	2.5 U	0.5 U	0.5 U	--
Cadmium	8.8	--	5 U	1.4	10 U	1.7	10 U	10 U	5 U	0.94 U	10 U	10 U	5 U	9	10 U	3	10 U	--
Chromium	260	--	5 U	57	53.4	60	211	110	5 U	7.9	103	181	5 U	190	720	9	150	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	0.74	--	--	--	--	--
Copper	3.1	--	10 U	47	70.6	18	114	49.7	10 U	8.8	97.6	163	10 U	97	40.8	11	11.8	--
Lead	8.1	--	20 U	80	81.8	110	363	18	20 U	10	186	371	20 U	6	44.5 U	1.1 U	8.9 U	--
Mercury	0.059	--	0.16 U	0.079 U	0.083	0.39	0.81	0.079 U	0.16 U	0.079 U	0.11	0.091	0.16 U	0.36	0.079 U	0.079 U	0.079 U	--
Nickel	8.2	--	10 U	10	12.5	36	175	59.8	10 U	8	63.5	203	10 U	21	15.8	9.8	17.3	--
Selenium	71	--	4.7 U	6.4	6.3	8.7	8.2	6.1	4.7 U	4.8 U	9.4	6.2	4.7 U	38	69.6	4.8 U	4.8 U	--
Silver	1,900	--	77.6	1.4 U	28.9	1.4 U	1.4 U	1.4 U	5 U	1.4 U	1.9	4.9	5 U	1.4 U	7 U	1.4 U	1.4 U	--
Thallium	--	--	20 U	9.5 U	9.5 U	9.5 U	9.5 U	9.5 U	20 U	9.5 U	11.3	9.5 U	20 U	9.5 U	47.5 U	9.5 U	9.5 U	--
Zinc	81	--	20 U	49	51.8	89	386	131	20 U	5.7	149	309	20 U	11	47.6	4.9 U	40.9	--
Conventional Parameters (µg/L)																		
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ferrous iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area / Location ID / Sample ID / Sample Date / Sample Type / Screening Level		MW-71(C)			MW-72(C)		MW-73(C)	MW-74(C)			MW-75(C)	MW-76(C)			MW-77(C)		
Location ID		MW-70(C)	MW-71(C)	MW-71(C)	MW-71(C)	MW-72(C)	MW-72(C)	MW-73(C)	MW-74(C)	MW-74(C)	MW-74(C)	MW-75(C)	MW-76(C)	MW-76(C)	MW-76(C)	MW-77(C)	MW-77(C)	N-1(C)
Sample ID		MW-70_032299	MW-71_1103	MW-71_0303	MW-71_092302	MW-72_0303	MW-72_092302	MW-73_092302	MW-74_1103	MW-74_0303	MW-74_092302	MW-75_092302	MW-76_1103	MW-76_0303	MW-76_092302	MW-77_0303	MW-77_092302	N-1_032299
Sample Date		03/22/1999	11/03/2003	03/25/2003	09/23/2002	03/25/2003	09/23/2002	09/23/2002	11/03/2003	03/25/2003	09/23/2002	09/23/2002	11/03/2003	03/25/2003	09/23/2002	03/25/2003	09/23/2002	03/22/1999
Sample Type	Screening Level	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Polycyclic Aromatic Hydrocarbons (µg/L)																		
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	3.3	--	--	0.01	0.05	0.5	0.2	1	--	3	2	0.8	--	0.05	0.3	0.01 U	0.01 U	--
Acenaphthylene	--	--	--	0.03	0.01 U	0.2	0.2	0.01 U	--	1	0.01 U	0.01 U	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Anthracene	9.6	--	--	0.03	0.01 U	1	0.3	0.08	--	2	0.6	0.09	--	0.01	0.01 U	0.01 U	0.01 U	--
Benzo(a)anthracene	0.02	--	--	0.05	0.01 U	0.2	0.3	0.04	0.02	0.1	0.2	0.3	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(a)pyrene	0.02	--	--	0.07	0.01 U	0.2	0.3	0.03	0.01 U	0.06	0.08	0.3	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(b)fluoranthene	0.02	--	--	0.09	0.01 U	0.2	0.3	0.04	0.01	0.09	0.1	0.3	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(g,h,i)perylene	--	--	--	0.06	0.01 U	0.2	0.4	0.03	--	0.07	0.09	0.2	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Benzo(k)fluoranthene	0.02	--	--	0.03	0.01 U	0.1 U	0.07	0.02	0.01 U	0.03	0.03	0.1	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Chrysene	0.02	--	--	0.07	0.01 U	0.3	0.5	0.04	0.04	0.2	0.3	0.3	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Dibenzo(a,h)anthracene	0.02	--	--	0.01	0.01 U	0.1 U	0.07	0.01 U	0.02 U	0.01 U	0.01	0.05	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3.3	--	--	0.1	0.02	0.4	0.3	0.1	--	0.6	0.4	0.4	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Fluorene	3	--	--	0.03	0.05	1	0.9	3	--	8	8	0.5	--	0.02	0.2	0.01 U	0.01 U	--
Indeno(1,2,3-c,d)pyrene	0.02	--	--	0.06	0.01 U	0.1	0.3	0.02	0.02 U	0.03	0.04	0.2	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Naphthalene	83	--	1 U	0.3	0.2	0.3	0.5	26	500	1,900	1,800	1	1 U	0.1	0.2	0.03	0.08	--
Phenanthrene	--	--	--	0.08	0.01	0.3	0.4	1	--	41	39	3	--	0.01	0.01 U	0.01	0.02	--
Pyrene	15	--	--	0.2	0.03	0.9	0.9	0.2	--	1	1	0.6	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Total cPAH TEQ	0.02	--	--	0.09	0.01 U	0.3	0.409	0.0429	0.01	0.09	0.121	0.398	--	0.01 U	0.01 U	0.01 U	0.01 U	--
Semivolatile Organics (µg/L)																		
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

Analyte	Area	N-1(C)			N-2(C)	RMW-7						RMW-7		
	Location ID	N-1(C)	N-1(C)	N-1(C)	N-2(C)	RMW-7	RMW-7	RMW-7	RMW-7	RMW-7	RMW-7	RMW-7	RMW-7	RMW-7
	Sample ID	N-1_091898	N-1_031798	N-1_123097	N-2_123097	RMW-7-111416	RMW-7-07232016	RMW-7-10312013	RMW-7-0308	RMW-7-0907	RMW-7-36468	RMW-7-36382	RMW-7-36263	RMW-7-36201
	Sample Date	09/18/1998	03/17/1998	12/30/1997	12/30/1997	11/14/2016	07/23/2016	10/31/2013	03/26/2008	09/26/2007	11/04/1999	08/10/1999	04/13/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N
	Screening Level													
Total Petroleum Hydrocarbons (µg/L)														
Gasoline range hydrocarbons	800	**62.2**	**344**	**127**	**546**	--	--	--	--	250 U	--	--	--	--
Diesel range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil (with silica gel cleanup)	500	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**5,690**	**3,710**	**6,130**	**7,170**	--	--	--	--	250 U	250 U	250 U	250 U	250 U
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--	--	--	--	--	500 U	--	--	--	--
Oil	500	--	--	**1,650**	**1,740**	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)														
Benzene	2.4	--	--	--	**0.951**	--	--	--	--	1 U	--	--	--	1 U
Toluene	7,300	--	--	--	--	--	--	--	--	1 U	--	--	--	1 U
Ethylbenzene	2,100	--	--	--	--	--	--	--	--	1 U	--	--	--	1 U
m,p-Xylene	--	--	--	--	--	--	--	--	--	1 U	--	--	--	1 U
o-Xylene	440	--	--	--	--	--	--	--	--	1 U	--	--	--	1 U
Total xylene (reported, not calculated)	--	--	--	--	**2.1**	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--	--	--	2 U
Naphthalene	83	--	--	--	--	--	--	--	--	--	--	--	--	5 U
Metals, Dissolved (µg/L)														
Antimony	--	--	--	--	--	--	4 U	**6**	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	**2 J**	**8**	50 U	--	--	--	--	--
Barium	--	--	--	--	--	--	**40**	**92**	**23**	--	--	--	--	--
Beryllium	--	--	--	--	--	--	4 U	1 U	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	2 U	0.5 U	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	**6 J**	**6**	**7**	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	0.03 U	--	--	--	--	--	--
Copper	3.1	--	--	--	--	--	**1.4 J**	**4**	2 U	--	--	--	--	--
Lead	8.1	--	--	--	--	--	2 U	**0.4 J**	20 U	--	--	--	--	--
Mercury	0.059	--	--	--	--	--	0.1 U	0.02 U	0.1 U	--	--	--	--	--
Nickel	8.2	--	--	--	--	--	**2.2 J**	**1.35 J**	10 U	--	--	--	--	--
Selenium	--	--	--	--	--	--	10 U	**0.8 J**	--	--	--	--	--	--
Silver	--	--	--	--	--	--	4 U	1 U	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	4 U	1 U	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	**7 J**	**4.5 J**	10 U	--	--	--	--	--
Metals, Total (µg/L)														
Antimony	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--
Arsenic	5	--	--	--	--	--	**2.4 J**	--	50 U	50 U	5 U	**2**	**4**	**3**
Barium	--	--	--	--	--	--	**40**	--	**21**	**17**	**58**	**25**	**10**	**13**
Beryllium	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	2 U	--	--	--	--	--	--	--
Chromium	260	--	--	--	--	--	**6 J**	--	**17**	**35**	5 U	**7**	**25**	**14**
Chromium VI	50	--	--	--	--	--	10 UJ	0.03 U	12 U	11 U	10 U	10 U	60 U	100 U
Copper	3.1	--	--	--	--	--	**2.2 J**	--	**10**	**4**	**5**	**5**	**9**	**5**
Lead	8.1	--	--	--	--	--	2 U	--	20 U	20 U	5 U	**1**	**3**	**2**
Mercury	0.059	--	--	--	--	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
Nickel	8.2	--	--	--	--	--	**2.2 J**	--	10 U	10 U	10 U	10 U	10 U	10 U
Selenium	71	--	--	--	--	--	10 U	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	4 U	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--
Zinc	81	--	--	--	--	--	**7.4 J**	--	10 U	10 U	**17**	**8**	**9**	**136**
Conventional Parameters (µg/L)														
Calcium	--	--	--	--	--	--	--	--	--	**80,100**	**247,000**	**105,000**	**46,500**	**67,900**
Ferrous iron	--	--	--	--	--	--	--	--	--	**261**	**220**	**680**	**1,600**	**400**
Iron	--	--	--	--	--	--	--	--	--	**200**	**270**	**610**	**1,340**	**570**
Magnesium	--	--	--	--	--	--	--	--	--	**107,000**	**413,000**	**165,000**	**64,300**	**114,000**
Manganese	100	--	--	--	--	--	--	--	--	**46**	**20**	**35**	**54**	**17**
Potassium	--	--	--	--	--	--	--	--	--	**53,800**	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	**956,000**	**3,260,000**	**1,450,000**	--	--

Table 6-5a
C Street Properties Shallow Groundwater Results

	Area	N-1(C)			N-2(C)	RMW-7						RMW-7		
	Location ID	**N-1(C)**	**N-1(C)**	**N-1(C)**	**N-2(C)**	**RMW-7**	**RMW-7**	**RMW-7**	**RMW-7**	**RMW-7**	**RMW-7**	**RMW-7**	**RMW-7**	**RMW-7**
	Sample ID	**N-1_091898**	**N-1_031798**	**N-1_123097**	**N-2_123097**	**RMW-7-111416**	**RMW-7-07232016**	**RMW-7-10312013**	**RMW-7-0308**	**RMW-7-0907**	**RMW-7-36468**	**RMW-7-36382**	**RMW-7-36263**	**RMW-7-36201**
	Sample Date	**09/18/1998**	**03/17/1998**	**12/30/1997**	**12/30/1997**	**11/14/2016**	**07/23/2016**	**10/31/2013**	**03/26/2008**	**09/26/2007**	**11/04/1999**	**08/10/1999**	**04/13/1999**	**02/10/1999**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Analyte	**Screening Level**													
Polycyclic Aromatic Hydrocarbons (µg/L)														
1-Methylnaphthalene	--	--	--	--	--	0.01 U	--	--	--	0.1 U	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Acenaphthene	3.3	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Acenaphthylene	--	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Anthracene	9.6	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Chrysene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Dibenzofuran	--	--	--	--	--	0.01 U	--	--	--	0.1 U	--	--	--	--
Fluoranthene	3.3	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Fluorene	3	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Naphthalene	83	--	--	--	--	**0.007 J**	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Phenanthrene	--	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Pyrene	15	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Total cPAH TEQ	0.02	--	--	--	--	0.01 U	--	--	--	0.1 U	1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)														
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U

Table 6-5b
C Street Properties Deep Groundwater Results

Analyte	Area	CWMW-2			RMW-6D					RMW-7D						
	Location ID	CWMW-2	CWMW-2	CWMW-2	RMW-6D	RMW-6D	RMW-6D	RMW-6D	RMW-6D	RMW-7D	RMW-7D	RMW-7D	RMW-7D	RMW-7D	RMW-7D	RMW-7D
	Sample ID	CWMW-2-070612	CWMW-2-0308	CWMW-2-1007	RMW-6(D)-0907	RMW-6(D)-0907FB	RMW-6D-36382	RMW-6D-36264	RMW-6D-36201	RMW-7D-0308	RMW-7D-0907	DUPLICATE4-0907	RMW-7D-36468	RMW-7D-36382	RMW-7D-36263	RMW-7D-36201
	Sample Date	07/06/2012	03/24/2008	10/02/2007	09/21/2007	09/21/2007	08/10/1999	04/14/1999	02/10/1999	03/26/2008	09/26/2007	09/26/2007	11/04/1999	08/10/1999	04/13/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N
Analyte	Screening Level															
Total Petroleum Hydrocarbons (µg/L)																
Gasoline range hydrocarbons	800	**460**	**1,100**	**900**	250 U	--	--	--	--	--	250 U	250 U	--	--	--	--
Diesel range hydrocarbons (with silica gel cleanup)	500	100 UJ	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	200 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	**1,300**	250 U	250 U	250 U	--	250 U	250 U	250 U	--	250 U	250 U	250 U	250 U	250 U	250 U
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	**270**	500 U	500 U	500 U	--	--	--	--	--	500 U	500 U	--	--	--	--
Volatile Organics (µg/L)																
Benzene	2.4	0.05 U	1 U	1 U	1 U	--	--	--	1 U	--	1 U	1 U	--	--	--	1 U
Toluene	7,300	0.05 U	1 U	1 U	1 U	--	--	--	1 U	--	1 U	1 U	--	--	--	1 U
Ethylbenzene	2,100	**0.74**	1 U	1 U	1 U	--	--	--	1 U	--	1 U	1 U	--	--	--	1 U
m,p-Xylene	--	0.1 U	1 U	1 U	1 U	--	--	--	1 U	--	1 U	1 U	--	--	--	1 U
o-Xylene	440	0.05 U	1 U	1 U	1 U	--	--	--	1 U	--	1 U	1 U	--	--	--	1 U
Total xylene (reported, not calculated)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	94	--	2 U	2 U	--	--	--	--	2 U	--	--	--	--	--	--	2 U
Naphthalene	83	--	5 U	5 U	--	--	--	--	5 U	--	--	--	--	--	--	5 U
Metals, Dissolved (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	50 U	--	--	--	--	--	--	50 U	--	--	--	--	--	--
Barium	--	--	**23**	--	--	--	--	--	--	**34**	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	5 U	--	--	--	--	--	--	**5**	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	3.1	--	2 U	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Lead	8.1	--	20 U	--	--	--	--	--	--	20 U	--	--	--	--	--	--
Mercury	0.059	--	0.1 U	--	--	--	--	--	--	0.1 U	--	--	--	--	--	--
Nickel	8.2	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	--
Metals, Total (µg/L)																
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	5	--	50 U	50 U	50 U	--	**4**	**6**	**8**	50 U	100 U	100 U	5 U	**5**	**3**	5 U
Barium	--	--	**31**	**63**	**715**	--	**53**	**65**	**43**	**35**	**38**	**38**	**44**	**46**	**48**	**51**
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	--	**6**	**10**	**88**	--	**114**	**151**	**141**	**6**	10 U	10 U	10 U	10 U	10 U	10 U
Chromium VI	50	--	11 U	--	--	--	10 U	10 U	100 U	12 U	11 U	11 U	10 U	10 U	60 U	10 U
Copper	3.1	--	**4**	**9**	**49**	--	2 U	2 U	2 U	**2**	4 U	4 U	4 U	4 U	4 U	4 U
Lead	8.1	--	20 U	20 U	**60**	**23.4**	1 U	1 U	1 U	20 U	40 U	40 U	5 U	1 U	1 U	1 U
Mercury	0.059	--	0.1 U	0.1 U	**0.3**	--	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
Nickel	8.2	--	10 U	10 U	**50**	--	10 U	10 U	10 U	10 U	20 U	20 U	20 U	20 U	20 U	20 U
Selenium	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1,900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	81	--	**30**	**30**	**210**	--	**6**	**7**	**7**	10 U	20 U	20 U	10 U	8 U	8 U	8 U
Conventional Parameters (µg/L)																
Calcium	--	--	**145,000**	**145,000**	**124,000**	--	**92,800**	**89,100**	**83,600**	--	**73,300**	**66,700**	**152,000**	**152,000**	**157,000**	**154,000**
Ferrous iron	--	--	--	**375**	**14,200**	--	**820**	**410**	**290**	--	**454**	**464**	**480**	**520**	**700**	**180**
Iron	--	--	--	**500**	**34,500**	--	**390**	**280**	**220**	--	**800**	**600**	**290**	**510**	**300**	**230**
Magnesium	--	--	**19,100**	**16,300**	**84,400**	--	**245,000**	**193,000**	**155,000**	--	**432,000**	**405,000**	**661,000**	**665,000**	**669,000**	**682,000**
Manganese	100	--	--	**35**	**1,910**	--	**111**	**120**	**132**	--	**29**	**23**	**75**	**67**	**108**	**181**
Potassium	--	--	**9,900**	**13,800**	**43,400**	--	--	--	--	--	**179,000**	**176,000**	--	--	--	--
Sodium	--	--	**117,000**	**151,000**	**1,270,000**	--	**2,710,000**	--	--	--	**4,430,000**	**4,230,000**	**5,480,000**	**5,390,000**	--	--

Table 6-5b
C Street Properties Deep Groundwater Results

Analyte	Area	CWMW-2			RMW-6D					RMW-7D						
	Location ID	CWMW-2	CWMW-2	CWMW-2	RMW-6D	RMW-6D	RMW-6D	RMW-6D	RMW-6D	RMW-7D	RMW-7D	RMW-7D	RMW-7D	RMW-7D	RMW-7D	RMW-7D
	Sample ID	CWMW-2-070612	CWMW-2-0308	CWMW-2-1007	RMW-6(D)-0907	RMW-6(D)-0907FB	RMW-6D-36382	RMW-6D-36264	RMW-6D-36201	RMW-7D-0308	RMW-7D-0907	DUPLICATE4-0907	RMW-7D-36468	RMW-7D-36382	RMW-7D-36263	RMW-7D-36201
	Sample Date	07/06/2012	03/24/2008	10/02/2007	09/21/2007	09/21/2007	08/10/1999	04/14/1999	02/10/1999	03/26/2008	09/26/2007	09/26/2007	11/04/1999	08/10/1999	04/13/1999	02/10/1999
	Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N
	Screening Level															
Polycyclic Aromatic Hydrocarbons (µg/L)																
1-Methylnaphthalene	--	--	**1.9**	**1.6**	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--
2-Methylnaphthalene	--	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Acenaphthene	3.3	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Acenaphthylene	--	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Anthracene	9.6	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Chrysene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Dibenzofuran	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	0.1 U	--	--	--	--
Fluoranthene	3.3	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Fluorene	3	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Naphthalene	83	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Phenanthrene	--	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Pyrene	15	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Total cPAH TEQ	0.02	--	1 U	1 U	0.1 U	--	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)																
bis(2-Ethylhexyl)phthalate	1	--	**4.4**	1 U	--	--	1 U	1 U	**2**	--	--	--	1 U	1 U	1 U	**8.4**

Table 6-6
C Street Properties Seep Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	CWF-WS-1 CWF-WS-1-07202016 07/20/2016 N	CW-SP-01 CW-SP-01-070512 07/05/2012 N	CW-SP-02 CW-SP-02-070412 07/04/2012 N
Total Petroleum Hydrocarbons (µg/L)				
Gasoline range hydrocarbons	800	100 U	**70**	30 U
Diesel range hydrocarbons (with silica gel cleanup)	500	100 U	100 UJ	200 UJ
Motor oil range hydrocarbons (with silica gel cleanup)	500	200 U	200 U	400 U
Diesel range hydrocarbons (without silica gel cleanup[1])	500	--	**960**	200 U
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	**250**	630 U
Volatile Organics (µg/L)				
Benzene	2.4	**0.03 J**	0.05 U	0.05 U
Ethylbenzene	2,100	0.2 U	0.05 U	0.05 U
m,p-Xylene	--	0.4 U	0.1 U	0.1 U
o-Xylene	440	0.2 U	0.05 U	0.05 U
Toluene	7300	0.2 U	0.05 U	0.05 U
Metals, Dissolved (µg/L)				
Antimony	--	**3.3**	--	--
Arsenic	5.0	**3**	--	--
Barium	--	**67**	--	--
Beryllium	--	0.4 U	--	--
Cadmium	8.8	0.2 U	--	--
Chromium	260	**5**	--	--
Copper	3.1	**4.7 J**	--	--
Lead	8.1	**0.2 J**	--	--
Mercury	0.059	0.1 U	--	--
Nickel	8.2	**1.9 J**	--	--
Selenium	71	**1.9 J**	--	--
Silver	1.9	**0.02 J**	--	--
Thallium	--	0.4 U	--	--
Zinc	81	40 U	--	--
Metals, Total (µg/L)				
Antimony	--	**3.2**	--	--
Arsenic	5.0	**4**	--	--
Barium	--	**70**	--	--
Beryllium	--	0.4 U	--	--
Cadmium	8.8	1 U	--	--
Chromium	260	**5**	--	--
Chromium VI	50	10 UJ	--	--
Copper	3.1	**5**	--	--
Lead	8.1	**0.14 J**	--	--
Mercury	0.059	0.1 U	--	--
Nickel	8.2	**2.2 J**	--	--
Selenium	71	5 U	--	--
Silver	1.9	**0.02 J**	--	--
Thallium	--	0.4 U	--	--
Zinc	81	40 UJ	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)				
1-Methylnaphthalene	--	0.01 U	--	--
2-Methylnaphthalene	--	0.01 U	--	--
Acenaphthene	3.3	**0.012**	--	--
Acenaphthylene	--	0.01 U	--	--
Anthracene	9.6	0.01 U	--	--
Benzo(a)anthracene	0.02	0.01 U	--	--
Benzo(a)pyrene	0.02	0.01 U	--	--
Benzo(b)fluoranthene	0.02	0.01 U	--	--
Benzo(b,j,k)fluoranthenes	--	0.02 U	--	--
Benzo(g,h,i)perylene	--	0.01 U	--	--
Benzo(j)fluoranthene	--	0.01 U	--	--
Benzo(k)fluoranthene	0.02	0.01 U	--	--
Chrysene	0.02	0.01 U	--	--
Dibenzo(a,h)anthracene	0.02	0.01 U	--	--
Dibenzofuran	--	0.01 U	--	--
Fluoranthene	3.3	0.01 U	--	--
Fluorene	3.0	0.01 U	--	--

Table 6-6
C Street Properties Seep Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	CWF-WS-1 CWF-WS-1-07202016 07/20/2016 N	CW-SP-01 CW-SP-01-070512 07/05/2012 N	CW-SP-02 CW-SP-02-070412 07/04/2012 N
Indeno(1,2,3-c,d)pyrene	0.02	0.01 U	--	--
Naphthalene	83	**0.015**	--	--
Phenanthrene	--	0.01 U	--	--
Pyrene	15	0.01 U	--	--
Total cPAH TEQ	0.02	0.01 U	--	--

Notes:
Detected concentration is greater than CentralWaterfrontMostStringentWater screening level
Bold = Detected result
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)
[1] Groundwater analyses for diesel and motor oil range hydrocarbons without silica gel cleanup are not used for comparison to screening levels as use of silica gel cleanup is the appropriate method for this site (Central Waterfront RI/FS Work Plan Addendum No. 5, Anchor QEA 2012).

Table 6-7
C Street Properties Porewater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	CW-PW-01	CW-PW-02	CW-PW-03	CW-PW-03	CW-PW-04	CW-PW-05	CW-PW-06	CWF-PW-1
	Sample ID	CW-PW-01-070412	CW-PW-02-070412	CW-PW-03-070512	CW-PW-53-070512	CW-PW-04-070512	CW-PW-05-070412	CW-PW-06-070612	CWF-PW-1-07192016
	Sample Date	07/04/2012	07/04/2012	07/05/2012	07/05/2012	07/05/2012	07/04/2012	07/06/2012	07/19/2016
	Sample Type	N	N	N	Duplicate	N	N	N	N
	Screening Level								
Total Petroleum Hydrocarbons (porewater) (µg/L)									
Gasoline range hydrocarbons	800	30 U	30 U	30 U	30 U	**60**	**180**	30 U	100 U
Diesel range hydrocarbons (with silica gel cleanup)	500	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	200 UJ	200 UJ	120 U
Motor oil range hydrocarbons (with silica gel cleanup)	500	200 U	**330**	200 U	200 U	200 U	**1,100**	400 U	240 U
Diesel range hydrocarbons (without silica gel cleanup[1])	500	100 U	**470**	**440**	**450**	**740**	**1,400**	**440**	--
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	200 U	**570**	**250**	**240**	**250**	**1,600**	**610**	--
Volatile Organics (porewater) (µg/L)									
Benzene	2.4	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**66**	0.05 U	**0.04 J**
Toluene	7,300	0.05 U	0.05 U	0.05 U	0.05 U	**0.25**	**1.9**	**0.23**	0.2 U
Ethylbenzene	2,100	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**0.32**	0.05 U	0.2 U
m,p-Xylene	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**1.5**	0.1 U	0.4 U
o-Xylene	440	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.2 U
Metals, Dissolved (µg/L)									
Antimony	--	--	--	--	--	--	--	--	1 U
Arsenic	5.0	--	--	--	--	--	--	--	**3.6 J**
Barium	--	--	--	--	--	--	--	--	**150**
Beryllium	--	--	--	--	--	--	--	--	1 U
Cadmium	8.8	--	--	--	--	--	--	--	0.5 U
Chromium	260	--	--	--	--	--	--	--	**4**
Copper	3.1	--	--	--	--	--	--	--	**0.8 J**
Lead	8.1	--	--	--	--	--	--	--	**0.1 J**
Mercury	0.059	--	--	--	--	--	--	--	0.1 U
Nickel	8.2	--	--	--	--	--	--	--	**10**
Selenium	71	--	--	--	--	--	--	--	10 U
Silver	1.9	--	--	--	--	--	--	--	1 U
Thallium	--	--	--	--	--	--	--	--	1 U
Zinc	81	--	--	--	--	--	--	--	**6.4 J**
Metals, Total (µg/L)									
Antimony	--	--	--	--	--	--	--	--	1 U
Arsenic	5.0	--	--	--	--	--	--	--	**6**
Barium	--	--	--	--	--	--	--	--	**230**
Beryllium	--	--	--	--	--	--	--	--	1 U
Cadmium	8.8	--	--	--	--	--	--	--	0.5 U
Chromium	260	--	--	--	--	--	--	--	**7**
Chromium VI	50	--	--	--	--	--	--	--	10 UJ
Copper	3.1	--	--	--	--	--	--	--	**4.6 J**
Lead	8.1	--	--	--	--	--	--	--	**0.8**
Mercury	0.059	--	--	--	--	--	--	--	0.1 U
Nickel	8.2	--	--	--	--	--	--	--	**10**
Selenium	71	--	--	--	--	--	--	--	10 U
Silver	1.9	--	--	--	--	--	--	--	**0.05 J**
Thallium	--	--	--	--	--	--	--	--	1 U
Zinc	81	--	--	--	--	--	--	--	**11 J**

Table 6-7
C Street Properties Porewater Results

Analyte	Location ID Sample ID Sample Date Sample Type Screening Level	CW-PW-01 CW-PW-01-070412 07/04/2012 N	CW-PW-02 CW-PW-02-070412 07/04/2012 N	CW-PW-03 CW-PW-03-070512 07/05/2012 N	CW-PW-03 CW-PW-53-070512 07/05/2012 Duplicate	CW-PW-04 CW-PW-04-070512 07/05/2012 N	CW-PW-05 CW-PW-05-070412 07/04/2012 N	CW-PW-06 CW-PW-06-070612 07/06/2012 N	CWF-PW-1 CWF-PW-1-07192016 07/19/2016 N
Polycyclic Aromatic Hydrocarbons (µg/L)									
1-Methylnaphthalene	--	--	--	--	--	--	--	--	**0.014**
2-Methylnaphthalene	--	--	--	--	--	--	--	--	0.012 U
Acenaphthene	3.3	--	--	--	--	--	--	--	**0.03**
Acenaphthylene	--	--	--	--	--	--	--	--	0.012 U
Anthracene	9.6	--	--	--	--	--	--	--	0.012 U
Benzo(a)anthracene	0.02	--	--	--	--	--	--	--	0.012 U
Benzo(a)pyrene	0.02	--	--	--	--	--	--	--	0.012 U
Benzo(b)fluoranthene	0.02	--	--	--	--	--	--	--	0.012 U
Benzo(b,j,k)fluoranthenes	--	--	--	--	--	--	--	--	0.024 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	0.012 U
Benzo(j)fluoranthene	--	--	--	--	--	--	--	--	0.012 U
Benzo(k)fluoranthene	0.02	--	--	--	--	--	--	--	0.012 U
Chrysene	0.02	--	--	--	--	--	--	--	0.012 U
Dibenzo(a,h)anthracene	0.02	--	--	--	--	--	--	--	0.012 U
Dibenzofuran		--	--	--	--	--	--	--	0.012 U
Fluoranthene	3.3	--	--	--	--	--	--	--	**0.013**
Fluorene	3.0	--	--	--	--	--	--	--	0.012 U
Indeno(1,2,3-c,d)pyrene	0.02	--	--	--	--	--	--	--	0.012 U
Naphthalene	83	--	--	--	--	--	--	--	0.012 U
Phenanthrene	--	--	--	--	--	--	--	--	**0.013**
Pyrene	15	--	--	--	--	--	--	--	0.012 U
Total cPAH TEQ	0.02	--	--	--	--	--	--	--	0.012 U

Table 6-7
C Street Properties Porewater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	CWF-PW-2 / CWF-PW-2-07192016 / 07/19/2016 / N	CWF-PW-3 / CWF-PW-3-07192016 / 07/19/2016 / N	CWF-PW-4 / CWF-PW-4-111416 / 11/14/2016 / N	CWF-PW-4 / CWF-PW-104-111416 / 11/14/2016 / FD
Total Petroleum Hydrocarbons (porewater) (µg/L)					
Gasoline range hydrocarbons	800	100 U	100 U	--	--
Diesel range hydrocarbons (with silica gel cleanup)	500	120 U	**120**	--	--
Motor oil range hydrocarbons (with silica gel cleanup)	500	230 U	**310**	--	--
Diesel range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--
Motor oil range hydrocarbons (without silica gel cleanup[1])	500	--	--	--	--
Volatile Organics (porewater) (µg/L)					
Benzene	2.4	**0.04 J**	0.2 U	--	--
Toluene	7,300	0.2 U	0.2 U	--	--
Ethylbenzene	2,100	0.2 U	0.2 U	--	--
m,p-Xylene	--	0.4 U	0.4 U	--	--
o-Xylene	440	**0.04 J**	0.2 U	--	--
Metals, Dissolved (µg/L)					
Antimony	--	1 U	1 U	4 U	4 U
Arsenic	5.0	**2.2 J**	**1**	**1.4 J**	**2.06 J**
Barium	--	**20**	**98**	**48.7**	**27.1**
Beryllium	--	1 U	1 U	4 U	4 U
Cadmium	8.8	0.5 U	0.5 U	2 U	2 U
Chromium	260	**4**	**6**	**7.14 J**	**7.48 J**
Copper	3.1	**1.2 J**	**1.25 J**	4 U	4 U
Lead	8.1	**0.1 J**	**0.15 J**	2 U	2 U
Mercury	0.059	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	8.2	**3.6 J**	**0.8 J**	**2.44 J**	**2 J**
Selenium	71	10 U	5 U	10 U	10 U
Silver	1.9	1 U	1 U	2 U	2 U
Thallium	--	1 U	1 U	4 U	4 U
Zinc	81	80 U	20 U	40 U	**21.9 J**
Metals, Total (µg/L)					
Antimony	--	1 U	1 U	4 U	4 U
Arsenic	5.0	**2.6 J**	**2**	**3.42 J**	**2.18 J**
Barium	--	**40**	**102**	**48.6**	**36**
Beryllium	--	1 U	1 U	4 U	4 U
Cadmium	8.8	0.5 U	0.5 U	2 U	**0.74 J**
Chromium	260	**6**	**13**	10 U	10 U
Chromium VI	50	10 UJ	10 UJ	**-- R**	**-- R**
Copper	3.1	**6.6 J**	**18**	4 U	4 U
Lead	8.1	**0.8**	**16.4**	**1.48 J**	**1.44 J**
Mercury	0.059	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	8.2	**6.6 J**	**5**	**4.84 J**	**2.88 J**
Selenium	71	**7.8 J**	5 U	10 U	10 U
Silver	1.9	1 U	**0.2 J**	2 U	2 U
Thallium	--	1 U	1 U	4 U	4 U
Zinc	81	**11.6 J**	**40 J**	40 U	**20.8 J**

Table 6-7
C Street Properties Porewater Results

Analyte	Location ID / Sample ID / Sample Date / Sample Type / Screening Level	CWF-PW-2	CWF-PW-3	CWF-PW-4	CWF-PW-4
	Sample ID	CWF-PW-2-07192016	CWF-PW-3-07192016	CWF-PW-4-111416	CWF-PW-104-111416
	Sample Date	07/19/2016	07/19/2016	11/14/2016	11/14/2016
	Sample Type	N	N	N	FD
Polycyclic Aromatic Hydrocarbons (µg/L)					
1-Methylnaphthalene	--	0.012 U	**0.014**	--	--
2-Methylnaphthalene	--	0.012 U	**0.025**	--	--
Acenaphthene	3.3	0.012 U	**0.017**	--	--
Acenaphthylene	--	0.012 U	0.012 U	--	--
Anthracene	9.6	0.012 U	**0.056**	--	--
Benzo(a)anthracene	0.02	0.012 U	**0.034**	--	--
Benzo(a)pyrene	0.02	0.012 U	**0.028**	--	--
Benzo(b)fluoranthene	0.02	0.012 U	**0.036**	--	--
Benzo(b,j,k)fluoranthenes	--	0.024 U	**0.07**	--	--
Benzo(g,h,i)perylene	--	0.012 U	**0.031**	--	--
Benzo(j)fluoranthene	--	0.012 U	**0.017**	--	--
Benzo(k)fluoranthene	0.02	0.012 U	**0.017**	--	--
Chrysene	0.02	0.012 U	**0.07**	--	--
Dibenzo(a,h)anthracene	0.02	0.012 U	0.012 U	--	--
Dibenzofuran		0.012 U	**0.024**	--	--
Fluoranthene	3.3	0.012 U	**0.12**	--	--
Fluorene	3.0	0.012 U	**0.04**	--	--
Indeno(1,2,3-c,d)pyrene	0.02	0.012 U	**0.021**	--	--
Naphthalene	83	0.012 U	**0.034**	--	--
Phenanthrene	--	0.012 U	**0.096**	--	--
Pyrene	15	0.012 U	**0.12**	--	--
Total cPAH TEQ	0.02	0.012 U	**0.0471**	--	--

Table 6-8
C Street Properties Soil Gas Results

Analyte	Location ID / Sample ID / Sample Date	CWMW-1 / CWMW-1-SG-5 ft / 8/16/2007		CWMW-2 / CWMW-2-SG-5 ft / 8/27/2007		CWSB-5 / CWSB-5-SG-5 ft / 8/16/2007		CWSB-6 / CWSB-6-SG-5 ft / 8/16/2007		CWSB-7 / CWSB-7-SG-5 ft / 8/27/2007		CWSB-8 / CWSB-8-SG-5 ft / 8/16/2007		CWSB-9 / CWSB-9-SG-5 ft / 8/27/2007		CWSB-10 / CWSB-10-SG-5 ft / 8/27/2007		CWSB-11 / CWSB-11-SG-5 ft / 8/16/2007		CWSB-11-DUPLICATE / CWSB-11-SG-5 ft / 8/16/2007		CWSB-12 / CWSB-12-SG-5 ft / 8/16/2007	
	Screening Levels (µg/m^3)	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3	Result/ µg/m^3	MRL µg/m^3
Unadjusted C_5-C_8 Aliphatics[1]	2,700	**840,000**	4,600	**5,600**	270	**210,000**	1,500	**340,000**	2,000	**12,000**	270	**4,400**	290	**4,400**	260	**19,000**	250	**6,700,000**	41,000	**6,700,000**	41,000	**16,000,000**	65,000
Unadjusted C_9-C_{12} Aliphatics[1]	140	**150,000**	920	**6,000**	54	**46,000**	300	**75,000**	410	**21,000**	55	**7,000**	57	**4,200**	52	**6,400**	51	**720,000**	8,300	**720,000**	8,300	**360,000**	13,000
C_5-C_8 Aliphatic Hydrocarbons[1,2]	2,700	**830,000**	4,600	**5,400**	270	**210,000**	1,500	**340,000**	2,000	**11,000**	270	**4,200**	290	**4,300**	260	**18,000**	250	**6,700,000**	41,000	**6,700,000**	41,000	**16,000,000**	65,000
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	140	**150,000 M**	920	**5,900**	54	**46,000 M**	300	**74,000 M**	410	**21,000**	55	**6,800 M**	57	**4,200**	52	**6,300**	51	**720,000 M**	8,300	**720,000 M**	8,300	**360,000 M**	13,000
C_9-C_{12} Aromatic Hydrocarbons	180	**1,200 M**	920	ND	54	**370 M**	300	**500 M**	410	ND	55	**200 M**	57	ND	52	**51**	51	ND	8,300	ND	8,300	ND	13,000
1,3-Butadiene*	0.08	ND	92	**60**	5.4	**44**	30	ND	41	**73**	5.5	**57**	5.7	**40**	5.2	**44**	5.1	ND	830	ND	830	ND	1,300
2-Methylnapththalene	1.4	ND	92	ND	5.4	ND	30	ND	41	ND	5.5	ND	5.7	ND	5.2	ND	5.1	ND	830	ND	830	ND	1,300
Benzene	0.32	**270**	92	**61**	5.4	**110**	30	**180**	41	**210**	5.5	**97**	5.7	**27**	5.2	**43**	5.1	**2,300**	830	**2,300**	830	**5,300**	1,300
Ethylbenzene	460	**1,400**	92	ND	5.4	**300**	30	**550**	41	**6.6**	5.5	**8**	5.7	ND	5.2	ND	5.1	ND	830	ND	830	**1,300**	1,300
m,p -Xylene	46	**170 M**	92	**6.3**	5.4	**40**	30	**76**	41	**12**	5.5	**23**	5.7	**6.5**	5.2	**7.2**	5.1	ND	830	ND	830	ND	1,300
Methyl Tert-Butyl Ether	1,400	ND	92	ND	5.4	ND	30	ND	41	ND	5.5	ND	5.7	ND	5.2	ND	5.1	ND	830	ND	830	ND	1,300
Naphthalene	1.4	ND	92	ND	5.4	ND	30	ND	41	ND	5.5	**7**	5.7	ND	5.2	ND	5.1	ND	830	ND	830	ND	1,300
o-Xylene	46	ND	92	ND	5.4	ND	30	ND	41	ND	5.5	**12**	5.7	ND	5.2	ND	5.1	ND	830	ND	830	ND	1,300
Toluene	2,240	**150**	92	**28**	5.4	**53**	30	**89**	41	**52**	5.5	**40**	5.7	**21**	5.2	**30**	5.1	ND	830	ND	830	ND	1,300

Notes:

Detected concentration is greater than Central Waterfront Most Stringent Water screening level

Bold = Detected result

1. Hydrocarbon range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
2. C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target APH Analytes eluting in that range.
3. C_9-C_{12} Aliphatic Hydrocarbons exclude the concentration of Target APH Analytes eluting in that range.

* = Due to matrix interference, 1,3-Butadiene results determined by EPA Method TO-15 quantitation method.

µg/m^3 = microgram per cubic meter

M = Matrix interference; results may be biased high.

MRL = method reporting limit

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Used Hexane as surrogate for all Aliphatics.

Reference: Washington State Department of Ecology Reference Doses for Petroleum Mixtures - https://fortress.wa.gov/ecy/clarc/FocusSheets/petroToxParameters.pdf

Table 6-9
Hilton Avenue Properties – Former Time Oil Soil Results

Analyte	Screening Level	CWSRI-01				CWSRI-02			
Well ID		CWSRI-01				CWSRI-02			
Sample Date		11/05/2013				11/05/2013			
Depth		6 - 8 feet		11 - 13 feet		6 - 8 feet		11 - 13 feet	
		Original	Re-report	Original	Re-report	Original	Re-report	Original	Re-report
Total Petroleum Hydrocarbons (mg/kg)									
Gasoline range hydrocarbons	30	6.9 U	6.9 U	7.6 U	7.6 U	**17**	6.5 U	6.5 U	6.5 U
Diesel range hydrocarbons	2,000	6 U	6 U	6 U	6 U	**720**	**680**	**9.9**	**9.4**
Motor oil range hydrocarbons	2,000	**24**	**24**	12 U	12 U	**32**	**32**	12 U	12 U
Total Petroleum Hydrocarbons (diesel + motor oil)	2,000	**24**	**24**	12 U	12 U	**752**	**712**	**9.9**	**9.4**

Analyte	Screening Level	CWSRI-03		CWSRI-04				CWSRI-04 Duplicate	
Well ID		CWSRI-03		CWSRI-04				CWSRI-04 Duplicate	
Sample Date		11/05/2013		11/05/2013				11/05/2013	
Depth		7 - 9 feet		7 - 9.5 feet		12 - 14 feet		7 - 9.5 feet	
		Original	Re-report	Original	Re-report	Original	Re-report	Original	Re-report
Total Petroleum Hydrocarbons (mg/kg)									
Gasoline range hydrocarbons	30	8.7 U	8.7 U	**150**	35 U	**20**	6.4 U	**5,900**	700 U
Diesel range hydrocarbons	2,000	5.9 U	5.9 U	**1,200**	**1,200**	**9**	**9.4**	**1,200**	**1,200**
Motor oil range hydrocarbons	2,000	12 U	12 U	12 U	12 U	12 U	12 U	11 U	11 U
Total Petroleum Hydrocarbons (diesel + motor oil)	2,000	12 U	12 U	**1,200**	**1,200**	**9**	**9.4**	**1,200**	**1,200**

Analyte	Screening Level	CWSRI-01	CWSRI-02	CWSRI-03	CWSRI-04	
Location ID		CWSRI-01	CWSRI-02	CWSRI-03	CWSRI-04	
Sample Date		11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013
Depth		6 - 8 feet	6 - 8 feet	7 - 9 feet	7 - 9.5 feet	7 - 9.5 feet
						Duplicate
BTEX Compounds (mg/kg)						
Benzene	0.005	0.0013 U	0.590 U	**0.005**	0.074 U	0.0012 U
Toluene	--	0.0013 U	0.590 U	0.0011 U	0.074 U	0.0012 U
Ethylbenzene	--	0.0013 U	0.590 U	**0.0013**	0.074 U	0.0012 U
m,p-Xylene	--	0.0013 U	0.590 U	**0.0058**	0.074 U	0.0012 U
o-Xylene	--	0.0013 U	0.590 U	**0.0009 J**	0.074 U	0.0012 U

Notes:
Diesel and oil range hydrocarbons analyzed by NWTPH-Dx with silica gel cleanup
Gasoline range hydrocarbons analyzed by gas chromotography/flame ionization detector (GC/FID) for samples collected on 11/5/2013.
Gasoline range hydrocarbons results from 11/5/2013 were re-reported for the range of C6-C10.
Diesel range hydrocarbons results from 11/5/2013 were re-reported for the range of C10-C24.
BTEX compounds analyzed by GC/mass spectrometry (MS) 8260.
BTEX = benzene, toluene, ethylbenzene, and xylene

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

	Area	Remedial Investigation Surface Soil Results					Previous Test Pit Soil Investigation					
	Location ID	CWSS-19	CWSS-20	CWSS-21	CWSS-22	CWSS-23	OL-TP2-1	OL-TP2-2	OL-TP3-1	OL-TP4-1	OL-TP5-1	OL-TP6-1
	Sample ID	CWSS-19-0-1	CWSS-20-0-1	CWSS-21-0-1	CWSS-22-0-1	CWSS-23-0-1	OL-TP2-1_1000	OL-TP2-2_1000	OL-TP3-1_1000	OL-TP4-1_1000	OL-TP5-1_1000	OL-TP6-1_1000
	Sample Date	08/16/2007	08/16/2007	08/16/2007	08/16/2007	08/16/2007	10/30/2000	10/30/2000	10/30/2000	10/30/2000	10/30/2000	10/30/2000
	Sample Depth	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 0.5 ft	0 - 2 ft	0 - 3.25 ft	0 - 9 ft	0 - 3.5 ft	0 - 8 ft
	X	1240552.344	1240434.991	1240486.019	1240334.1	1240225.163	1240416.727	1240416.727	1240488.229	1240392.364	1240331.012	1240257.639
	Y	644416.1152	644394.8422	644628.5225	644529.0769	644418.0902	644682.0877	644682.0877	644701.3695	644605.225	644549.5821	644495.9992
Analyte	Screening Level											
Conventional Parameters (%)												
Total solids	--	**97.9**	**97.3**	**96.9**	**98.1**	**97.1**	--	--	--	--	--	--
Conventional Parameters (mg/kg)												
Cyanide, Weak acid dissociable (WAD)	--	0.19 U	0.19 U	0.22 U	0.2 U	0.18 U	--	--	--	--	--	--
Metals (mg/kg)												
Arsenic	20	10 U	**8**	10 U	20 U	10 U	0.333 U	**3.25**	--	**4.4**	--	**3.67**
Barium	16,000	**56.8**	**72**	**95.6**	**153**	**111**	3.33 U	**85.1**	--	**36.2**	--	**47.9**
Cadmium	80	--	--	--	--	--	0.333 U	**0.998**	--	**1.08**	--	**0.396**
Chromium	--	**31**	**40.2**	**33**	**38**	**28**	**2.42**	**30.8**	--	**25.5**	--	**35.2**
Chromium VI	240	0.125 U	0.127 U	0.126 U	0.124 U	0.126 U	1 U	1 U	--	1 U	--	1 U
Copper	3200	**25.9**	**33.2**	**31.1**	**20**	**37.3**	--	--	--	--	--	--
Lead	250	**21**	**10**	**11**	**30**	**14**	0.333 U	**68.4**	--	**5.72**	--	**2.93**
Mercury	24	**0.05**	**0.05**	0.05 U	**0.05**	**0.05**	0.1 U	0.1 U	--	**0.118**	--	1 U
Nickel	1600	**545**	**93**	**306**	**1,240**	**328**	**162**	--	--	--	--	--
Selenium	400	--	--	--	--	--	0.333 U	0.41 U	--	**0.316**	--	**0.543**
Silver	400	--	--	--	--	--	0.333 U	0.41 U	--	0.272 U	--	0.338 U
Zinc	24000	**72**	**51**	**66**	**142**	**109**	0.333 U	**203**	--	**43.7**	--	**35.8**
Polycyclic Aromatic Hydrocarbons (mg/kg)												
1-Methylnaphthalene	35	**0.0053**	**0.0048**	**0.018**	**0.032**	**0.0078**	--	--	--	--	--	--
2-Methylnaphthalene	320	**0.0092**	**0.0092**	**0.019**	**0.04**	**0.01**	--	0.1 U	--	0.1 U	--	**16.8**
Acenaphthene	4800	0.0048 U	**0.0053**	0.005 U	**0.03**	0.0049 U	--	0.1 U	--	0.05 U	--	**1.35**
Acenaphthylene	--	0.0048 U	0.0048 U	**0.019**	**0.061**	0.0049 U	--	0.1 U	--	**0.0671**	--	0.5 U
Anthracene	24000	0.0048 U	0.0048 U	**0.014**	**0.12**	0.0049 U	--	0.1 U	--	**0.116**	--	**0.602**
Benzo(a)anthracene	1.4	**0.0068**	**0.0082**	**0.043**	**0.36**	**0.015**	--	0.1 U	--	**0.396**	--	0.5 U
Benzo(a)pyrene	0.14	**0.0078**	**0.0068**	**0.043**	**0.29**	**0.015**	--	0.1 U	--	**0.372**	--	0.5 U
Benzo(b)fluoranthene	1.4	**0.014**	**0.021**	**0.054**	**0.44**	**0.027**	--	0.1 U	--	**0.427**	--	0.5 U
Benzo(g,h,i)perylene	--	0.0048 U	0.0048 U	**0.021**	**0.068**	**0.0093**	--	0.1 U	--	**0.268**	--	0.5 U
Benzo(k)fluoranthene	14	**0.014**	**0.0058**	**0.054**	**0.15**	**0.0083**	--	0.1 U	--	**0.134**	--	0.5 U
Chrysene	140	**0.015**	**0.016**	**0.073**	**0.46**	**0.028**	--	0.1 U	--	**0.469**	--	0.5 U
Dibenzo(a,h)anthracene	0.14	0.0048 U	0.0048 U	**0.005**	**0.02**	0.0049 U	--	0.1 U	--	0.05 U	--	0.5 U
Dibenzofuran	80	0.0048 U	0.0048 U	**0.014**	**0.044**	**0.0093**	--	--	--	--	--	--
Fluoranthene	3200	**0.026**	**0.039**	**0.17**	**0.93**	**0.061**	--	0.1 U	--	**1.09**	--	0.5 U
Fluorene	3200	0.0048 U	0.0048 U	**0.0079**	**0.071**	0.0049 U	--	0.1 U	--	**0.0732**	--	**2.93**
Indeno(1,2,3-c,d)pyrene	1.4	0.0048 U	0.0048 U	**0.017**	**0.058**	**0.0059**	--	0.1 U	--	**0.262**	--	0.5 U
Naphthalene	1600	**0.014**	**0.014**	**0.029**	**0.049**	**0.0074**	--	**0.101**	--	0.05 U	--	**1.13**
Phenanthrene	--	**0.018**	**0.022**	**0.1**	**1.1**	**0.036**	--	**0.101**	--	**0.963**	--	**5.31**
Pyrene	2400	**0.017**	**0.028**	**0.1**	**0.93**	**0.05**	--	0.1 U	--	**1.15**	--	0.5 U
Total cPAH TEQ	0.14	**0.0119**	**0.0109**	**0.061**	**0.3974**	**0.0211**	--	0.1 U	--	**0.50109**	--	0.5 U
Semivolatile Organics (mg/kg)												
bis(2-Ethylhexyl)phthalate	71	--	--	--	--	--	--	--	--	--	--	--

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Area	Remedial Investigation Surface Soil Results					Previous Test Pit Soil Investigation					
	Location ID	CWSS-19	CWSS-20	CWSS-21	CWSS-22	CWSS-23	OL-TP2-1	OL-TP2-2	OL-TP3-1	OL-TP4-1	OL-TP5-1	OL-TP6-1
	Sample ID	CWSS-19-0-1	CWSS-20-0-1	CWSS-21-0-1	CWSS-22-0-1	CWSS-23-0-1	OL-TP2-1_1000	OL-TP2-2_1000	OL-TP3-1_1000	OL-TP4-1_1000	OL-TP5-1_1000	OL-TP6-1_1000
	Sample Date	08/16/2007	08/16/2007	08/16/2007	08/16/2007	08/16/2007	10/30/2000	10/30/2000	10/30/2000	10/30/2000	10/30/2000	10/30/2000
	Sample Depth	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 1 ft	0 - 0.5 ft	0 - 2 ft	0 - 3.25 ft	0 - 9 ft	0 - 3.5 ft	0 - 8 ft
	X	1240552.344	1240434.991	1240486.019	1240334.1	1240225.163	1240416.727	1240416.727	1240488.229	1240392.364	1240331.012	1240257.639
	Y	644416.1152	644394.8422	644628.5225	644529.0769	644418.0902	644682.0877	644682.0877	644701.3695	644605.225	644549.5821	644495.9992
Analyte	Screening Level											
Total Petroleum Hydrocarbons (mg/kg)												
Diesel range hydrocarbons	2,000	**13**	**8.5**	**8.8**	**18**	**7**	--	--	10 U	**233**	**56.6**	--
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--
Heavy fuel oil range	--	--	--	--	--	--	--	--	25 U	**301**	**107**	--
Motor oil range hydrocarbons	2,000	**140**	**76**	**70**	**200**	**62**	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)												
Benzene	18	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	8000	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	16000	--	--	--	--	--	--	--	--	--	--	--
Toluene	6400	--	--	--	--	--	--	--	--	--	--	--
Total xylene (reported)	16,000	--	--	--	--	--	--	--	--	--	--	--

Notes:
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
pct = percent
mg/kg = milligram per kilogram
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Screening Level	OL-TP8-1	OL-TP9-1	OL-TP10-1	OL-TP11-1	OL-TP13-1	OL-TP14-1	OL-TP15-1	OL-TP16-1	OL-TP-18-1	OL-TP-18-2
Area		Previous Test Pit Soil Investigation									
Sample ID		OL-TP8-1_1000	OL-TP9-1_1000	OL-TP10-1_1000	OL-TP11-1_1000	OL-TP13-1_1000	OL-TP14-1_1100	OL-TP15-1_1100	OL-TP16-1_1100	OL-TP-18-1_1100	OL-TP-18-2_1100
Sample Date		10/31/2000	10/31/2000	10/31/2000	10/31/2000	10/31/2000	11/01/2000	11/01/2000	11/01/2000	11/01/2000	11/01/2000
Sample Depth		0 - 8 ft	0 - 7 ft	0 - 5 ft	0 - 1.25 ft	0 - 1.5 ft	0 - 3.5 ft	0 - 4 ft	0 - 3.25 ft	0 - 3 ft	0 - 3 ft
X		1240331.006	1240354.58	1240239.076	1240327.571	1240446.353	1240374.625	1240390.575	1240432.216	1240564.647	1240564.647
Y		644391.857	644487.2203	644408.9262	644253.0725	644267.8546	644348.3564	644323.2157	644357.0776	644344.5789	644344.5789
Conventional Parameters (%)											
Total solids	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (mg/kg)											
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)											
Arsenic	20	**1.6**	**7.22**	--	--	**3.54**	2.3 U	1.82 U	**2.44**	**3.91**	**4.1**
Barium	16,000	**18.4**	**18.8**	--	--	**68.2**	23 U	18.2 U	**17.5**	**109**	**97**
Cadmium	80	0.299 U	**0.643**	--	--	**0.299**	2.3 U	1.82 U	**0.377**	**0.396**	**0.384**
Chromium	--	**17.7**	**14.7**	--	--	**33.9**	**7.4**	**8.51**	**14.5**	**49.2**	**45.8**
Chromium VI	240	1 U	1 U	--	--	**1.83**	5.57 U	4.48 U	1 U	1 U	1 U
Copper	3200	--	--	--	--	--	--	--	--	--	--
Lead	250	**1.26**	**2.54**	--	--	**4.73**	**347**	**109**	**4.79**	**4.6**	**4.48**
Mercury	24	1 U	1 U	--	--	1 U	0.558 U	0.465 U	0.1 U	1 U	1 U
Nickel	1600	--	--	--	--	--	--	--	--	--	--
Selenium	400	**0.335**	**0.33**	--	--	**0.35**	2.3 U	1.82 U	0.323 U	**0.619**	**0.618**
Silver	400	0.299 U	0.286 U	--	--	0.275 U	2.3 U	1.82 U	0.323 U	0.385 U	0.314 U
Zinc	24000	**27.6**	**27.6**	--	--	**43.4**	**37**	**28.9**	**27.4**	**63**	**59.5**
Polycyclic Aromatic Hydrocarbons (mg/kg)											
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	0.1 U	0.1 U	--	--	0.1 U	0.279 U	**0.807**	0.1 U	0.01 U	**0.0198**
Acenaphthene	4800	0.01 U	0.02 U	--	--	0.01 U	0.279 U	0.233 U	0.01 U	0.01 U	0.01 U
Acenaphthylene	--	0.01 U	**0.0338**	--	--	0.01 U	0.279 U	0.233 U	0.01 U	0.01 U	0.01 U
Anthracene	24000	0.01 U	**0.029**	--	--	0.01 U	0.279 U	0.233 U	0.01 U	0.01 U	0.01 U
Benzo(a)anthracene	1.4	0.01 U	**0.153**	--	--	0.01 U	**0.465**	0.233 U	0.01 U	0.01 U	0.01 U
Benzo(a)pyrene	0.14	0.01 U	**0.135**	--	--	0.01 U	**0.595**	**0.233**	0.01 U	0.01 U	0.01 U
Benzo(b)fluoranthene	1.4	0.01 U	**0.172**	--	--	0.01 U	**0.669**	**0.279**	0.01 U	0.01 U	0.01 U
Benzo(g,h,i)perylene	--	0.01 U	**0.0917**	--	--	0.01 U	**0.502**	0.233 U	0.01 U	0.01 U	0.01 U
Benzo(k)fluoranthene	14	0.01 U	**0.0596**	--	--	0.01 U	**0.316**	0.233 U	0.01 U	0.01 U	0.01 U
Chrysene	140	0.01 U	**0.127**	--	--	0.01 U	**0.614**	**0.295**	0.01 U	0.01 U	0.01 U
Dibenzo(a,h)anthracene	0.14	0.01 U	**0.0209**	--	--	0.01 U	0.279 U	0.233 U	0.01 U	0.01 U	0.01 U
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3200	0.01 U	**0.248**	--	--	0.01 U	**1.54**	**0.45**	0.01 U	0.01 U	0.01 U
Fluorene	3200	0.01 U	0.02 U	--	--	0.01 U	0.279 U	0.233 U	0.01 U	0.01 U	0.01 U
Indeno(1,2,3-c,d)pyrene	1.4	0.01 U	**0.0982**	--	--	0.01 U	**0.521**	**0.233**	0.01 U	0.01 U	0.01 U
Naphthalene	1600	0.01 U	**0.02**	--	--	0.01 U	0.279 U	**1.16**	0.01 U	0.01 U	**0.0158**
Phenanthrene	--	0.01 U	**0.101**	--	--	0.01 U	**0.911**	**0.31**	0.01 U	0.01 U	0.01 U
Pyrene	2400	0.01 U	**0.183**	--	--	0.01 U	**1.36**	**0.574**	0.01 U	0.01 U	0.01 U
Total cPAH TEQ	0.14	0.01 U	**0.18664**	--	--	0.01 U	**0.81219**	**0.3221**	0.01 U	0.01 U	0.01 U
Semivolatile Organics (mg/kg)											
bis(2-Ethylhexyl)phthalate	71	--	--	--	--	--	--	--	--	--	--

Table 6-10

Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Area	Previous Test Pit Soil Investigation									
	Location ID	OL-TP8-1	OL-TP9-1	OL-TP10-1	OL-TP11-1	OL-TP13-1	OL-TP14-1	OL-TP15-1	OL-TP16-1	OL-TP-18-1	OL-TP-18-2
	Sample ID	OL-TP8-1_1000	OL-TP9-1_1000	OL-TP10-1_1000	OL-TP11-1_1000	OL-TP13-1_1000	OL-TP14-1_1100	OL-TP15-1_1100	OL-TP16-1_1100	OL-TP-18-1_1100	OL-TP-18-2_1100
	Sample Date	10/31/2000	10/31/2000	10/31/2000	10/31/2000	10/31/2000	11/01/2000	11/01/2000	11/01/2000	11/01/2000	11/01/2000
	Sample Depth	0 - 8 ft	0 - 7 ft	0 - 5 ft	0 - 1.25 ft	0 - 1.5 ft	0 - 3.5 ft	0 - 4 ft	0 - 3.25 ft	0 - 3 ft	0 - 3 ft
	X	1240331.006	1240354.58	1240239.076	1240327.571	1240446.353	1240374.625	1240390.575	1240432.216	1240564.647	1240564.647
	Y	644391.857	644487.2203	644408.9262	644253.0725	644267.8546	644348.3564	644323.2157	644357.0776	644344.5789	644344.5789
Analyte	Screening Level										
Total Petroleum Hydrocarbons (mg/kg)											
Diesel range hydrocarbons	2,000	10 U	10 U	**11.9**	10 U	**10.8**	--	--	10 U	--	--
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--
Heavy fuel oil range	--	25 U	25 U	25 U	25 U	**33.8**	--	--	25 U	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)											
Benzene	18	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	8000	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	16000	--	--	--	--	--	--	--	--	--	--
Toluene	6400	--	--	--	--	--	--	--	--	--	--
Total xylene (reported)	16,000	--	--	--	--	--	--	--	--	--	--

Notes:
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection lim
pct = percent
mg/kg = milligram per kilogram
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Area	Previous Soil Investigations			Monitoring Well Soil Results							
	Location ID	TP3	TP4	TP5	MW-1(O)	MW-1(O)	MW-1(O)	MW-1(O)	MW-2(O)	MW-2(O)	MW-2(O)	MW-2(O)
	Sample ID	TP3_0299	TP4_0299	TP5_0299	MW-1-3.5	MW-1-8.5	MW-1-13.5	MW-1_0195	MW-2-3.5	MW-2-8.5	MW-2-18.5	MW-2_0195
	Sample Date	02/16/1999	02/16/1999	02/16/1999	01/27/1995	01/27/1995	01/27/1995	01/23/1995	01/27/1995	01/27/1995	01/27/1995	01/24/1995
	Sample Depth	0 - 4.5 ft	0 - 2.5 ft	0 - 1 ft	0 - 3.5 ft	0 - 8.5 ft	0 - 13.5 ft	3.5 - 13.5 ft	0 - 3.5 ft	0 - 8.5 ft	0 - 18.5 ft	3.5 - 18.5 ft
	X	1240488.229	1240365.105	1240367.348	1240557.991	1240557.991	1240557.991	1240557.991	1240423.908	1240423.908	1240423.908	1240423.908
	Y	644701.3695	644634.1256	644709.4679	644690.5506	644690.5506	644690.5506	644690.5506	644698.7783	644698.7783	644698.7783	644698.7783
Analyte	Screening Level											
Conventional Parameters (%)												
Total solids	--	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (mg/kg)												
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)												
Arsenic	20	**4.34**	**3.42**	**3.04**	--	--	--	10 U	--	--	--	20 U
Barium	16,000	**154**	**65.2**	**20.7**	--	--	--	**18.3**	--	--	--	**6.3**
Cadmium	80	0.5 U	**1.03**	0.5 U	--	--	--	**0.5**	--	--	--	1 U
Chromium	--	**19.4**	**18.2**	**50.2**	--	--	--	**11.2**	--	--	--	**21.3**
Chromium VI	240	**0.149**	0.01 U	0.01 U	--	--	--	--	--	--	--	--
Copper	3200	--	--	--	--	--	--	--	--	--	--	--
Lead	250	**17.3**	**273**	**7.52**	--	--	--	5 U	--	--	--	10 U
Mercury	24	**0.12**	0.1 U	0.1 U	--	--	--	0.1 U	--	--	--	**0.13**
Nickel	1600	--	--	--	--	--	--	--	--	--	--	--
Selenium	400	**0.615**	0.5 U	0.5 U	--	--	--	20 U	--	--	--	40 U
Silver	400	**0.545**	**1.13**	**0.621**	--	--	--	1 U	--	--	--	2 U
Zinc	24000	**52.5**	**173**	**54.4**	--	--	--	**13.2**	--	--	--	**32**
Polycyclic Aromatic Hydrocarbons (mg/kg)												
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	0.322 U	--	--	--	--	--	--	--	--	--
Acenaphthene	4800	0.1 U	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Acenaphthylene	--	**0.0144**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Anthracene	24000	**0.0178**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Benzo(a)anthracene	1.4	**0.0212**	**0.347**	--	--	--	--	0.33 U	--	--	--	0.33 U
Benzo(a)pyrene	0.14	**0.0263**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Benzo(b)fluoranthene	1.4	**0.0408**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Benzo(g,h,i)perylene	--	**0.0773**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Benzo(k)fluoranthene	14	**0.0127**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Chrysene	140	**0.028**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Dibenzo(a,h)anthracene	0.14	0.01 U	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3200	**0.0764**	**0.983**	--	--	--	--	0.33 U	--	--	--	0.33 U
Fluorene	3200	0.01 U	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Indeno(1,2,3-c,d)pyrene	1.4	**0.045**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Naphthalene	1600	**0.0297**	0.322 U	--	--	--	--	0.33 U	--	--	--	0.33 U
Phenanthrene	--	**0.0747**	**1.21**	--	--	--	--	0.33 U	--	--	--	0.33 U
Pyrene	2400	**0.0722**	**1.33**	--	--	--	--	0.33 U	--	--	--	0.33 U
Total cPAH TEQ	0.14	**0.03905**	**0.26171**	--	--	--	--	0.33 U	--	--	--	0.33 U
Semivolatile Organics (mg/kg)												
bis(2-Ethylhexyl)phthalate	71	--	--	--	--	--	--	0.33 U	--	--	--	0.33 U

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Area	Previous Soil Investigations			Monitoring Well Soil Results							
	Location ID	TP3	TP4	TP5	MW-1(O)	MW-1(O)	MW-1(O)	MW-1(O)	MW-2(O)	MW-2(O)	MW-2(O)	MW-2(O)
	Sample ID	TP3_0299	TP4_0299	TP5_0299	MW-1-3.5	MW-1-8.5	MW-1-13.5	MW-1_0195	MW-2-3.5	MW-2-8.5	MW-2-18.5	MW-2_0195
	Sample Date	02/16/1999	02/16/1999	02/16/1999	01/27/1995	01/27/1995	01/27/1995	01/23/1995	01/27/1995	01/27/1995	01/27/1995	01/24/1995
	Sample Depth	0 - 4.5 ft	0 - 2.5 ft	0 - 1 ft	0 - 3.5 ft	0 - 8.5 ft	0 - 13.5 ft	3.5 - 13.5 ft	0 - 3.5 ft	0 - 8.5 ft	0 - 18.5 ft	3.5 - 18.5 ft
	X	1240488.229	1240365.105	1240367.348	1240557.991	1240557.991	1240557.991	1240557.991	1240423.908	1240423.908	1240423.908	1240423.908
	Y	644701.3695	644634.1256	644709.4679	644690.5506	644690.5506	644690.5506	644690.5506	644698.7783	644698.7783	644698.7783	644698.7783
Analyte	Screening Level											
Total Petroleum Hydrocarbons (mg/kg)												
Diesel range hydrocarbons	2,000	**31.6**	--	--	--	--	--	50 U	--	--	--	50 U
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--	--
Heavy fuel oil range	--	**238**	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)												
Benzene	18	--	--	--	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--
Ethylbenzene	8000	--	--	--	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	16000	--	--	--	--	--	--	--	--	--	--	--
Toluene	6400	--	--	--	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--
Total xylene (reported)	16,000	--	--	--	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--

Notes:
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection lim
pct = percent
mg/kg = milligram per kilogram
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

	Area	Monitoring Well Soil Results									
	Location ID	MW-3(O)	MW-3(O)	MW-3(O)	MW-3(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	OL-TP1-1	MW-5(O)
	Sample ID	MW-3-3.5	MW-3-8.5	MW-3-9.5	MW-3_0195	MW-4-3.5	MW-4-8.5	MW-4-13.5	MW-4_0195	OL-TP1-1_1000	MW-5_0195
	Sample Date	01/27/1995	01/27/1995	01/27/1995	01/24/1995	01/27/1995	01/27/1995	01/27/1995	01/23/1995	10/30/2000	01/24/1995
	Sample Depth	0 - 3.5 ft	0 - 8.5 ft	0 - 9.5 ft	3.5 - 9.5 ft	0 - 3.5 ft	0 - 8.5 ft	0 - 13.5 ft	3.5 - 13.5 ft	0 - 2.5 ft	3.5 - 13.5 ft
	X	1240414.507	1240414.507	1240414.507	1240414.507	1240186.017	1240186.017	1240186.017	1240186.017	1240421.866	1240368.505
	Y	644579.147	644579.147	644579.147	644579.147	644456.9169	644456.9169	644456.9169	644456.9169	644654.2269	644348.3561
Analyte	Screening Level										
Conventional Parameters (%)											
Total solids	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (mg/kg)											
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)											
Arsenic	20	--	--	--	10 U	--	--	--	10 U	**4.03**	10 U
Barium	16,000	--	--	--	**52**	--	--	--	**31.8**	**74**	**67.3**
Cadmium	80	--	--	--	**0.9**	--	--	--	0.5 U	0.373 U	**0.99**
Chromium	--	--	--	--	**58**	--	--	--	**13.8**	**44.1**	**24.7**
Chromium VI	240	--	--	--	--	--	--	--	--	1 U	--
Copper	3200	--	--	--	--	--	--	--	--	--	--
Lead	250	--	--	--	**7**	--	--	--	5 U	**11.8**	**7.4**
Mercury	24	--	--	--	0.1 U	--	--	--	0.1 U	0.1 U	0.1 U
Nickel	1600	--	--	--	--	--	--	--	--	--	--
Selenium	400	--	--	--	20 U	--	--	--	20 U	**0.48**	20 U
Silver	400	--	--	--	1 U	--	--	--	1 U	0.373 U	1 U
Zinc	24000	--	--	--	**33.6**	--	--	--	**19.6**	**43.7**	**36.1**
Polycyclic Aromatic Hydrocarbons (mg/kg)											
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	0.01 U	--
Acenaphthene	4800	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Acenaphthylene	--	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Anthracene	24000	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Benzo(a)anthracene	1.4	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Benzo(a)pyrene	0.14	--	--	--	0.33 U	--	--	--	0.33 U	**0.0115**	0.33 U
Benzo(b)fluoranthene	1.4	--	--	--	0.33 U	--	--	--	0.33 U	**0.0161**	0.33 U
Benzo(g,h,i)perylene	--	--	--	--	0.33 U	--	--	--	0.33 U	**0.0138**	0.33 U
Benzo(k)fluoranthene	14	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Chrysene	140	--	--	--	0.33 U	--	--	--	0.33 U	**0.0153**	0.33 U
Dibenzo(a,h)anthracene	0.14	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Dibenzofuran	80	--	--	--	--	--	--	--	--	--	--
Fluoranthene	3200	--	--	--	0.33 U	--	--	--	0.33 U	**0.0345**	0.33 U
Fluorene	3200	--	--	--	0.33 U	--	--	--	0.33 U	0.01 U	0.33 U
Indeno(1,2,3-c,d)pyrene	1.4	--	--	--	0.33 U	--	--	--	0.33 U	**0.013**	0.33 U
Naphthalene	1600	--	--	--	0.33 U	--	--	--	0.33 U	**0.0153**	0.33 U
Phenanthrene	--	--	--	--	0.33 U	--	--	--	0.33 U	**0.0315**	0.33 U
Pyrene	2400	--	--	--	0.33 U	--	--	--	0.33 U	**0.0338**	0.33 U
Total cPAH TEQ	0.14	--	--	--	0.33 U	--	--	--	0.33 U	**0.016063**	0.33 U
Semivolatile Organics (mg/kg)											
bis(2-Ethylhexyl)phthalate	71	--	--	--	0.33 U	--	--	--	0.33 U	--	0.33 U

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Area / Screening Level	Monitoring Well Soil Results									
	Location ID	**MW-3(O)**	**MW-3(O)**	**MW-3(O)**	**MW-3(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**	**OL-TP1-1**	**MW-5(O)**
	Sample ID	**MW-3-3.5**	**MW-3-8.5**	**MW-3-9.5**	**MW-3_0195**	**MW-4-3.5**	**MW-4-8.5**	**MW-4-13.5**	**MW-4_0195**	**OL-TP1-1_1000**	**MW-5_0195**
	Sample Date	**01/27/1995**	**01/27/1995**	**01/27/1995**	**01/24/1995**	**01/27/1995**	**01/27/1995**	**01/27/1995**	**01/23/1995**	**10/30/2000**	**01/24/1995**
	Sample Depth	**0 - 3.5 ft**	**0 - 8.5 ft**	**0 - 9.5 ft**	**3.5 - 9.5 ft**	**0 - 3.5 ft**	**0 - 8.5 ft**	**0 - 13.5 ft**	**3.5 - 13.5 ft**	**0 - 2.5 ft**	**3.5 - 13.5 ft**
	X	**1240414.507**	**1240414.507**	**1240414.507**	**1240414.507**	**1240186.017**	**1240186.017**	**1240186.017**	**1240186.017**	**1240421.866**	**1240368.505**
	Y	**644579.147**	**644579.147**	**644579.147**	**644579.147**	**644456.9169**	**644456.9169**	**644456.9169**	**644456.9169**	**644654.2269**	**644348.3561**
Analyte	**Screening Level**										
Total Petroleum Hydrocarbons (mg/kg)											
Diesel range hydrocarbons	2,000	--	--	--	50 U	--	--	--	50 U	--	50 U
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	--	--	--
Heavy fuel oil range	--	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	2,000	--	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg)											
Benzene	18	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--	--	--
Ethylbenzene	8000	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--	--	--
m,p-Xylene	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	16000	--	--	--	--	--	--	--	--	--	--
Toluene	6400	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--	--	--
Total xylene (reported)	16,000	0.005 U	0.005 U	0.005 U	--	0.005 U	0.005 U	0.005 U	--	--	--

Notes:
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection lim
pct = percent
mg/kg = milligram per kilogram
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

Analyte	Area	Hilton Avenue P								
	Location ID	TP1	TP1	TP2	TP2	TP2-Dup	TP3	B-1_Oliv	B-1_Oliv	B-1_Oliv
	Sample ID	TP1_0195_3.7	TP1_0195	TP2_0195_4	TP2_0195_9	TP2-DUP_0195	TP3_0195	B-1-6.5	B-1_0494	B-1 DUP_0494
	Sample Date	01/27/1995	01/27/1995	01/27/1995	01/27/1995	01/27/1995	01/27/1995	04/21/1994	04/21/1994	04/21/1994
	Sample Depth	0 - 3.7 ft	0 - 8 ft	0 - 4 ft	0 - 9 ft	0 - 9 ft	0 - 9.5 ft	0 - 6.5 ft	3 - 8 ft	3 - 8 ft
	X	1240373.373	1240373.373	1240384.574	1240384.574	1240384.574	1240488.229	1240399.793	1240399.793	1240399.793
	Y	644558.1529	644558.1529	644587.3743	644587.3743	644587.3743	644701.3695	644555.4833	644555.4833	644555.4833
Analyte	Screening Level									
Conventional Parameters (%)										
Total solids	--	--	--	--	--	--	--	--	--	--
Conventional Parameters (mg/kg)										
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)										
Arsenic	20	**24**	**11.4**	10 U	10 U	10 U	**10.4**	--	**17**	**14**
Barium	16,000	**110**	**58.2**	**77.7**	**54.7**	**77**	**97.9**	--	**115**	**108**
Cadmium	80	**1.1**	0.5 U	**0.64**	**0.66**	**0.77**	0.5 U	--	**3.1**	**2.6**
Chromium	--	**19.7**	**10.9**	**23.1**	**20.3**	**27.8**	**9.5**	--	**42.6**	**45.1**
Chromium VI	240	--	--	--	--	--	--	--	--	--
Copper	3200	--	--	--	--	--	--	--	--	--
Lead	250	**148**	**493**	**26**	**25.2**	**25.2**	**284**	--	**142**	**139**
Mercury	24	**0.77**	**0.13**	0.1 U	0.1 U	0.1 U	**0.11**	--	**0.19**	**0.2**
Nickel	1600	--	--	--	--	--	--	--	--	--
Selenium	400	40 U	20 U	20 U	20 U	20 U	20 U	--	**15**	**10**
Silver	400	**12.4**	**1.5**	1 U	**1**	1 U	1 U	--	0.4 U	0.4 U
Zinc	24000	**213**	**70.3**	**81**	**50.5**	**75**	**65**	--	**71.3**	**75.9**
Polycyclic Aromatic Hydrocarbons (mg/kg)										
1-Methylnaphthalene	35	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	320	--	--	--	--	--	--	--	--	--
Acenaphthene	4800	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	0.076 U	--
Acenaphthylene	--	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	0.076 U	--
Anthracene	24000	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	0.076 U	--
Benzo(a)anthracene	1.4	0.33 U	**0.41**	**1**	**2.7**	0.33 U	0.33 U	--	**0.17**	--
Benzo(a)pyrene	0.14	0.33 U	**0.34**	**1.1**	**3.5**	0.33 U	0.33 U	--	**0.16**	--
Benzo(b)fluoranthene	1.4	**0.402**	**0.502**	**1.52**	**6.12**	0.33 U	0.33 U	--	**0.17**	--
Benzo(g,h,i)perylene	--	0.33 U	0.33 U	0.99 U	**2**	0.33 U	0.33 U	--	**0.14**	--
Benzo(k)fluoranthene	14	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	**0.11**	--
Chrysene	140	0.33 U	**0.35**	0.99 U	**3.9**	0.33 U	0.33 U	--	**0.23**	--
Dibenzo(a,h)anthracene	0.14	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	0.076 U	--
Dibenzofuran	80	--	--	--	--	--	--	--	--	--
Fluoranthene	3200	**0.6**	**0.87**	**1.8**	**5.7**	0.33 U	0.33 U	--	**0.28**	--
Fluorene	3200	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	0.076 U	--
Indeno(1,2,3-c,d)pyrene	1.4	0.33 U	0.33 U	0.99 U	**2.3**	0.33 U	0.33 U	--	--	--
Naphthalene	1600	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	**0.16**	--
Phenanthrene	--	**0.43**	**0.78**	0.99 U	**2.4**	0.33 U	0.33 U	--	**0.46**	--
Pyrene	2400	**0.6**	**0.76**	**2.3**	**6.8**	0.33 U	0.33 U	--	**0.47**	--
Total cPAH TEQ	0.14	**0.27285**	**0.4842**	**1.50545**	**4.781**	0.33 U	0.33 U	--	**0.2111**	--
Semivolatile Organics (mg/kg)										
bis(2-Ethylhexyl)phthalate	71	0.33 U	0.33 U	0.99 U	1.3 U	0.33 U	0.33 U	--	**0.086**	--

Table 6-10
Hilton Avenue Properties – Former Olivine Soil Results

	Area	Hilton Avenue P								
	Location ID	TP1	TP1	TP2	TP2	TP2-Dup	TP3	B-1_Oliv	B-1_Oliv	B-1_Oliv
	Sample ID	TP1_0195_3.7	TP1_0195	TP2_0195_4	TP2_0195_9	TP2-DUP_0195	TP3_0195	B-1-6.5	B-1_0494	B-1 DUP_0494
	Sample Date	01/27/1995	01/27/1995	01/27/1995	01/27/1995	01/27/1995	01/27/1995	04/21/1994	04/21/1994	04/21/1994
	Sample Depth	0 - 3.7 ft	0 - 8 ft	0 - 4 ft	0 - 9 ft	0 - 9 ft	0 - 9.5 ft	0 - 6.5 ft	3 - 8 ft	3 - 8 ft
	X	1240373.373	1240373.373	1240384.574	1240384.574	1240384.574	1240488.229	1240399.793	1240399.793	1240399.793
	Y	644558.1529	644558.1529	644587.3743	644587.3743	644587.3743	644701.3695	644555.4833	644555.4833	644555.4833
Analyte	Screening Level									
Total Petroleum Hydrocarbons (mg/kg)										
Diesel range hydrocarbons	2,000	--	--	--	--	--	--	--	59	**26**
Gasoline range hydrocarbons	30	--	--	--	--	--	--	--	2.5 J	--
Heavy fuel oil range	--	--	--	--	--	--	--	--	--	--
Motor oil range hydrocarbons	2,000	--	--	--	--	--	--	--	--	--
Oil	2,000	--	--	--	--	--	--	--	50 U	--
Total petroleum hydrocarbons	2,000	**18**	10 U	--	--	**83**	10 U	--	--	--
Volatile Organics (mg/kg)										
Benzene	18	--	--	--	--	--	--	0.0012 U	--	--
Ethylbenzene	8000	--	--	--	--	--	--	0.0012 U	--	--
m,p-Xylene	--	--	--	--	--	--	--	0.0012 U	--	--
o-Xylene	16000	--	--	--	--	--	--	**0.0016**	--	--
Toluene	6400	--	--	--	--	--	--	**0.0015**	--	--
Total xylene (reported)	16,000	--	--	--	--	--	--	--	--	--

Notes:
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection lim
pct = percent
mg/kg = milligram per kilogram
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)

Table 6-11
Hilton Avenue Properties – Former Time Oil Groundwater Results

Analyte	Well ID / Sample Date / Screening Level	CWSRI-01 11/06/2013 GC/FID-Original	CWSRI-01 11/06/2013 GC/FID-Re-report	CWSRI-01 02/19/2014 GC/MS	CWSRI-02 11/06/2013 GC/FID-Original	CWSRI-02 11/06/2013 GC/FID-Re-report	CWSRI-02 02/19/2014 GC/MS	CWSRI-04 11/06/2013 GC/FID-Original	CWSRI-04 11/06/2013 GC/FID-Re-report	CWSRI-04 02/19/2014 GC/MS
Total Petroleum Hydrocarbons (µg/L)										
Gasoline range hydrocarbons	800	250 U	250 U	250 U	**1,200**	**620**	**720**	**440**	250 U	250 UJ
Diesel range hydrocarbons	500	100 U	100 U	100 U	**140**	**260**	**120**	**390**	**440**	100 U
Motor oil range hydrocarbons	500	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U

Analyte	Well ID / Sample Date / Screening Level	CWSRI-01 11/06/2013	CWSRI-01 02/19/2014	CWSRI-02 11/06/2013	CWSRI-02 02/19/2014	CWSRI-04 11/06/2013	CWSRI-04 02/19/2014
BTEX Compounds (µg/L)							
Benzene	2.4	0.2 U	0.5 U	**0.32**	0.5 U	2 UJ	0.5 UJ
Toluene	7,300	0.2 U	0.5 U	**0.73**	0.5 U	2 UJ	0.5 UJ
Ethylbenzene	2,100	0.2 U	0.5 U	**0.2**	0.5 U	2 UJ	0.5 UJ
m,p-Xylene	--	**0.15 J**	1 U	**2.6**	**3.5**	**1 J**	1 UJ
o-Xylene	440	**0.11 J**	0.5 U	**0.39**	**0.6**	2 UJ	**0.5 J**

Notes:
Diesel and oil range hydrocarbons analyzed by NWTPH-Dx
Gasoline range hydrocarbons analyzed by gas chromotography/flame ionization detector (GC/FID) for samples collected on 11/6/2013 and analyzed by GC/mass spectrometry (MS) for samples collected on 2/19/2014.
Gasoline range hydrocarbons results from 11/6/2013 were re-reported for the range of C6-C10.
Gasoline range hydrocarbons results from 2/19/2014 are presented for range from C6-C10.
BTEX = benzene, toluene, ethylbenzene, and xylene

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

Analyte	Area	MW-1 (E)		MW-1(O)		MW-3(O)	MW-4(O)						
	Location ID	MW-1(E)	MW-1(E)	MW-1(O)	MW-1(O)	MW-3(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)
	Sample ID	MW-1E-0308	MW-1(E)-0907	MW-1-1_1200	MW-12-1_1200	MW-3-1_1200	MW-4(O)-10302013	MW-4(O)-0907	MW-4-1_1200	MW-4-11499	MW-4-81099	MW-4-41399	MW-4-21099
	Sample Date	03/25/2008	09/19/2007	12/13/2000	12/13/2000	12/13/2000	10/30/2013	09/24/2007	12/13/2000	11/04/1999	08/10/1999	04/13/1999	02/10/1999
	Sample Type	N	N	N	FD	N	N	N	N	N	N	N	N
	X	1240203.901	1240203.901	1240557.991	1240557.991	1240414.507	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017
	Y	643985.302	643985.302	644690.5506	644690.5506	644579.147	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169
Analyte	Screening Level												
Conventional Parameters (µg/L)													
Acidity as calcium carbonate (CaCO3)	--	**1,200,000**	**1,380,000**	--	--	--	--	**597,000**	--	**960,000**	**950,000**	**1,200,000**	**1,300,000**
Alkalinity, bicarbonate (CaCO3)	--	**1,200,000**	**1,380,000**	--	--	--	--	**597,000**	--	--	--	--	--
Alkalinity, carbonate (CaCO3)	--	1000 U	1000 U	--	--	--	--	1,000 U	--	--	--	--	--
Alkalinity, hydroxide (CaCO3)	--	1000 U	1000 U	--	--	--	--	1,000 U	--	--	--	--	--
Ammonia as nitrogen	--	--	--	--	--	--	--	**5,360**	--	**11,000**	**12,000**	**12,000**	**12,000**
Chloride	--	**193,000**	**92,300**	--	--	--	--	**350,000**	--	**170,000**	**400,000**	**320,000**	**280,000**
Cyanide, Weak acid dissociable (WAD)	--	5 U	5 U	--	--	--	--	5 U	--	5 U	5 U	5 U	5 U
Methane	--	--	--	--	--	--	--	**9,380**	--	--	--	--	--
Nitrate + nitrite as nitrogen	--	**72**	10 U	--	--	--	--	10 U	--	10 U	**44**	10 U	**27**
Nitrate as nitrogen	--	**62**	10 U	--	--	--	--	10 U	--	--	--	--	--
Nitrite as nitrogen	--	**10**	10 U	--	--	--	--	10 U	--	--	--	--	--
Sulfate	--	**47,600**	**42,900**	--	--	--	--	**15,700**	--	**16,000**	--	--	--
Sulfide	--	--	--	--	--	--	--	**740**	--	50 U	50 U	50 U	100 U
Total dissolved solids	--	**1,470,000**	**1,550,000**	--	--	--	--	**1,170,000**	--	--	--	--	--
Total suspended solids	--	2,000 U	**1,200**	--	--	--	--	**2,500**	--	**5,500**	**16,000**	**17,000**	**24,000**
Total organic carbon	--	**41,900**	**54,400**	--	--	--	--	**15,300**	--	**24,000**	**24,000**	**26,000**	**28,000**
Conventional Parameters, Dissolved (µg/L)													
Total dissolved solids	--	--	--	--	--	--	**884**	--	--	**1,300,000**	**1,300,000**	**1,600,000**	**1,800,000**
Metals, Dissolved (µg/L)													
Antimony	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Arsenic	5	50 U	--	--	--	--	**0.15 J**	--	--	--	--	--	--
Barium	--	**55**	--	--	--	--	**15**	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Cadmium	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--
Chromium	260	**72**	--	--	--	--	**16**	--	--	--	--	--	--
Chromium VI	50	--	--	--	--	--	0.03 U	--	--	--	--	--	--
Copper	3.1	2 U	--	--	--	--	1 U	--	--	--	--	--	--
Lead	8.1	20 U	--	--	--	--	0.2 U	--	--	--	--	--	--
Mercury	0.059	0.1 U	--	--	--	--	0.02 U	--	--	--	--	--	--
Nickel	8.2	10 U	--	--	--	--	**5**	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	**0.65 J**	--	--	--	--	--	--
Silver	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
Zinc	81	10 U	--	--	--	--	**2.8 J**	--	--	--	--	--	--
Metals (µg/L)													
Arsenic	5	50 U	50 U	**1.9**	**1.73**	**1.02**	--	50 U	**1.23**	1 U	1 U	1 U	1 U
Barium	--	**48**	**118**	**36.5**	**35**	**76.7**	--	**20**	**39.7**	**25**	**29**	**39**	**38**
Cadmium	8.8	--	--	1 U	1 U	1 U	--	--	1 U	--	--	--	--
Calcium	--	**154,000**	**154,000**	--	--	--	--	**92,700**	--	**160,000**	**162,000**	**208,000**	**192,000**
Chromium	260	**75**	**118**	**1.51**	**1.44**	**2.63**	--	**15**	**30.6**	**45**	**39**	**28**	**34**
Chromium VI	50	--	11 U	5 U	5 U	5 U	--	--	5 U	10 U	10 U	110 U	100 U
Copper	3.1	2 U	2 U	--	--	--	--	2 U	--	2 U	2 U	2 U	2 U
Ferrous iron	--	--	--	--	--	--	--	**2,440**	--	**5,700**	**6,200**	**6,700**	**3,800**
Iron	--	--	--	--	--	--	--	**1,240**	--	**5,210**	**5,450**	**6,170**	**5,290**
Lead	8.1	20 U	20 U	1 U	1 U	1 U	--	20 U	1 U	1 U	1 U	1 U	1 U
Magnesium	--	**98,700**	**108,000**	--	--	--	--	**47,800**	--	**56,400**	**57,400**	**77,200**	**75,600**
Manganese	100	--	--	--	--	--	--	**360**	--	**1,090**	**1,070**	**1,460**	**1,370**
Mercury	0.059	0.1 U	0.1 U	1 U	1 U	1 U	--	0.1 U	1 U	0.1 U	0.1 U	0.2 U	0.1 U
Nickel	8.2	10 U	10 U	--	--	--	--	10 U	--	10 U	10 U	10 U	10 U
Potassium	--	**89,800**	**107,000**	--	--	--	--	**36,700**	--	--	--	--	--
Selenium	71	--	--	1 U	**1.12**	1 U	--	--	**2.18**	--	--	--	--
Silver	1900	--	--	1 U	1 U	1 U	--	--	1 U	--	--	--	--
Sodium	--	**236,000**	**296,000**	--	--	--	--	**272,000**	--	**197,000**	**242,000**	--	--
Zinc	81	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	6 U	4 U	**531**	**8**
Total Petroleum Hydrocarbons (µg/L)													
Gasoline range hydrocarbons	800	250 U	--	50 U	50 U	50 U	--	--	50 U	--	--	--	--
Diesel range hydrocarbons	500	250 U	250 U	250 U	250 U	250 U	--	250 U	--	250 U	250 U	250 U	250 U

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

Analyte	Area	MW-1 (E)		MW-1(O)		MW-3(O)	MW-4(O)						
	Location ID	MW-1(E)	MW-1(E)	MW-1(O)	MW-1(O)	MW-3(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)
	Sample ID	MW-1E-0308	MW-1(E)-0907	MW-1-1_1200	MW-12-1_1200	MW-3-1_1200	MW-4(O)-10302013	MW-4(O)-0907	MW-4-1_1200	MW-4-11499	MW-4-81099	MW-4-41399	MW-4-21099
	Sample Date	03/25/2008	09/19/2007	12/13/2000	12/13/2000	12/13/2000	10/30/2013	09/24/2007	12/13/2000	11/04/1999	08/10/1999	04/13/1999	02/10/1999
	Sample Type	N	N	N	FD	N	N	N	N	N	N	N	N
	X	1240203.901	1240203.901	1240557.991	1240557.991	1240414.507	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017
	Y	643985.302	643985.302	644690.5506	644690.5506	644579.147	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169
Analyte	Screening Level												
Motor oil range hydrocarbons	500	500 U	500 U	--	--	--	--	500 U	--	--	--	--	--
Oil	--	--	--	500 U	500 U	500 U	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)													
1-Methylnaphthalene	--	0.1 U	1 U	--	--	--	0.01 U	**0.22**	--	--	--	--	--
2-Methylnaphthalene	--	0.1 U	1 U	--	--	--	0.01 U	0.1 U	--	1 U	1 U	1 U	1 U
Acenaphthene	3.3	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Acenaphthylene	--	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Anthracene	9.6	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(a)anthracene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(a)pyrene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(b)fluoranthene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(g,h,i)perylene	--	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Chrysene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	**0.013**	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Dibenzo(a,h)anthracene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Dibenzofuran	--	0.1 U	--	--	--	--	0.01 U	0.1 U	--	--	--	--	--
Fluoranthene	3.3	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Fluorene	3	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Naphthalene	83	0.1 U	1 U	0.1 U	0.1 U	0.1 U	**0.014**	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Phenanthrene	--	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Pyrene	15	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Total cPAH TEQ	0.02	0.1 U	1 U	0.1 U	0.1 U	0.1 U	**0.008**	0.1 U	0.1 U	1 U	1 U	1 U	1 U
Semivolatile Organics (µg/L)													
1,2,4-Trichlorobenzene	0.48	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	6.1	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	960	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	5	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
2,2'-Oxybis (1-chloropropane)	14.3	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
2,4,5-Trichlorophenol	3,600	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	2.4	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	73.3	--	5 U	--	--	--	--	--	--	3 U	3 U	3 U	3 U
2,4-Dimethylphenol	200	--	1 U	--	--	--	--	--	--	3 U	3 U	3 U	3 U
2,4-Dinitrophenol	1,400	--	10 U	--	--	--	--	--	--	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	3.4	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	--	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
2-Chloronaphthalene	390	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
2-Chlorophenol	37.4	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
2-Methylphenol (o-Cresol)	--	--	1 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
2-Nitroaniline	--	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
2-Nitrophenol	--	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	2	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
3-Nitroaniline	--	--	5 U	--	--	--	--	--	--	6 U	6 U	6 U	6 U
4-Bromophenyl-phenyl ether	--	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	--	--	5 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
4-Chloroaniline	--	--	5 U	--	--	--	--	--	--	3 U	3 U	3 U	3 U
4-Chlorophenyl phenyl ether	--	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
4-Methylphenol (p-Cresol)	--	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
4-Nitroaniline	--	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
4-Nitrophenol	--	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
Benzoic acid	--	--	10 U	--	--	--	--	--	--	10 U	10 U	10 U	10 U
Benzyl alcohol	--	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
bis(2-Chloroethoxy)methane	--	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
bis(2-Chloroethyl)ether	0.53	--	1 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
bis(2-Ethylhexyl)phthalate	1	--	1 U	--	--	--	--	--	--	1 U	1 U	**5.5**	**2**
Butylbenzyl phthalate	0.35	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Carbazole	--	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	MW-1 (E)		MW-1(O)		MW-3(O)	MW-4(O)						
	Location ID	MW-1(E)	MW-1(E)	MW-1(O)	MW-1(O)	MW-3(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)	MW-4(O)
	Sample ID	MW-1E-0308	MW-1(E)-0907	MW-1-1_1200	MW-12-1_1200	MW-3-1_1200	MW-4(O)-10302013	MW-4(O)-0907	MW-4-1_1200	MW-4-11499	MW-4-81099	MW-4-41399	MW-4-21099
	Sample Date	03/25/2008	09/19/2007	12/13/2000	12/13/2000	12/13/2000	10/30/2013	09/24/2007	12/13/2000	11/04/1999	08/10/1999	04/13/1999	02/10/1999
	Sample Type	N	N	N	FD	N	N	N	N	N	N	N	N
	X	1240203.901	1240203.901	1240557.991	1240557.991	1240414.507	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017	1240186.017
	Y	643985.302	643985.302	644690.5506	644690.5506	644579.147	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169	644456.9169
Analyte	Screening Level												
Dibenzofuran	--	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Diethyl phthalate	740	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Dimethyl phthalate	1,100,000	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Di-n-butyl phthalate	140	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Dinitro-o-cresol	--	--	10 U	--	--	--	--	--	--	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	0.2	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Hexachlorobenzene	0.2	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Hexachlorobutadiene	0.2	--	1 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
Hexachlorocyclopentadiene	1100	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
Hexachloroethane	3.3	--	1 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
Isophorone	600	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Nitrobenzene	690	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
n-Nitrosodi-n-propylamine	0.32	--	5 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
n-Nitrosodiphenylamine	3.7	--	1 U	--	--	--	--	--	--	1 U	1 U	1 U	1 U
Pentachlorophenol	3	--	5 U	--	--	--	--	--	--	5 U	5 U	5 U	5 U
Phenol	216,000	--	1 U	--	--	--	--	--	--	2 U	2 U	2 U	2 U
tert-Amyl methyl ether (TAME)	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)													
1,1,1,2-Tetrachloroethane	7.4	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,1,1-Trichloroethane	11,000	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,1,2,2-Tetrachloroethane	4	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	1,100	2 U	2 U	--	--	--	--	--	--	--	--	--	2 U
1,1,2-Trichloroethane	7.9	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,1-Dichloroethane	2,300	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,1-Dichloroethene	3.2	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,1-Dichloropropene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,2,3-Trichlorobenzene	--	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
1,2,3-Trichloropropane	--	2 U	2 U	--	--	--	--	--	--	--	--	--	1 U
1,2,4-Trichlorobenzene	0.48	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
1,2,4-Trimethylbenzene	24	1 U	1 U	--	--	--	--	1 U	--	--	--	--	1 U
1,2-Dibromo-3-chloropropane	--	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
1,2-Dichlorobenzene	6.1	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,2-Dichloroethane	4.2	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,2-Dichloroethene, cis-	160	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,2-Dichloroethene, trans-	130	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,2-Dichloropropane	15	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,3,5-Trimethylbenzene (Mesitylene)	25	1 U	1 U	--	--	--	--	1 U	--	--	--	--	1 U
1,3-Dichlorobenzene	960	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,3-Dichloropropane	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,3-Dichloropropene, cis-	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,3-Dichloropropene, trans-	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
1,4-Dichloro-2-butene, trans-	--	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
1,4-Dichlorobenzene	5	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
2,2-Dichloropropane	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
2-Butanone (MEK)	350,000	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
2-Chloroethylvinyl ether	--	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
2-Chlorotoluene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
2-Hexanone (Methyl butyl ketone)	--	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
4-Chlorotoluene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Acetone	--	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
Acrolein	20	50 U	50 U	--	--	--	--	--	--	--	--	--	50 U
Acrylonitrile	5	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
Benzene	2.4	1 U	1 U	0.5 U	0.5 U	0.5 U	--	1 U	0.5 U	--	--	--	1 U
Bromobenzene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Bromochloromethane	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Bromodichloromethane	0.5	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Bromoform (Tribromomethane)	140	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	**MW-1 (E)**		**MW-1(O)**		**MW-3(O)**	**MW-4(O)**						
	Location ID	**MW-1(E)**	**MW-1(E)**	**MW-1(O)**	**MW-1(O)**	**MW-3(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**	**MW-4(O)**
	Sample ID	**MW-1E-0308**	**MW-1(E)-0907**	**MW-1-1_1200**	**MW-12-1_1200**	**MW-3-1_1200**	**MW-4(O)-10302013**	**MW-4(O)-0907**	**MW-4-1_1200**	**MW-4-11499**	**MW-4-81099**	**MW-4-41399**	**MW-4-21099**
	Sample Date	**03/25/2008**	**09/19/2007**	**12/13/2000**	**12/13/2000**	**12/13/2000**	**10/30/2013**	**09/24/2007**	**12/13/2000**	**11/04/1999**	**08/10/1999**	**04/13/1999**	**02/10/1999**
	Sample Type	**N**	**N**	**N**	**FD**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
	X	**1240203.901**	**1240203.901**	**1240557.991**	**1240557.991**	**1240414.507**	**1240186.017**	**1240186.017**	**1240186.017**	**1240186.017**	**1240186.017**	**1240186.017**	**1240186.017**
	Y	**643985.302**	**643985.302**	**644690.5506**	**644690.5506**	**644579.147**	**644456.9169**	**644456.9169**	**644456.9169**	**644456.9169**	**644456.9169**	**644456.9169**	**644456.9169**
Analyte	**Screening Level**												
Bromomethane (Methyl bromide)	13	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
Carbon disulfide	400	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Carbon tetrachloride	0.5	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Chlorobenzene	100	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Chloroethane	12	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
Chloroform	1.2	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Chloromethane	5.2	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
Cymene, p- (4-Isopropyltoluene)	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Dibromochloromethane	0.5	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Dibromomethane	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Dichloromethane (Methylene chloride)	94	2 U	2 U	--	--	--	--	--	--	--	--	--	2 U
Diisopropylether	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl bromide (Bromoethane)	--	2 U	2 U	--	--	--	--	--	--	--	--	--	2 U
Ethyl tert-butyl ether (ETBE)	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	1 U	1 U	0.5 U	0.5 U	0.5 U	--	1 U	0.5 U	--	--	--	1 U
Ethylene dibromide (1,2-Dibromoethane)	2	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Hexachlorobutadiene	0.2	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
Isopropylbenzene (Cumene)	720	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
m,p-Xylene	--	1 U	1 U	--	--	--	--	1 U	--	--	--	--	1 U
Methyl iodide (Iodomethane)	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Methyl isobutyl ketone (MIBK)	11,000	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
Methyl tert-butyl ether (MTBE)	--	1 U	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
n-Butylbenzene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
n-Propylbenzene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
o-Xylene	440	1 U	1 U	--	--	--	--	1 U	--	--	--	--	1 U
sec-Butylbenzene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Styrene	78	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
tert-Butyl alcohol (2-Methyl-2-propanol)	--	10 U	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Tetrachloroethene (PCE)	3.3	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Toluene	7,300	1 U	1 U	0.5 U	0.5 U	0.5 U	--	1 U	0.5 U	--	--	--	1 U
Total xylene (reported, not calculated)	--	--	--	1 U	1 U	1 U	--	--	1 U	--	--	--	--
Trichloroethene (TCE)	1.6	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U
Trichlorofluoromethane	120	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
Vinyl acetate	7,800	5 U	5 U	--	--	--	--	--	--	--	--	--	5 U
Vinyl chloride	0.5	1 U	1 U	--	--	--	--	--	--	--	--	--	2 U
n-Alkanes and Isoprenoids (µg/L)													
n-Hexane (C6)	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	MW-5(O)		MW-6(O)	MW-7(O)			MW-8(O)			
	Location ID	MW-5(O)	MW-5(O)	MW-6(O)	MW-7(O)	MW-7(O)	MW-7(O)	MW-8(O)	MW-8(O)	MW-8(O)	MW-8(O)
	Sample ID	MW-5(O)-0907	OMW-5_0301	OMW-6_0301	MW-7(O)-0907	OMW-7_0301	OMW-12_0301	MW-8(O)-10292013	MW-8(O)-FD-10292013	MW-8(O)-0907	OMW-8_0301
	Sample Date	09/18/2007	03/06/2001	03/06/2001	09/28/2007	03/06/2001	03/06/2001	10/29/2013	10/29/2013	09/28/2007	03/06/2001
	Sample Type	N	N	N	N	N	FD	N	FD	N	N
	X	1240368.505	1240368.505	1240495.214	1240251.11	1240251.11	1240251.11	1240409.477	1240409.477	1240409.477	1240409.477
	Y	644348.3561	644348.3561	644274.2158	644524.2701	644524.2701	644524.2701	644673.0074	644673.0074	644673.0074	644673.0074
Analyte	Screening Level										
Conventional Parameters (µg/L)											
Acidity as calcium carbonate (CaCO3)	--	**369,000**	--	--	**664,000**	--	--	--	--	**596,000**	--
Alkalinity, bicarbonate (CaCO3)	--	**369,000**	--	--	**664,000**	--	--	--	--	**596,000**	--
Alkalinity, carbonate (CaCO3)	--	1,000 U	--	--	1,000 U	--	--	--	--	1,000 U	--
Alkalinity, hydroxide (CaCO3)	--	1,000 U	--	--	1,000 U	--	--	--	--	1,000 U	--
Ammonia as nitrogen	--	**1,710**	--	--	--	--	--	--	--	--	--
Chloride	--	**61,200**	--	--	**81,500**	--	--	--	--	**26,400**	--
Cyanide, Weak acid dissociable (WAD)	--	--	--	--	5 U	--	--	--	--	5 U	--
Methane	--	**4,580**	--	--	--	--	--	--	--	--	--
Nitrate + nitrite as nitrogen	--	**16**	--	--	10 U	--	--	--	--	**16**	--
Nitrate as nitrogen	--	**16**	--	--	10 U	--	--	--	--	10 U	--
Nitrite as nitrogen	--	10 U	--	--	10 U	--	--	--	--	**11**	--
Sulfate	--	**25,800**	--	--	**6,300**	--	--	--	--	**4,700**	--
Sulfide	--	**1,790**	--	--	--	--	--	--	--	--	--
Total dissolved solids	--	**486,000**	--	--	**803,000**	--	--	--	--	**625,000**	--
Total suspended solids	--	**16,700**	--	--	**4,700**	--	--	--	--	**22,800**	--
Total organic carbon	--	**10,800**	--	--	**10,800**	--	--	--	--	**7,370**	--
Conventional Parameters, Dissolved (µg/L)											
Total dissolved solids	--	--	--	--	--	--	--	**520**	**520**	--	--
Metals, Dissolved (µg/L)											
Antimony	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--
Arsenic	5	--	--	--	--	--	--	0.5 U	0.5 U	--	--
Barium	--	--	--	--	--	--	--	**17**	**17**	--	--
Beryllium	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--
Cadmium	--	--	--	--	--	--	--	0.2 U	0.2 U	--	--
Chromium	260	--	--	--	--	--	--	**0.3 J**	**0.3 J**	--	--
Chromium VI	50	--	--	--	--	--	--	0.03 U	0.03 U	--	--
Copper	3.1	--	--	--	--	--	--	1 U	1 U	--	--
Lead	8.1	--	--	--	--	--	--	0.2 U	0.2 U	--	--
Mercury	0.059	--	--	--	--	--	--	0.02 U	0.02 U	--	--
Nickel	8.2	--	--	--	--	--	--	**0.28 J**	**0.38 J**	--	--
Selenium	--	--	--	--	--	--	--	**0.38 J**	**0.42 J**	--	--
Silver	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--
Thallium	--	--	--	--	--	--	--	0.5 U	0.5 U	--	--
Zinc	81	--	--	--	--	--	--	**3.6 J**	10 U	--	--
Metals (µg/L)											
Arsenic	5	--	1 U	1 U	50 U	**1.11**	**1.11**	--	--	50 U	**1.08**
Barium	--	--	10 U	**25**	**33**	**62**	**64.5**	--	--	**22**	**12**
Cadmium	8.8	--	1 U	1 U	--	1 U	1 U	--	--	--	1 U
Calcium	--	**88,000**	--	--	**77,900**	--	--	--	--	**150,000**	--
Chromium	260	--	1 U	**5.07**	5 U	**22.9**	**24.1**	--	--	5 U	1 U
Chromium VI	50	--	5 U	5 U	11 U	5 U	5 U	--	--	11 U	5 U
Copper	3.1	--	--	--	2 U	--	--	--	--	2 U	--
Ferrous iron	--	**868**	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--
Lead	8.1	--	1 U	1 U	20 U	1 U	1 U	--	--	20 U	**1.97**
Magnesium	--	**24,400**	--	--	**50,000**	--	--	--	--	**37,000**	--
Manganese	100	--	--	--	--	--	--	--	--	--	--
Mercury	0.059	--	1 U	1 U	0.1 U	1 U	1 U	--	--	0.1 U	1 U
Nickel	8.2	--	--	--	10 U	--	--	--	--	10 U	--
Potassium	--	**11,100**	--	--	**37,400**	--	--	--	--	**11,800**	--
Selenium	71	--	1 U	1 U	--	1 U	1 U	--	--	--	**1.02**
Silver	1900	--	1 U	1 U	--	1 U	1 U	--	--	--	1 U
Sodium	--	**63,500**	--	--	**134,000**	--	--	--	--	**33,900**	--
Zinc	81	--	**14**	10 U	10 U	10 U	**21.5**	--	--	10 U	10 U
Total Petroleum Hydrocarbons (µg/L)											
Gasoline range hydrocarbons	800	250 U	**337**	50 U	--	50 U	50 U	--	--	250 U	50 U
Diesel range hydrocarbons	500	250 U	**716**	**489**	250 U	**486**	**529**	--	--	250 U	**292**

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	MW-5(O)		MW-6(O)	MW-7(O)			MW-8(O)			
	Location ID	**MW-5(O)**	**MW-5(O)**	**MW-6(O)**	**MW-7(O)**	**MW-7(O)**	**MW-7(O)**	**MW-8(O)**	**MW-8(O)**	**MW-8(O)**	**MW-8(O)**
	Sample ID	**MW-5(O)-0907**	**OMW-5_0301**	**OMW-6_0301**	**MW-7(O)-0907**	**OMW-7_0301**	**OMW-12_0301**	**MW-8(O)-10292013**	**MW-8(O)-FD-10292013**	**MW-8(O)-0907**	**OMW-8_0301**
	Sample Date	**09/18/2007**	**03/06/2001**	**03/06/2001**	**09/28/2007**	**03/06/2001**	**03/06/2001**	**10/29/2013**	**10/29/2013**	**09/28/2007**	**03/06/2001**
	Sample Type	**N**	**N**	**N**	**N**	**N**	**FD**	**N**	**FD**	**N**	**N**
	X	**1240368.505**	**1240368.505**	**1240495.214**	**1240251.11**	**1240251.11**	**1240251.11**	**1240409.477**	**1240409.477**	**1240409.477**	**1240409.477**
	Y	**644348.3561**	**644348.3561**	**644274.2158**	**644524.2701**	**644524.2701**	**644524.2701**	**644673.0074**	**644673.0074**	**644673.0074**	**644673.0074**
Analyte	**Screening Level**										
Motor oil range hydrocarbons	500	500 U	--	--	500 U	--	--	--	--	500 U	--
Oil	--	--	500 U	500 U	--	500 U	500 U	--	--	--	500 U
Polycyclic Aromatic Hydrocarbons (µg/L)											
1-Methylnaphthalene	--	0.1 U	--	--	0.1 U	--	--	0.01 U	0.01 U	0.1 U	--
2-Methylnaphthalene	--	0.1 U	--	--	0.1 U	--	--	0.01 U	0.01 U	0.1 U	--
Acenaphthene	3.3	0.1 U	**0.341**	0.1 U	0.1 U	0.1 U	0.1 U	**0.049**	**0.052**	0.1 U	0.2 U
Acenaphthylene	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Anthracene	9.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Benzo(a)anthracene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Benzo(a)pyrene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Benzo(b)fluoranthene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Benzo(g,h,i)perylene	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Benzo(k)fluoranthene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Chrysene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Dibenzo(a,h)anthracene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Dibenzofuran	--	0.1 U	--	--	0.1 U	--	--	0.01 U	0.01 U	0.1 U	--
Fluoranthene	3.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.018**	**0.021**	0.1 U	0.2 U
Fluorene	3	0.1 U	**0.379**	0.1 U	0.1 U	0.1 U	0.1 U	**0.048**	**0.05**	0.1 U	0.2 U
Indeno(1,2,3-c,d)pyrene	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Naphthalene	83	**0.33**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.011**	**0.016**	0.1 U	0.2 U
Phenanthrene	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	**0.11**	0.2 U
Pyrene	15	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.022**	**0.025**	0.1 U	0.2 U
Total cPAH TEQ	0.02	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.01 U	0.1 U	0.2 U
Semivolatile Organics (µg/L)											
1,2,4-Trichlorobenzene	0.48	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	6.1	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	960	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	--	--	--	--	--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)	14.3	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	3,600	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	2.4	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	73.3	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	200	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	1,400	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	3.4	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	390	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	37.4	--	--	--	--	--	--	--	--	--	--
2-Methylphenol (o-Cresol)	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	2	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl-phenyl ether	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--	--
4-Methylphenol (p-Cresol)	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--
Benzoic acid	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	0.53	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	1	--	--	--	--	--	--	--	--	--	--
Butylbenzyl phthalate	0.35	--	--	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	MW-5(O)		MW-6(O)	MW-7(O)			MW-8(O)			
	Location ID	MW-5(O)	MW-5(O)	MW-6(O)	MW-7(O)	MW-7(O)	MW-7(O)	MW-8(O)	MW-8(O)	MW-8(O)	MW-8(O)
	Sample ID	MW-5(O)-0907	OMW-5_0301	OMW-6_0301	MW-7(O)-0907	OMW-7_0301	OMW-12_0301	MW-8(O)-10292013	MW-8(O)-FD-10292013	MW-8(O)-0907	OMW-8_0301
	Sample Date	09/18/2007	03/06/2001	03/06/2001	09/28/2007	03/06/2001	03/06/2001	10/29/2013	10/29/2013	09/28/2007	03/06/2001
	Sample Type	N	N	N	N	N	FD	N	FD	N	N
	X	1240368.505	1240368.505	1240495.214	1240251.11	1240251.11	1240251.11	1240409.477	1240409.477	1240409.477	1240409.477
	Y	644348.3561	644348.3561	644274.2158	644524.2701	644524.2701	644524.2701	644673.0074	644673.0074	644673.0074	644673.0074
Analyte	**Screening Level**										
Dibenzofuran	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	740	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	1,100,000	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	140	--	--	--	--	--	--	--	--	--	--
Dinitro-o-cresol	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	0.2	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.2	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.2	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	1100	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	3.3	--	--	--	--	--	--	--	--	--	--
Isophorone	600	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	690	--	--	--	--	--	--	--	--	--	--
n-Nitrosodi-n-propylamine	0.32	--	--	--	--	--	--	--	--	--	--
n-Nitrosodiphenylamine	3.7	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	3	--	--	--	--	--	--	--	--	--	--
Phenol	216,000	--	--	--	--	--	--	--	--	--	--
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)											
1,1,1,2-Tetrachloroethane	7.4	--	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	11,000	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	4	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane	1,100	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	7.9	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	2,300	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	3.2	--	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.48	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	24	1 U	--	--	1 U	--	--	--	--	1 U	--
1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	6.1	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	4.2	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene, cis-	160	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene, trans-	130	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	15	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene (Mesitylene)	25	1 U	--	--	1 U	--	--	--	--	1 U	--
1,3-Dichlorobenzene	960	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene, cis-	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene, trans-	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichloro-2-butene, trans-	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	5	--	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	--	--	--	--	--	--	--	--	--	--	--
2-Butanone (MEK)	350,000	--	--	--	--	--	--	--	--	--	--
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)	--	--	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	--	--	--	--	--	--	--	--	--	--	--
Acetone	--	--	--	--	--	--	--	--	--	--	--
Acrolein	20	--	--	--	--	--	--	--	--	--	--
Acrylonitrile	5	--	--	--	--	--	--	--	--	--	--
Benzene	2.4	1 U	1.04 U	0.5 U	1 U	0.5 U	0.5 U	--	--	1 U	0.5 U
Bromobenzene	--	--	--	--	--	--	--	--	--	--	--
Bromochloromethane	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	0.5	--	--	--	--	--	--	--	--	--	--
Bromoform (Tribromomethane)	140	--	--	--	--	--	--	--	--	--	--

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	MW-5(O)		MW-6(O)	MW-7(O)			MW-8(O)			
	Location ID	MW-5(O)	MW-5(O)	MW-6(O)	MW-7(O)	MW-7(O)	MW-7(O)	MW-8(O)	MW-8(O)	MW-8(O)	MW-8(O)
	Sample ID	MW-5(O)-0907	OMW-5_0301	OMW-6_0301	MW-7(O)-0907	OMW-7_0301	OMW-12_0301	MW-8(O)-10292013	MW-8(O)-FD-10292013	MW-8(O)-0907	OMW-8_0301
	Sample Date	09/18/2007	03/06/2001	03/06/2001	09/28/2007	03/06/2001	03/06/2001	10/29/2013	10/29/2013	09/28/2007	03/06/2001
	Sample Type	N	N	N	N	N	FD	N	FD	N	N
	X	1240368.505	1240368.505	1240495.214	1240251.11	1240251.11	1240251.11	1240409.477	1240409.477	1240409.477	1240409.477
	Y	644348.3561	644348.3561	644274.2158	644524.2701	644524.2701	644524.2701	644673.0074	644673.0074	644673.0074	644673.0074
Analyte	Screening Level										
Bromomethane (Methyl bromide)	13	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	400	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	0.5	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	100	--	--	--	--	--	--	--	--	--	--
Chloroethane	12	--	--	--	--	--	--	--	--	--	--
Chloroform	1.2	--	--	--	--	--	--	--	--	--	--
Chloromethane	5.2	--	--	--	--	--	--	--	--	--	--
Cymene, p- (4-Isopropyltoluene)	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	0.5	--	--	--	--	--	--	--	--	--	--
Dibromomethane	--	--	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	--	--
Diisopropylether	--	--	--	--	--	--	--	--	--	--	--
Ethyl bromide (Bromoethane)	--	--	--	--	--	--	--	--	--	--	--
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	1 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	--	--	1 U	0.5 U
Ethylene dibromide (1,2-Dibromoethane)	2	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	0.2	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene (Cumene)	720	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	--	1 U	--	--	1 U	--	--	--	--	1 U	--
Methyl iodide (Iodomethane)	--	--	--	--	--	--	--	--	--	--	--
Methyl isobutyl ketone (MIBK)	11,000	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	440	1 U	--	--	1 U	--	--	--	--	1 U	--
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--
Styrene	78	--	--	--	--	--	--	--	--	--	--
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene (PCE)	3.3	--	--	--	--	--	--	--	--	--	--
Toluene	7,300	1 U	0.82 U	0.5 U	1 U	0.5 U	0.5 U	--	--	1 U	0.5 U
Total xylene (reported, not calculated)	--	--	1.03 U	1 U	--	1 U	1 U	--	--	--	1 U
Trichloroethene (TCE)	1.6	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	120	--	--	--	--	--	--	--	--	--	--
Vinyl acetate	7,800	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.5	--	--	--	--	--	--	--	--	--	--
n-Alkanes and Isoprenoids (µg/L)											
n-Hexane (C6)	--	1 U	--	--	1 U	--	--	--	--	1 U	--

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

Analyte	Area	RMW-10										RMW-20			
	Location ID	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-20	RMW-20	RMW-20	RMW-20
	Sample ID	RMW-10-0907	RMW-10-1_1200	RMW-10-110399	RMW-10-1199	RMW-10-0899	RMW-10-81099	RMW-10-0499	RMW-10-41499	RMW-10-0299	RMW-10-20999	RMW-20-10292013	RMW-20-0308	DUPLICATE 1-0308	RMW-20-0907
	Sample Date	09/20/2007	12/13/2000	11/03/1999	11/03/1999	08/10/1999	08/10/1999	04/14/1999	04/14/1999	02/09/1999	02/09/1999	10/29/2013	03/26/2008	03/26/2008	09/19/2007
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
	X	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1239889.797	1239889.797	1239889.797	1239889.797
	Y	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	643994.9976	643994.9976	643994.9976	643994.9976
Analyte	Screening Level														
Conventional Parameters (µg/L)															
Acidity as calcium carbonate (CaCO3)	--	421,000	--	780,000	--	--	810,000	--	740,000	--	740,000	--	630,000	--	610,000
Alkalinity, bicarbonate (CaCO3)	--	421,000	--	--	--	--	--	--	--	--	--	--	630,000	--	610,000
Alkalinity, carbonate (CaCO3)	--	1,000 U	--	--	--	--	--	--	--	--	--	--	1,000 U	--	1,000 U
Alkalinity, hydroxide (CaCO3)	--	1,000 U	--	--	--	--	--	--	--	--	--	--	1,000 U	--	1,000 U
Ammonia as nitrogen	--	4,210	--	8,800	8,800	15,000	15,000	14,000	14,000	8,700	8,700	--	--	--	--
Chloride	--	15,500	--	130,000	130,000	200,000	200,000	82,000	82,000	70,000	70,000	--	148,000	--	163,000
Cyanide, Weak acid dissociable (WAD)	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--	5 U
Methane	--	4,120	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrate + nitrite as nitrogen	--	10 U	--	10 U	10 U	17 U	17	50 U	50 U	10 U	10 U	--	10 U	--	10 U
Nitrate as nitrogen	--	10 U	--	--	--	--	--	--	--	--	--	--	10 U	--	10 U
Nitrite as nitrogen	--	10 U	--	--	--	--	--	--	--	--	--	--	10 U	--	10 U
Sulfate	--	4,400	--	14,000	--	--	--	--	--	--	--	--	9,800	--	4,900
Sulfide	--	50 U	--	50 U	50 U	50 U	50 U	50 U	50 U	90 U	90 U	--	--	--	--
Total dissolved solids	--	2,910,000	--	--	--	--	--	--	--	--	--	--	956,000	--	995,000
Total suspended solids	--	30,200	--	24,000	24,000	74,000	74,000	47,000	47,000	30,000	30,000	--	15,900	--	17,800
Total organic carbon	--	13,100	--	29,000	29,000	27,000	27,000	29,000	29,000	23,000	23,000	--	7,200	--	6,750
Conventional Parameters, Dissolved (µg/L)															
Total dissolved solids	--	--	--	1,000,000	1,000,000	1,100,000	1,100,000	890,000	890,000	890,000	890,000	1,900	--	--	--
Metals, Dissolved (µg/L)															
Antimony	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Arsenic	5	--	--	--	--	--	--	--	--	--	--	0.45 J	50 U	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	22	11	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Cadmium	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--
Chromium	260	--	--	--	--	--	--	--	--	--	--	4	5 U	--	--
Chromium VI	50	--	--	--	--	--	--	--	--	--	--	0.03 U	--	--	--
Copper	3.1	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--
Lead	8.1	--	--	--	--	--	--	--	--	--	--	0.2 U	20 U	--	--
Mercury	0.059	--	--	--	--	--	--	--	--	--	--	0.02 U	0.1 U	--	--
Nickel	8.2	--	--	--	--	--	--	--	--	--	--	0.88 J	10 U	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--
Silver	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--
Zinc	81	--	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--
Metals (µg/L)															
Arsenic	5	50 U	1 U	1 U	1 U	1	1	1	1	1 U	1 U	--	50 U	--	50 U
Barium	--	16	31.4	47	47	49	49	37	37	33	33	--	12	--	15
Cadmium	8.8	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	112,000	--	150,000	150,000	155,000	155,000	145,000	145,000	137,000	137,000	--	78,700	--	87,700
Chromium	260	10	17	96	96	88	88	160	160	75	75	--	5 U	--	5 U
Chromium VI	50	11 U	5 U	60 U	60 U	10 U	10 U	10 U	10 U	60 U	60 U	--	12 U	--	11 U
Copper	3.1	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	--	2 U
Ferrous iron	--	10,100	--	29,000	29,000	30,000	30,000	29,000	29,000	52,000	52,000	--	--	--	--
Iron	--	10,200	--	27,600	27,600	29,000	29,000	28,100	28,100	24,000	24,000	--	--	--	--
Lead	8.1	20 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	20 U	--	20 U
Magnesium	--	26,400	--	47,400	47,400	50,900	50,900	44,600	44,600	42,300	42,300	--	38,700	--	37,400
Manganese	100	694	--	1,040	1,040	1,220	1,220	1,030	1,030	970	970	--	--	--	--
Mercury	0.059	0.1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	--	0.1 U	--	0.1 U
Nickel	8.2	10 U	--	10 U	10 U	10 U	10 U	10	10	10 U	10 U	--	10 U	--	10 U
Potassium	--	14,300	--	--	--	--	--	--	--	--	--	--	140,000	--	124,000
Selenium	71	--	1.5	--	--	--	--	--	--	--	--	--	--	--	--
Silver	1900	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	30,300	--	164,000	164,000	193,000	193,000	--	--	--	--	--	155,000	--	149,000
Zinc	81	10 U	10 U	7	7	6	6	6	6	8	8	--	10 U	--	10 U
Total Petroleum Hydrocarbons (µg/L)															
Gasoline range hydrocarbons	800	--	50 U	--	--	--	--	--	--	--	--	--	250 U	--	--
Diesel range hydrocarbons	500	250 U	250 U	250	250	250 U	250 U	250 U	250 U	250 U	250 U	--	250 U	--	250 U

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

	Area	RMW-10										RMW-20			
	Location ID	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-20	RMW-20	RMW-20	RMW-20
	Sample ID	RMW-10-0907	RMW-10-1_1200	RMW-10-110399	RMW-10-1199	RMW-10-0899	RMW-10-81099	RMW-10-0499	RMW-10-41499	RMW-10-0299	RMW-10-20999	RMW-20-10292013	RMW-20-0308	DUPLICATE 1-0308	RMW-20-0907
	Sample Date	09/20/2007	12/13/2000	11/03/1999	11/03/1999	08/10/1999	08/10/1999	04/14/1999	04/14/1999	02/09/1999	02/09/1999	10/29/2013	03/26/2008	03/26/2008	09/19/2007
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
	X	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1239889.797	1239889.797	1239889.797	1239889.797
	Y	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	643994.9976	643994.9976	643994.9976	643994.9976
Analyte	**Screening Level**														
Motor oil range hydrocarbons	500	500 U	--	--	--	--	--	--	--	--	--	--	500 U	--	500 U
Oil	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/L)															
1-Methylnaphthalene	--	0.1 U	--	--	--	--	--	--	--	--	--	--	0.1 U	0.1 U	1 U
2-Methylnaphthalene	--	0.1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Acenaphthene	3.3	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Acenaphthylene	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Anthracene	9.6	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Benzo(a)anthracene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Benzo(a)pyrene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Benzo(b)fluoranthene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Benzo(g,h,i)perylene	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Benzo(k)fluoranthene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Chrysene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Dibenzo(a,h)anthracene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Dibenzofuran	--	0.1 U	--	--	1 U	1 U	--	1 U	--	1 U	--	--	0.1 U	0.1 U	--
Fluoranthene	3.3	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Fluorene	3	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Indeno(1,2,3-c,d)pyrene	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Naphthalene	83	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Phenanthrene	--	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Pyrene	15	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Total cPAH TEQ	0.02	0.1 U	0.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	0.1 U	0.1 U	1 U
Semivolatile Organics (µg/L)															
1,2,4-Trichlorobenzene	0.48	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
1,2-Dichlorobenzene	6.1	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
1,3-Dichlorobenzene	960	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
1,4-Dichlorobenzene	5	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
2,2'-Oxybis (1-chloropropane)	14.3	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
2,4,5-Trichlorophenol	3,600	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
2,4,6-Trichlorophenol	2.4	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
2,4-Dichlorophenol	73.3	--	--	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	--	--	5 U
2,4-Dimethylphenol	200	--	--	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	--	--	1 U
2,4-Dinitrophenol	1,400	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U
2,4-Dinitrotoluene	3.4	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
2,6-Dinitrotoluene	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
2-Chloronaphthalene	390	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
2-Chlorophenol	37.4	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
2-Methylphenol (o-Cresol)	--	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	1 U
2-Nitroaniline	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
2-Nitrophenol	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
3,3'-Dichlorobenzidine	2	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
3-Nitroaniline	--	--	--	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	--	--	--	5 U
4-Bromophenyl-phenyl ether	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
4-Chloro-3-methylphenol	--	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	5 U
4-Chloroaniline	--	--	--	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	--	--	5 U
4-Chlorophenyl phenyl ether	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
4-Methylphenol (p-Cresol)	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
4-Nitroaniline	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
4-Nitrophenol	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
Benzoic acid	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U
Benzyl alcohol	--	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
bis(2-Chloroethoxy)methane	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
bis(2-Chloroethyl)ether	0.53	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	1 U
bis(2-Ethylhexyl)phthalate	1	--	--	1 U	1 U	1 U	1 U	1 U	1 U	**5.8**	**5.8**	--	--	--	1 U
Butylbenzyl phthalate	0.35	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Carbazole	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

Analyte	Area	RMW-10										RMW-20			
	Location ID	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-20	RMW-20	RMW-20	RMW-20
	Sample ID	RMW-10-0907	RMW-10-1_1200	RMW-10-110399	RMW-10-1199	RMW-10-0899	RMW-10-81099	RMW-10-0499	RMW-10-41499	RMW-10-0299	RMW-10-20999	RMW-20-10292013	RMW-20-0308	DUPLICATE 1-0308	RMW-20-0907
	Sample Date	09/20/2007	12/13/2000	11/03/1999	11/03/1999	08/10/1999	08/10/1999	04/14/1999	04/14/1999	02/09/1999	02/09/1999	10/29/2013	03/26/2008	03/26/2008	09/19/2007
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
	X	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1239889.797	1239889.797	1239889.797	1239889.797
	Y	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	643994.9976	643994.9976	643994.9976	643994.9976
Analyte	Screening Level														
Dibenzofuran	--	--	--	1 U	--	--	1 U	--	1 U	--	1 U	--	--	--	1 U
Diethyl phthalate	740	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Dimethyl phthalate	1,100,000	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Di-n-butyl phthalate	140	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Dinitro-o-cresol	--	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	--	--	10 U
Di-n-octyl phthalate	0.2	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Hexachlorobenzene	0.2	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Hexachlorobutadiene	0.2	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	1 U
Hexachlorocyclopentadiene	1100	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
Hexachloroethane	3.3	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	1 U
Isophorone	600	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Nitrobenzene	690	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
n-Nitrosodi-n-propylamine	0.32	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	5 U
n-Nitrosodiphenylamine	3.7	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	1 U
Pentachlorophenol	3	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	5 U
Phenol	216,000	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	1 U
tert-Amyl methyl ether (TAME)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organics (µg/L)															
1,1,1,2-Tetrachloroethane	7.4	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,1,1-Trichloroethane	11,000	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,1,2,2-Tetrachloroethane	4	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	1,100	--	--	--	--	--	--	--	--	2 U	2 U	--	2 U	--	0.2 U
1,1,2-Trichloroethane	7.9	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,1-Dichloroethane	2,300	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,1-Dichloroethene	3.2	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,1-Dichloropropene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,2,3-Trichlorobenzene	--	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.5 U
1,2,3-Trichloropropane	--	--	--	--	--	--	--	--	--	1 U	1 U	--	2 U	--	0.5 U
1,2,4-Trichlorobenzene	0.48	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.5 U
1,2,4-Trimethylbenzene	24	1 U	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,2-Dibromo-3-chloropropane	--	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.5 U
1,2-Dichlorobenzene	6.1	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,2-Dichloroethane	4.2	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,2-Dichloroethene, cis-	160	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,2-Dichloroethene, trans-	130	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,2-Dichloropropane	15	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,3,5-Trimethylbenzene (Mesitylene)	25	1 U	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,3-Dichlorobenzene	960	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,3-Dichloropropane	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,3-Dichloropropene, cis-	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,3-Dichloropropene, trans-	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
1,4-Dichloro-2-butene, trans-	--	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	1 U
1,4-Dichlorobenzene	5	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
2,2-Dichloropropane	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
2-Butanone (MEK)	350,000	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	1 U
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.5 U
2-Chlorotoluene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
2-Hexanone (Methyl butyl ketone)	--	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	3 U
4-Chlorotoluene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Acetone	--	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	3 U
Acrolein	20	--	--	--	--	--	--	--	--	50 U	50 U	--	50 U	--	5 U
Acrylonitrile	5	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	1 U
Benzene	2.4	1 U	0.5 U	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Bromobenzene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Bromochloromethane	--	--	--	--	**780,000**	**810,000**	--	**740,000**	--	**740,000**	1 U	--	1 U	--	0.2 U
Bromodichloromethane	0.5	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Bromoform (Tribromomethane)	140	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U

Table 6-12
Hilton Avenue Properties – Former Olivine Groundwater Results

Analyte	Area	RMW-10										RMW-20			
	Location ID	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-10	RMW-20	RMW-20	RMW-20	RMW-20
	Sample ID	RMW-10-0907	RMW-10-1_1200	RMW-10-110399	RMW-10-1199	RMW-10-0899	RMW-10-81099	RMW-10-0499	RMW-10-41499	RMW-10-0299	RMW-10-20999	RMW-20-10292013	RMW-20-0308	DUPLICATE 1-0308	RMW-20-0907
	Sample Date	09/20/2007	12/13/2000	11/03/1999	11/03/1999	08/10/1999	08/10/1999	04/14/1999	04/14/1999	02/09/1999	02/09/1999	10/29/2013	03/26/2008	03/26/2008	09/19/2007
	Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
	X	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1240340.712	1239889.797	1239889.797	1239889.797	1239889.797
	Y	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	644278.0134	643994.9976	643994.9976	643994.9976	643994.9976
Analyte	**Screening Level**														
Bromomethane (Methyl bromide)	13	--	--	--	--	--	--	--	--	2 U	2 U	--	1 U	--	0.2 U
Carbon disulfide	400	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	**0.7**
Carbon tetrachloride	0.5	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Chlorobenzene	100	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Chloroethane	12	--	--	--	--	--	--	--	--	2 U	2 U	--	1 U	--	0.2 U
Chloroform	1.2	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Chloromethane	5.2	--	--	--	--	--	--	--	--	2 U	2 U	--	1 U	--	0.2 U
Cymene, p- (4-Isopropyltoluene)	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Dibromochloromethane	0.5	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Dibromomethane	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Dichloromethane (Methylene chloride)	94	--	--	--	--	--	--	--	--	2 U	2 U	--	2 U	--	0.3 U
Diisopropylether	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl bromide (Bromoethane)	--	--	--	--	--	--	--	--	--	2 U	2 U	--	2 U	--	0.2 U
Ethyl tert-butyl ether (ETBE)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	2,100	1 U	0.5 U	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Ethylene dibromide (1,2-Dibromoethane)	2	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Hexachlorobutadiene	0.2	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.5 U
Isopropylbenzene (Cumene)	720	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
m,p-Xylene	--	1 U	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.4 U
Methyl iodide (Iodomethane)	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Methyl isobutyl ketone (MIBK)	11,000	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	1 U
Methyl tert-butyl ether (MTBE)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	83	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.5 U
n-Butylbenzene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
n-Propylbenzene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
o-Xylene	440	1 U	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
sec-Butylbenzene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Styrene	78	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
tert-Butyl alcohol (2-Methyl-2-propanol)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	--	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Tetrachloroethene (PCE)	3.3	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Toluene	7,300	1 U	0.5 U	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Total xylene (reported, not calculated)	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene (TCE)	1.6	--	--	--	--	--	--	--	--	1 U	1 U	--	1 U	--	0.2 U
Trichlorofluoromethane	120	--	--	--	--	--	--	--	--	2 U	2 U	--	1 U	--	0.2 U
Vinyl acetate	7,800	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	0.2 U
Vinyl chloride	0.5	--	--	--	--	--	--	--	--	2 U	2 U	--	1 U	--	0.2 U
n-Alkanes and Isoprenoids (µg/L)															
n-Hexane (C6)	--	1 U	--	--	--	--	--	--	--	--	--	--	1 U	--	--

Table 6-13
RI Conclusions and Protectiveness

Contaminants of Concern	Principle Remedial Investigation Findings	Fate and Transport Remedial Investigation Findings	Current and Future Potentially Complete Pathways and Receptors
Landfill and Perimeter Subarea			
Landfill refuse	Delineation of landfill refuse is complete.	Landfill refuse is contained within placement footprint.	Direct contact (dermal contact, incidental ingestion) for patrons and workers.
			Inhalation of impacted dust during excavation or other construction-related activities for patrons and workers.
Landfill associated gas (e.g., methane)	Distribution of landfill gas has been adequately delineated by direct monitoring.	Landfill gas is limited to landfill perimeter area.	Vapor inhalation by workers and patrons, where gas accumulation is a potential (e.g., existing and future buildings).
Metals, TPH-G, TPH-D, TPH-MO, PAHs, Benzene, and BEHP in groundwater	Delineation of landfill-related metals in groundwater is complete.	Landfill-associated dissolved metals in groundwater appear to attenuate with distance from the landfill, but are co-mingled with metals (in particular chromium) from historical operations within the C Street Properties subarea.	Direct contact of contaminated groundwater during excavation or other construction-related activities for workers.
			Transport to surface water/sediment is addressed by the comparable pathway in an adjacent subarea located closer to potential receptors (surface water/sediment).
		Dissolved metals exceed screening levels along ASB at wells RMW-2, RMW-5, and RMW-7.	Future conditions for FS evaluation will assume a pathway from the landfill into sediment and surface water and associated impacted receptors, based on future marina conditions (current ASB).
C Street Properties Subarea			
Surface and subsurface soil TPH-G, TPH-D, TPH-MO, PAHs, benzene, and metals	Soil impacts are delineated in soil as shown in Figures 6-4 to 6-7.	Soil impacts have the potential for erosion to adjacent surface water and sediment.	Direct contact (dermal contact, incidental ingestion) of contaminated soils for patrons and workers.
		Soil impacts have the potential to leach to groundwater.	Surface soils runoff to sediments from erosion to stormwater drainage system, with subsequent exposure to aquatic ecological and human receptors via consumption of seafood.
Groundwater TPH-G, TPH-D, TPH-MO, PAHs, benzene, and metals	Groundwater impacts are delineated in groundwater as shown in Figures 6-4 to 6-7.	Attenuation of petroleum and related constituents with the exception of porewater at one location (CW-PW-05) as shown in Figures 6-4 and 6-5.	Direct contact (dermal contact, incidental ingestion) for workers during excavation or other construction-related activities.
			Inhalation of contaminated indoor air (via vapor intrusion) by volatile contaminants originated from shallow groundwater.
			Groundwater protective of surface water and sediment for aquatic and human health receptors.
Petroleum soil gas	Petroleum soil gas is present in areas as shown in Figure 6-9.	Attenuation of petroleum soil gas is limited to areas of existing soil and/or groundwater contamination.	Soil gas inhalation by workers and patrons, where gas accumulation is a potential[1] (e.g., current and future buildings).
NAPL saturation	Free product is no longer observed at the Site.	Residual saturation has been estimated at 19,000 ppm TPH based on petrophysical testing.	Free product is no longer observed at the site. However, areas of the Site with TPH concentrations exceeding the residual saturation concentration of 19,000 ppm may warrant further evaluation in the FS.
Metals in sediment adjacent to Colony Wharf dock	Copper, zinc, and TBT impacts in sediment off-shore of C Street Properties as shown in Figure 6-7.	Groundwater from the Site may recontaminate sediments in Whatcom Waterway.	Benthic and aquatic organisms may be directly exposed to surface water or sediment from impacted groundwater migration.
			Higher trophic food chain effects associated with the potential bioaccumulation of contaminants.
			Human consumption of seafood impacted by discharge of groundwater to sediment or surface water.
			Direct contact (dermal contact) by workers with impacted sediment during excavation or other construction-related activities.
Hilton Avenue Properties Subarea			
Surface and subsurface soil TPH-G, PAHs, and metals	Soil impacts are delineated in soil as shown in Figures 6-4 to 6-7.	Soil impacts have the potential for erosion to adjacent surface water/sediment.	Direct contact (dermal contact, incidental ingestion) for patrons and workers during excavation or other construction-related activities.
		Soil impacts are not a source to groundwater.	Surface soils runoff to sediments from erosion to the stormwater drainage system.

Notes:
1. This exposure pathway also addresses inhalation risk associated with soil and groundwater sources of volatile compounds that may accumulate in indoor air.

ASB = Aerated Stabilization Basin
BEHP = bis(2-ethylhexyl)phthalate
COC = contaminant of concern
FS = Feasibility Study
NAPL = non-aqueous phase liquid
PAH = polycyclic aromatic hydrocarbon
ppm = parts per million
RI = Remedial Investigation
TBT = tributyltin
TPH-D = total petroleum hydrocarbons - diesel range
TPH-G = total petroleum hydrocarbons - gasoline range
TPH-MO = total petroleum hydrocarbons - motor oil range

Table 7-1
Remedial Action Objectives

Subarea	Remedial Action Objective
Landfill Footprint and Perimeter	**RAO 1** — Prevent direct contact with soil, groundwater, and refuse impacted with metals, TPH, PAHs, benzene, and BEHP, and prevent erosion of soils.
	RAO 2 — Prevent inhalation of landfill-associated gas (e.g., methane) and impacted dust.
C Street Properties	**RAO 3** — Prevent direct contact with soils and groundwater impacted with metals, TPH, PAHs, and benzene, and prevent erosion of soils.
	RAO 4 — Prevent inhalation of contaminated indoor air[1], vapors, soil gas, and impacted dust.
Hilton Avenue Properties	**RAO 5** — Prevent direct contact with and erosion of soils impacted with metals, TPH, and PAHs.
Site-wide	**RAO 6** — Meet groundwater cleanup standards throughout the Site, outside the Landfill Footprint.

Note:

1. Inhalation risk associated with soil and shallow groundwater sources of volatile compounds that may accumulate in indoor air (via vapor intrusion).

BEHP = bis (2-ethylhexyl) phthalate
PAHs = polycyclic aromatic hydrocarbons
RAO = remedial action objective
TPH = total petroleum hydrocarbon

Table 7-2a
Chemical-specific ARARs

Authorizing Statute	Criteria	Citation	Description
Clean Water Act / National Toxics Rule	Federal Ambient Water Quality Criteria	33 USC 1251, 40 CFR 131	Requires the establishment of guidelines and standards to control the discharge of pollutants to waters of the United States. Human health criteria contained in the NTR are State Water Criteria under WAC 173-201a.
Surface Water Quality Standards	State Ambient Water Quality Criteria	Chapter 90.48 RCW, Chapter 173-201A WAC	Establishes water quality standards for protection of human health and for protection of aquatic life (for both acute and chronic exposure durations).
Federal Clean Air Act	National Ambient Air Quality Standards Ambient Air Quality Monitoring Standards of Performance for New Stationary Sources National Emission Standards for Hazardous Air Pollutants National Emission Standards for Hazardous Air Pollutants for Source Categories	42 USC 7401, 40 CFR 50, 40 CFR 58, 40 CFR 60, 40 CFR 61, 40 CFR 63	Establishes air quality standards for protection of human health. Applies to emissions from vapor treatment systems constructed as part of the cleanup.
Washington Clean Air Act	General Regulations for Air Pollution Sources Controls for New Sources for Toxic Air Pollutants Ambient Air Quality Standards for Particulate Matter Emission Standards and Controls for Sources Emitting VOCs	Chapter 70.94 and 43.21A RCW WAC 173-400 WAC 173-460 WAC 173-470 WAC 173-490	Establishes air quality standards for protection of human health. Applies to emissions from vapor treatment systems constructed as part of the cleanup.
Sediment Management Standards	State Sediment Quality Criteria	Chapters 90.48 and 70.105D RCW, Chapter 173-204 WAC	Establishes numerical standards for the protection of benthic invertebrates in marine sediments, including freshwater SCOs protective of aquatic organisms.

ARAR = Applicable, Relevant, and Appropriate Requirements
CFR = Code of Federal Regulations
EPA = U.S. Environmental Protection Agency
NTR = National Toxics Rule
RCW = Revised Code of Washington
SCO = Sediment Cleanup Objective
USC = United States Code
VOC = volatile organic compound
WAC = Washington Administrative Code

Table 7-2b
Action- or Location-specific ARARs

Authorizing Statute	Criteria	Citation	Description
NPDES	Point source discharge of pollutants to surface waters of the United States	40 CFR Parts 122 - 125	If construction-generated dewatering water or stormwater from the cleanup action is treated for discharging pollutants into waters of the State of Washington, a NPDES Construction Stormwater General permit is required.
Discharge Permit Program		Chapter 90.48 RCW, Chapter 173-226 WAC	
Solid Waste Disposal Act	Regulating any handling, treatment, or off-site disposal of non-hazardous solid waste	40 CFR 257 - 258	These regulations establish federal and statewide minimum standards for solid waste management and handling.
Solid Waste Handling Standards		Chapter 173-350 WAC, Chapter 70.95 RCW	
RCRA	Generation and transportation of hazardous waste and waste management activities at TSDFs; off-site land disposal considerations; State equivalent of RCRA requirements for designating certain solid wastes as "dangerous waste"	42 USC 6921-22; 40 CFR Parts 260, 261, and 268	Any dangerous waste transported from the Site must be managed in accordance with these regulations.
Washington Hazardous Waste Management Act		Chapter 173-303 WAC; Chapter 70.105 RCW; Chapter 173-303	
NEPA	Consideration, evaluation, and analysis of environmental impacts of major proposed actions and definition of appropriate measures for impact mitigation	42 USC Chapter 43.21C	SEPA checklist is expected to satisfy these requirements. Requirements are the functional equivalent of NEPA. Construction activities associated with implementing a MTCA CAP.
SEPA		Chapter 197-11 WAC	
OSHA	Governing worker safety during the cleanup action implementation	29 CFR 1910.120	Compliance is met through preparation and implementation of Site-specific health and safety plan(s) with appropriate controls, worker training and certifications, and occupational monitoring.
WISHA		Chapter 296-62 WAC	
Washington State Water Well Construction Regulations	Regulating groundwater well construction as part of the cleanup action	Chapter 18.104 RCW, Chapter 173-160 WAC	These regulations establish minimum standards for the construction and decommissioning of all wells in the State of Washington.
USDOT/WSDOT	Regulating transport of hazardous materials	49 CFR Parts 171 - 180	These regulations apply if excavated soils need to be transported off-site as part of the cleanup action.
Endangered Species Act	Effects on listed endangered or threatened species	16 USC 1531 et seq., 50 CFR Part 17	Actions authorized, funded, or carried out by federal agencies may not jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats.

Notes:
CAP = Cleanup Action Plan
CFR = Code of Federal Regulations
MTCA = Model Toxics Control Act
NEPA = National Environmental Policy Act
NPDES = National Pollutant Discharge Elimination System
OSHA = Occupational Safety and Helath Administration
RCRA = Resource Conservation and Recovery Act
RCW = Revised Code of Washington
SEPA = State Environmental Policy Act
TSDF = treatment, storage, and disposal facility
USC = United States Code
USDOT = U.S. Department of Transportation
WAC = Washington Administrative Code
WISHA = Washington Industrial Safety and Health Act
WSDOT = Washington State Department of Transportation

Table 7-3
Permit Exemptions and Applicable Substantative Requirements

Authorizing Statute	Criteria	Citation	Description
Washington State Shoreline Management Act	Protection of shoreline environmental resources and protection of the public's right to access and use the shorelines	Chapter 173-14 WAC; RCW 90.58; City of Bellingham Shoreline Permit under SMP, BMC Title 22	It is expected that the cleanup action would meet the conditions of the SMP's Waterfront District Shoreline Mixed Use designation, consistent with the SMP.
Major Grading Permit	Standards and requirements for obtaining a grading permit for grading projects that involve more than 500 cubic yards of grading	City of Bellingham Grading Ordinance, BMC Title 16.70	The City standards and requirements will be integrated into the construction plans and specifications for the cleanup action to ensure that the cleanup action complies with the substantive requirements of the City grading ordinance.
Stormwater Permit	Requirements for obtaining a stormwater permit	City of Bellingham Stormwater Requirements, BMC Title 15.42	It is expected that the cleanup action would need to meet the substantive requirements of a City Stormwater Permit.
Critical Areas Report	Evaluation report on potential geologically hazardous areas	City of Bellingham, BMC Title 16.55	It is expected that the cleanup action would reduce the risk associated with the geological hazards identified for the Site, based on the Critical Areas Report (particularly for erosion and seismic hazards).

Notes:
BMC = Bellingham Municipal Code
RCW = Revised Code of Washington
SMP = Shoreline Master Program
WAC = Washington Administrative Code

Table 7-4
Groundwater Cleanup Levels

Analyte (by Group)	Groundwater Cleanup Level for Unrestricted Land Use (µg/L)	
	Value	Basis[1]
Total Petroleum Hydrocarbons (TPH)		
Gasoline Range Hydrocarbons	800	*(sw-a)*
Diesel Range Hydrocarbons	500	*(sw-a)*
Oil Range Hydrocarbons	500	*(sw-a)*
Total TPHs	800	*(sw-a)*
Heavy Metals		
Arsenic	5	*(back)*
Cadmium	8.8	*(ma-cwa)*
Chromium (Total)	260	*(sed)*
Chromium (III)	93700	*(sw-b)*
Chromium (VI)	50	*(ma-wac)*
Copper	3.1	*(ma-wac)*
Lead	8.1	*(ma-wac)*
Mercury	0.059	*(sed)*
Nickel	8.2	*(ma-wac)*
Selenium	71	*(ma-wac)*
Silver	1.9	*(ma-wac)*
Zinc	81	*(ma-wac)*
Volatile Organic Compounds		
Benzene	2.4	*(vi-b)*
Polycyclic Aromatic Hydrocarbons (PAHs)		
Acenaphthene	3.3	*(sed)*
Anthracene	9.6	*(sed)*
Fluoranthene	3.3	*(sed)*
Fluorene	3	*(sed)*
Pyrene	15	*(sed)*
Naphthalene	83	*(sed)*
Benz(a)anthracene	0.02	*(pql)*
Benzo(a)pyrene	0.02	*(pql)*
Benzo(b)fluoranthene	0.02	*(pql)*
Benzo(k)fluoranthene	0.02	*(pql)*
Chrysene	0.02	*(pql)*
Dibenzo(a,h)anthracene	0.02	*(pql)*
Indeno(1,2,3-cd)pyrene	0.02	*(pql)*
Total cPAHs TEQ	0.02	*(pql)*
Other Semi-Volatile Organics		
Bis(2-ethylhexyl) phthalate	1	*(pql)*

Note:

1. Refer to Table 4-1 of the RI/FS for basis/derivation of groundwater screening levels, which are adopted as groundwater cleanup levels in the FS. Cleanup levels are the most stringent value, protective of all exposure pathways.

(back) = Natural Background
(ma-cwa) = Surface Water, Marine Aquatic Life, Clean Water Act §304
(ma-wac) = Surface Water, Marine Aquatic Life, Ch. 173-201A WAC
(pql) = Applicable Practical Quantitation Level
(sed) = Calculated Porewater Concentration Protective of Marine Sediment
(sw-a) = Surface Water, Method A, Most Restrictive

(sw-b) = Surface Water, Method B, Most Restrictive, Adjusted for Fish Consumption Rate
(vi-b) = Vapor Intrusion, Method B for Unrestricted Land Use
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
FS = Feasibility Study
RI = Remedial Investigation
TEQ = toxic equivalent quotient
µg/L = microgram per liter

Table 7-5
Soil Cleanup Levels

Analyte (by Group)	Landfill Footprint and C Street Properties Subareas: Cleanup Level for Unrestricted Land Use - Unsaturated Soil (mg/kg) Value	Basis[1]	Landfill Footprint and C Street Properties Subareas: Cleanup Level for Unrestricted Land Use - Saturated Soil (mg/kg) Value	Basis[1]	Hilton Avenue Properties Subarea: Cleanup Level for Unrestricted Land Use (mg/kg) Value	Basis[1]
Total Petroleum Hydrocarbons (TPH)						
Gasoline Range Hydrocarbons	30	*(mA)*	30	*(mA)*	--	--
Diesel Range Hydrocarbons	2000	*(mA)*	2000	*(mA)*	--	--
Oil Range Hydrocarbons	2000	*(mA)*	2000	*(mA)*	--	--
Total TPHs	2000	*(mA)*	2000	*(mA)*	--	--
Heavy Metals						
Arsenic	7	*(back)*	7	*(back)*	20	*(mA)*
Cadmium	1.2	*(gwl-u)*	1	*(back)*	80	*(mB)*
Chromium (Total)	5200	*(gwl-u)*	260	*(gwl-s)*	--	--
Chromium (VI)	48	*(back)*	48	*(back)*	240	*(mB)*
Copper	36	*(back)*	36	*(back)*	3200	*(mB)*
Lead	250	*(mA)*	81	*(gwl-s)*	250	*(mA)*
Mercury	2	*(gwl-u)*	0.1	*(gwl-s)*	24	*(mB)*
Nickel	48	*(back)*	48	*(back)*	1600	*(mB)*
Selenium	7.4	*(gwl-u)*	1	*(pql)*	400	*(mB)*
Silver	0.32	*(gwl-u)*	0.02	*(pql)*	400	*(mB)*
Zinc	100	*(gwl-u)*	85	*(back)*	24000	*(mB)*
Volatile Organic Compounds						
Benzene	0.034	*(gwl-u)*	0.005	*(pql)*	--	--
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	2.5	*(gwl-u)*	0.13	*(gwl-s)*	--	--
Anthracene	34	*(gwl-u)*	1.7	*(gwl-s)*	--	--
Fluoranthene	25	*(gwl-u)*	1.3	*(gwl-s)*	--	--
Fluorene	3.6	*(gwl-u)*	0.18	*(gwl-s)*	--	--
Pyrene	160	*(gwl-u)*	8	*(gwl-s)*	--	--
1-Methylnaphthalene	35	*(mB)*	35	*(mB)*	--	--
2-Methylnaphthalene	320	*(mB)*	320	*(mB)*	--	--
Naphthalene	16	*(gwl-u)*	0.8	*(gwl-s)*	1600	*(mB)*
Benz(a)anthracene	1.1	*(gwl-u)*	0.056	*(gwl-s)*	--	--
Benzo(a)pyrene	0.14	*(mB)*	0.14	*(mB)*	--	--
Benzo(b)fluoranthene	1.4	*(mB)*	0.19	*(gwl-s)*	--	--
Benzo(k)fluoranthene	3.7	*(gwl-u)*	0.19	*(gwl-s)*	--	--
Chrysene	1.2	*(gwl-u)*	0.062	*(gwl-s)*	--	--
Dibenzo(a,h)anthracene	0.14	*(mB)*	0.14	*(mB)*	--	--
Indeno(1,2,3-cd)pyrene	1.4	*(mB)*	0.55	*(gwl-s)*	--	--
Total cPAHs TEQ	0.14	*(mB)*	0.14	*(mB)*	0.14	*(mB)*
Other Semi-Volatile Organics						
Bis(2-ethylhexyl) phthalate	17	*(gwl-u)*	0.86	*(gwl-s)*	--	--

Notes:

1. Soil cleanup levels are based on Table 4-2a of the RI/FS for unrestricted land use. Cleanup levels are the most stringent value: 1) protective of groundwater and adjusted upward for background or Method A criteria, for the Landfill Footprint and C Street Properties Subareas; and 2) protective of direct contact for the Hilton Avenue Properties Subarea.

2. Soil cleanup levels based on protection of groundwater may be adjusted based on site-specific leaching tests during development of the cleanup action plan, during remedial design, or during compliance monitoring.

(back) = Natural Background
(gwl-s) = Saturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use
(gwl-u) = Unsaturated Soil Concentration Protective of Leachability to Groundwater for Unrestricted Land Use
(mA) = Soil, Direct Contact, Method A for Unrestricted Land Use
(mB) = Soil, Direct Contact (ingestion only), Method B, Most-Restrictive Standard Formula Value for Unrestricted Land Use
(pql) = Applicable Practical Quantitation Level
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
FS = Feasibility Study
mg/kg = milligram per kilogram
RI = Remedial Investigation
TEQ = toxic equivalent quotient
WAC = Washington Administrative Code

Table 7-6
Air (Soil Vapor) and Landfill Gas Cleanup Levels

Analyte	Air and Landfill Gas Cleanup Level ($\mu g/m^3$)	
	Value	Basis[1]
Methane	10% LEL	*(air quality)*
C_5-C_8 Aliphatic Hydrocarbons	2,700	*(indoor air - non carc)*
C_9-C_{12} Aliphatic Hydrocarbons	140	*(indoor air - non carc)*
C_9-C_{12} Aromatic Hydrocarbons	180	*(indoor air - non carc)*
1,3-Butadiene	0.08	*(indoor air - carc)*
2-Methylnapththalene	1.4	*(indoor air - non carc)*
Benzene	0.32	*(indoor air - carc)*
Ethylbenzene	460	*(indoor air - non carc)*
m,p -Xylene	46	*(indoor air - non carc)*
Methyl Tert-Butyl Ether	1,400	*(indoor air - non carc)*
Naphthalene	1.4	*(indoor air - non carc)*
o-Xylene	46	*(indoor air - non carc)*
Toluene	2,200	*(indoor air - non carc)*

Note:

1. Refer to Table 4-3 of the RI/FS for basis/derivation of air (soil vapor) and landfill gas screening levels, which are adopted as air/landfill gas cleanup levels in the FS. Cleanup levels are the most stringent value, protective of all exposure pathways.

(carc) = carcinogenic
(non-carc) = non-carcinogenic
FS = Feasibility Study
RI = Remedial Investigation
$\mu g/m^3$ = microgram per cubic meter

Table 8-1
Preliminary Remedial Technology Screening

Response Action	Remedial Technology	Process Option	Medium	Applicability	Effectiveness	Implementability	Cost	Retained for Consideration
Institutional Controls	Environmental Covenants	Use Restrictions	Soil/ Groundwater	All COCs	Yes	Yes	Low	Yes
Engineering Controls	Passive Controls	Landfill Gas Collection and Vapor Intrusion Controls	Soil Gas	CH_4, TPH, VOCs	Yes	Yes	Low	Yes
Containment	Engineered Capping	Physical Barrier Cap [a]	Soil	All COCs	Yes	Yes	Low	Yes
		Reduced-permeability Cap [b]	Soil/ Groundwater	All COCs	Yes	Yes	Low	Yes
		Low-permeability Cap [c]	Soil/ Groundwater	All COCs	Yes	Yes	Medium	Yes
		Composite Cap	Soil	All COCs	Yes	Limited	High	No, due to limited implementability, relatively higher costs, and small incremental benefits
Physical Diversion	Barriers	Clay Berm/ASB Water Levels [d]	Groundwater	All COCs	Yes	Already Implemented	Already Constructed	Yes
		Sheetpile Wall	Groundwater	All COCs	Yes	Yes	Medium	Yes
		Slurry Wall	Groundwater	All COCs	Yes	Yes	Medium	Yes
		Grout Wall	Groundwater	All COCs	Yes	Yes	High	Yes
In Situ Treatment	Biological, Physical, and/or Chemical Treatment	Monitored Natural Attenuation [e]	Soil	TPH	Yes	Yes	Low	Yes
			Groundwater	Organic and Inorganic COCs	Yes	Yes	Low	Yes
			Soil Gas	Methane	Yes	Yes	Low	Yes
		Bioremediation	Soil/ Groundwater	Organic COCs	Limited	Yes	Low	Yes, but in combination with other technologies (air sparging at low flow rates)
		Soil Vapor Extraction	Soil	VOCs and SVOCs	Yes	Yes	Medium	Yes, if thickness of vadose zone is sufficient
		Air Sparging	Soil/ Groundwater	VOC and SVOCs	Yes	Yes	Medium	Yes
		Chemical Oxidation	Groundwater	Organic COCs	Yes	Limited	High	No, due to the presence of chromium in groundwater
		Permeable Reactive Barrier	Groundwater	All COCs	Yes	Yes	Low	Yes
		Solidification	Soil	Inorganic COCs	Limited	No	High	No, due to low effectiveness with organic COCs and incompatibility with excessive debris and multiple existing structures
		Stabilization	Soil	Inorganic COCs	Limited	No	High	No, due to low effectiveness with organic COCs and incompatibility with excessive debris and multiple existing structures
	Thermal Treatment	Electrical Resistance Heating	Soil	TPH, VOCs, SVOCs	Yes	Limited	High	No, due to relatively high costs, does not destroy metals and VOCs generally located in the saturated zone
		Vitrification	Soil	All COCs	Limited	No	High	No, due to incompatibility with high-organic matrices and excessive debris

Table 8-1
Preliminary Remedial Technology Screening

Response Action	Remedial Technology	Process Option	Medium	Applicability	Effectiveness	Implementability	Cost	Retained for Consideration
Ex Situ Treatment	Physical Treatment	Pump-and-Treat	Groundwater	All COCs	Yes	Yes	High	Yes, if combined with physical containment/capping for low groundwater production rates
	Biological Treatment	Landfarming/Composting	Soil	Organic COCs	Yes	Yes	Low	No, due to lack of available area for on-site treatment
	Chemical Treatment	Soil Washing	Soil	TPH, SVOCs, inorganic COCs	Yes	Limited	High	No, due to complex waste mixtures (e.g., metals with organics)
	Thermal Treatment	Thermal Desorption	Soil	TPH, VOCs, SVOCs	Yes	Yes	High	No, due to relatively high costs and does not destroy metals
Removal	Excavation	Excavation	Soil	All COCs	Yes	Limited	Medium	Yes, including removal/demolition of existing structures.
Disposal	On-site Disposal	On-site Treatment and Reuse	Soil	All COCs	Yes	Limited	Low	No, due to lack of available area for on-site treatment
	Off-site Disposal	Commercial Landfill	Soil	All COCs	Yes	Yes	Medium-High	Yes
	Incineration	-	Soil	TPH, SVOCs	Limited	Yes	High	No, due to high relative costs and does not destroy metals

Notes:

Shaded technologies and process options are retained for consideration and carried forward in the FS for alternative development.

a. Physical barrier capping may include the installation of light asphalt, gravel, or soil cover over soils above cleanup criteria. The cover prevents direct contact with impacted soils but does not inhibit the infiltration of surface water.
b. Reduced permeability capping may include asphalt paving, building construction, or liner installation and is generally defined as capping reducing infiltration by 50% to 70%, compared to undeveloped conditions. In areas where site development has already reduced infiltration sufficiently, a reduced permeability cap would include institutional controls so that future development would not increase infiltration to above acceptable levels.
c. Low-permeability capping may include low-permeability paving, building construction, or liner installation and is generally defined as capping reducing infiltration more than 70%, compared to undeveloped conditions.
d. See Sections 2.1.2 and 6.1.2.3 for description and current performance of the clay berm on the western shoreline of the Landfill subarea. See Section 3.3.3.2 for current conditions for the ASB water levels.
e. Evidence of natural attenuation is discussed for groundwater in Section 6.1.2.3 (for landfill-associated contaminants) and in Appendix H; for soil in Section 6.2.2.5 (for LNAPL mobility); and for landfill gas in Section 6.1.2.2 (for methane).

ASB = aerated stabilization basin
CH_4 = methane
COC = contaminant of concern
FS = feasibility study
LNAPL = light non-aqueous phase liquid
SVOC = semivolatile organic compound
TPH = total petroleum hydrocarbon
VOC = volatile organic compound

Table 8-2
Summary of Retained Technologies by Subarea

Response Action: Remedial Technology Process Option	Subarea									
	Landfill Footprint and Perimeter				C Street Properties				Hilton Avenue Properties	
	Perimeter Surface and Subsurface Soil	Groundwater	Refuse	Soil Gas	Surface and Subsurface Soil	Groundwater	Soil Gas	Free Product Above Residual Saturation	Surface and Subsurface Soil	Groundwater
Institutional Controls: Environmental Covenants										
Use Restrictions	X	X	X	X	X	X	X	X	X	X
Engineering Controls										
Landfill Gas Collection				X						
Vapor Intrusion Controls				X			X			
Containment: Engineered Capping										
Physical Barrier Cap[a]	X		X		X				X	
Reduced-Permeability Cap[b]	X	X	X		X	X				
Low-permeability Cap[c]	X	X	X		X	X				
Physical Diversion: Barrier Walls										
Clay Berm/ASB Water Levels		X [d]								
Sheetpile Wall		X [d]				X [d]				X [d]
Slurry Wall		X [d]				X [d]				X [d]
Grout Wall		X [d]				X [d]				X [d]
In Situ Treatment: Physical, Biological, and Chemical Treatment										
Monitored Natural Attenuation		X		X		X				X
Bioremediation					X [e]	X [e]	X [e]			
Soil Vapor Extraction					X [e]	X [e]	X [e]			
Air Sparging [f]					X [e]	X [e]	X [e]			
Permeable Reactive Barrier		X [d]				X [d]				X [d]
Removal: Excavation										
Excavation	X		X		X			X	X	
Disposal: Off-site Disposal										
Commercial Landfill [g]	X		X		X			X	X	

Notes:
Remedial technologies are applicable to all contaminants of concern, unless indicated.

a. Physical barrier capping may include the installation of light asphalt, gravel, or soil cover over soils above cleanup criteria. The cover prevents direct contact with impacted soils but does not inhibit the infiltration of surface water.
b. Reduced-permeability capping may include asphalt paving, building construction, or liner installation and is generally defined as capping reducing infiltration by 50% to 70%, compared to undeveloped conditions. In areas where site development has already reduced infiltration sufficiently, a reduced permeability cap would include institutional controls so that future development would not increase infiltration to above acceptable levels.
c. Low-permeability capping may include low-permeability paving, building construction, or liner installation and is generally defined as capping reducing infiltration more than 70%, compared to undeveloped conditions.
d. Along western shoreline of the Site (from Hilton Avenue to the southern shoreline of the Site) and at the end on the eastern Central Waterfront sheetpile wall.
e. Applicable in the western portion of C Street Subarea at the former Chevron Terminal North and South Tank Yards.
f. Soil vapor extraction may be needed in conjunction with air sparging to extract the generated vapors.
g. Off-site disposal would be used in conjunction with wet/dry excavation.

ASB = Aerated Stabilization Basin

Table 9-1
Remedial Technologies by Subarea

Subarea					
Landfill Footprint and Perimeter		**C Street Properties**		**Hilton Avenue Properties**	
1	Reduced-permeability Cap[a] + Groundwater MNA[b] + ICs[c] + Engineering Controls[d] (+ existing clay berm/ASB water level system)	5	Reduced-permeability Cap[e] + Targeted Treatment[f] + Hotspot Removal/Off-site Disposal[g] + Groundwater MNA[h] + ICs[c] + Engineering Controls[d] (+ ongoing Whatcom Waterway sediment cleanup)	9	Physical Barrier Cap[i]
2	Physical Barrier Cap + Targeted Treatment[j] + Groundwater MNA[b] + ICs[c] + Engineering Controls[d]	6	Physical Barrier Cap + Targeted Treatment[j] + Hotspot Removal/Off-site Disposal[g] + Groundwater MNA[h] + ICs[c] + Engineering Controls[d] (+ ongoing Whatcom Waterway sediment cleanup)	10	Removal/Off-site Disposal
3	Physical Barrier Cap + Barrier Wall[k] + Groundwater MNA[b] + ICs[c] + Engineering Controls[d]	7	In-situ Treatment[l] + Physical Barrier Cap + Targeted Treatment[j] + Hotspot Removal/Off-site Disposal[g] + Groundwater MNA[h] + ICs[c] + Engineering Controls[d] (+ ongoing Whatcom Waterway sediment cleanup)	-	
4	Removal/Off-site Disposal	8	Removal/Off-site Disposal		

Notes:
Previously completed or ongoing interim actions/cleanups are included in all remedial alternatives.

a. Existing conditions on the Landfill (approximately 30% covered by buildings, 49% covered by concrete/ asphalt, and 21% covered in gravel, within the remediation area) are expected to limit infiltration sufficiently to meet the requirements of a reduced-permeability cap. ICs would require that infiltration be controlled below acceptable levels.

b. For FS costing purposes, groundwater MNA in the Landfill Footprint and shoreline includes deep groundwater compliance monitoring along the landfill shoreline and shallow groundwater compliance monitoring in the perimeters. Shallow groundwater and intertidal porewater monitoring would be required along the Landfill shoreline at locations/timeframe TBD after the ASB is converted into a marina to inform future conditions (groundwater flow and contaminant transport) from the landfill into the marina. Results from this monitoring would be the basis to inform the decision on whether or not a contingent treatment action should be implemented in the final cleanup remedy (see Section 9.1.1).

c. ICs would restrict site use so that remedy elements would retain protectiveness during and following future development activities and to restrict potable use of impacted groundwater.

d. In the Landfill Footprint and Perimeter subarea, landfill gas would be collected by passive venting. In the Landfill Footprint/Perimeter and C Street Properties subareas, VI potential would be evaluated and VI controls would be constructed beneath future buildings located above areas containing VOCs/TPH in groundwater and/or soil gas as necessary.

e. Existing conditions in the C Street Properties subarea (approximately 2% covered by buildings, 41% covered by concrete/ asphalt, and 57% covered in gravel, within the remediation areas) are expected to limit infiltration sufficiently to meet the requirements of a reduced-permeability cap. ICs would require that infiltration be controlled below acceptable levels.

f. Permeable reactive barrier is assumed as a contingency for the eastern end of the Central Waterfront sheetpile wall in this FS. The need for and selection of a treatment technology would be determined during remedial design.

g. Hotspot removal area was identified for removal based on soil TPH concentrations exceeding 19,000 mg/kg (residual saturation value).

h. Groundwater MNA in the C Street Properties subarea includes shallow groundwater compliance monitoring.

i. Capping of the Hilton Avenue Properties subarea addresses the soil pathway for direct contact and erosion only. Infiltration reduction is not required.

j. Permeable reactive barrier is assumed for the western shoreline of the Landfill and C Street Properties subareas, and the eastern end (as a contingency) of the Central Waterfront sheetpile wall in this FS. The need for and selection of a treatment technology would be determined during remedial design.

k. A slurry wall in conjunction with groundwater extraction is assumed in the FS. The need for and selection of a barrier wall technology would be determined during remedial design.

l. Air sparging is the assumed *in situ* treatment for TPH/VOCs in the C Street Properties subarea. The need for and selection of an *in situ* treatment technology would be determined during remedial design.

ASB = aerated stabilization basin
FS = feasibility study
IC = institutional control
mg/kg = milligram per kilogram
MNA = monitored natural recovery
TBD = to be determined
TPH = total petroleum hydrocarbon
VI = vapor intrusion
VOC = volatile organic compound

Table 9-2
Assembly of Alternatives by Subarea

Remedial Alternative	Subarea		
	Landfill Footprint and Perimeter	**C Street Properties**	**Hilton Avenue Properties**
A	1	5	9
B	1	6	9
C	2	6	9
D	2	7	9
E	3	7	9
F	4	8	10

Table 9-3
Alternative Cost Summary

Item	Remedial Alternative					
	A	B	C	D	E	F
Landfill Footprint and Perimeter Subarea						
Capital Costs						
Subtotal (Capital Costs)	$539,711	$539,711	$2,175,770	$2,175,770	$4,522,780	$124,404,372
Annual Costs						
Subtotal (Annual Costs)	$125,037	$125,037	$125,037	$125,037	$1,242,107	$0
Other Costs						
Subtotal (Other Costs)	$465,746	$465,746	$1,638,800	$1,638,800	$4,025,361	$89,197,935
Total for Landfill Footprint and Perimeter Subarea	**$1,130,000**	**$1,130,000**	**$3,940,000**	**$3,940,000**	**$9,790,000**	**$213,602,000**
C Street Properties Subarea						
Capital Costs						
Subtotal (Capital Costs)	$773,230	$2,339,352	$2,339,352	$3,046,984	$2,981,664	$20,907,985
Annual Costs						
Subtotal (Annual Costs)	$56,577	$54,735	$54,735	$150,991	$150,991	$0
Other Costs						
Subtotal (Other Costs)	$590,050	$1,711,798	$1,711,798	$2,279,811	$2,232,977	$14,991,025
Total for C Street Properties Subarea	**$1,420,000**	**$4,106,000**	**$4,106,000**	**$5,478,000**	**$5,366,000**	**$35,899,000**
Hilton Avenue Properties Subarea						
Capital Costs						
Subtotal (Capital Costs)	$57,056	$57,056	$57,056	$57,056	$57,056	$1,649,882
Annual Costs						
Subtotal (Annual Costs)	$7,056	$7,056	$7,056	$7,056	$7,056	$0
Other Costs						
Subtotal (Other Costs)	$45,355	$45,355	$45,355	$45,355	$45,355	$1,182,966
Total for Hilton Avenue Properties Subarea	**$109,000**	**$109,000**	**$109,000**	**$109,000**	**$109,000**	**$2,833,000**
Site-Wide Costs						
Subtotal (Site-Wide Costs)	$903,878	$953,878	$1,003,878	$1,053,878	$1,103,878	$500,000
Total for Hilton Avenue Properties Subarea	**$904,000**	**$954,000**	**$1,004,000**	**$1,054,000**	**$1,104,000**	**$500,000**
Spent Costs						
Subtotal (Spent Costs)	$9,931,270	$9,931,270	$9,931,270	$9,931,270	$9,931,270	$9,931,270
Total for Spent Costs	**$9,931,000**	**$9,931,000**	**$9,931,000**	**$9,931,000**	**$9,931,000**	**$9,931,000**
Grand Total per Alternative (rounded)	**$13,495,000**	**$16,231,000**	**$19,090,000**	**$20,512,000**	**$26,300,000**	**$262,765,000**

Table 10-1
MTCA Requirements

MTCA Requirements	Remedial Alternative						Notes
	A (Figure 9-1)	B (Figure 9-2)	C (Figure 9-3)	D (Figure 9-4)	E (Figure 9-5)	F (Figure 9-6)	
	• Hotspot removal[1] • Capping[2] • Clay berm/ASB water levels • Targeted groundwater treatment for the southeastern boundary of C Street Properties subarea[3] • Groundwater MNA[4] • ICs[5] • Engineering controls[6] • Previously completed or ongoing interim actions/cleanups[7]	• Hotspot removal[1] • Capping[2] • Clay berm/ASB water levels • Targeted groundwater treatment for the southeastern boundary and western shoreline of C Street Properties subarea[3] • Groundwater MNA[4] • ICs[5] • Engineering controls[6] • Previously completed or ongoing interim actions/cleanups[7]	• Hotspot removal[1] • Capping[2] • Targeted groundwater treatment for the southeastern boundary and western shoreline of C Street Properties subarea[3] • Groundwater MNA[4] • ICs[5] • Engineering controls[6] • Previously completed or ongoing interim actions/cleanups[7] • Targeted groundwater treatment for the western shoreline of Landfill Footprint/ Perimeter subarea[8]	• Hotspot removal[1] • Capping[2] • Targeted groundwater treatment for the southeastern boundary and western shoreline of C Street Properties subarea[3] • Groundwater MNA[4] • ICs[5] • Engineering controls[6] • Previously completed or ongoing interim actions/cleanups[7] • Targeted groundwater treatment for the western shoreline of Landfill Footprint/ Perimeter subarea[8] • *In situ* treatment for the C Street Properties subarea[9]	• Hotspot removal[1] • Capping[2] • Targeted groundwater treatment for the southeastern boundary and western shoreline of C Street Properties subarea[3] • Groundwater MNA[4] • ICs[5] • Engineering controls[6] • Previously completed or ongoing interim actions/cleanups[7] • *In situ* treatment for the C Street Properties subarea[9] • Barrier wall for the Landfill Footprint subarea[10]	• Hotspot removal[1] • Previously completed or ongoing interim actions/cleanups[7] • Full excavation, transport, and off-site disposal of contaminated soils and refuse	
Threshold Requirements (WAC 173-340-360(2)(a))							
Protects Human Health and the Environment	Yes	Yes	Yes	Yes	Yes	Yes	All remedial alternatives meet threshold requirements and are carried forward to the detailed evaluation.
Complies with Cleanup Standards	Yes	Yes	Yes	Yes	Yes	Yes	
Complies with Applicable State and Federal Laws	Yes	Yes	Yes	Yes	Yes	Yes	
Provides for Compliance Monitoring	Yes	Yes	Yes	Yes	Yes	Yes	
Other Requirements (WAC 173-340-360(2)(b))							
Permanent to Maximum Extent Practicable	See Table 10-2; this criterion is evaluated under the MTCA DCA.						-
Provides Reasonable Restoration Timeframe	See Table 10-3 for detailed evaluation.						-
Considers Public Concerns	Yes	Yes	Yes	Yes	Yes	Yes	Public concerns will be addressed following the public comment period for the Draft CAP.
Additional Requirements (WAC 173-340-360(2)(c)(i), (e), (f), and (g))							
Requires Permanent Groundwater Cleanup Actions	No	No	No	No	No	No	Alternatives A through E require performance monitoring of groundwater quality and confirmation of continued attainment of cleanup levels at the designated point of compliance.
Does Not Rely Primarily on Institutional Controls	Yes	Yes	Yes	Yes	Yes	Yes	Although Alternatives A through E rely on ICs to limit groundwater usage and to ensure the protection/integrity of the caps, ICs are not the primary remedial action.
Minimizes Present and Future Site Releases and Migration	Yes	Yes	Yes	Yes	Yes	Yes	Cleanup actions will prevent and minimize present and future releases and migration of COCs into the environment.
Does Not Rely Primarily on Dilution and/or Dispersion	Yes	Yes	Yes	Yes	Yes	Yes	None of the remedial alternatives rely primarily on dilution and/or dispersion.

Table 10-1
MTCA Requirements

Notes:
1. The hotspot removal is a source control action in the C Street Properties subarea.
2. Includes a combination of physical barrier and reduced-permeability caps in contaminated areas of the Landfill Footprint, C Street Properties, and Hilton Avenue Properties subareas, as shown in Tables 9-1 and 9-3. The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces. Stormwater system upgrades as part of capping will be specified during remedial design.
3. For costing purposes only, a permeable reactive barrier is assumed in the FS as the targeted treatment of metals (in the southeastern boundary for Alternative A, as a contingency), and metals/organics (in the western shoreline of the C Street Properties subarea for Alternatives B, C, D, and E). Applicable treatment technology will be determined during remedial design.
4. Compliance monitoring would be conducted to evaluate the effectiveness of groundwater MNA and contingency actions would be included in case the MNA remedy is insufficient.
5. ICs include a prohibition on consumptive use of groundwater, restrictions to protect and maintain remedy elements, and notification requirements.
6. Engineering controls include collection of landfill gas by passive venting and VI evaluation and/or VI controls constructed beneath future buildings as necessary.
7. Previously completed or ongoing interim actions/cleanups are described in Section 9.1.5.
8. For costing purposes only, a permeable reactive barrier is assumed in the FS as the targeted treatment of metals (in the western shoreline of the Landfill Footprint/Perimeter subarea for Alternatives C and D). Applicable treatment technology will be determined during remedial design.
9. Air sparging is assumed as the *in situ* treatment of VOCs and TPH in the C Street Properties subarea. Applicable treatment technology will be determined during remedial design.
10. A slurry wall is assumed in the FS as the barrier wall along the Landfill Footprint, in conjunction with groundwater extraction. Applicable barrier technology will be determined during remedial design.

ASB = Aerated Stabilization Basin
CAP = Cleanup Action Plan
COC = contaminant of concern
DCA = disproportionate cost analysis
FS = feasibility study
IC = institutional control
MNA = monitored natural recovery
MTCA = Model Toxics Control Act
TPH = total petroleum hydrocarbon
VI = vapor intrusion
VOC = volatile organic compound
WAC = Washington Administrative Code

Table 10-2
Disproportionate Cost Analysis

Criteria to Evaluate Use of Permanent Solutions to the Maximum Extent Practicable (WAC 173-340-360(3)(e))			Remedial Alternative A (Figure 9-1)	B (Figure 9-2)	C (Figure 9-3)	D (Figure 9-4)	E (Figure 9-5)	F (Figure 9-6)
Overall Protectiveness	30% [1]	Description	Hotspot removal action eliminates a source of COCs in the C Street Properties subarea. Capping addresses direct contact, soil erosion, dust inhalation, and limits groundwater generation. The clay berm effectively performs as a "hanging" low-permeability physical diversion wall, not only containing groundwater within the Landfill subarea, but also diverting it and increasing its flow path and travel time prior to discharging to adjacent surface water. Alternative A's targeted treatment (i.e., PRB) in the southeastern boundary of the C Street Properties subarea provides added protection of downgradient GW migrating into surface water and sediments. Under-building venting systems address vapor and soil gas. Relies on long-term GW compliance monitoring and ICs.	In addition to the protective elements of Alternative A, Alternative B's targeted treatment (i.e., PRB) in the C Street Properties subarea provides added protection of downgradient GW migrating into surface water and sediments at the western shoreline, assuring that cleanup levels will be met at the property boundary.	In addition to the protective elements of Alternative A, Alternative C's targeted treatment (i.e., PRB) in the western shoreline of the Landfill Footprint and C Street Properties subareas provides added protection of downgradient GW migrating into surface water and sediments at the western shoreline, assuring that cleanup levels will be met at the property boundary.	In addition to the protective elements of Alternative C, Alternative D's *in situ* treatment (i.e., AS) in the C Street Properties subarea provides added protection by reducing VOCs/TPH adsorbed onto soils and dissolved in GW, decreasing migration into surface water and sediments, and therefore, reducing the time to achieve cleanup levels at the conditional POC.	In addition to protective elements of Alternative D, Alternative E's barrier wall (i.e., slurry wall) and GW extraction system in the Landfill Footprint subarea addresses contaminated GW migration into the C Street Properties subarea, reducing potential migration into surface water and sediments, and therefore reducing the time to meet cleanup levels at the conditional POC.	Future risks are addressed because of Site-wide removal of contaminated soils and refuse. Does not require long-term GW monitoring and does not rely on ICs for protectiveness.
		Score [2]	5	6	7	8	9	10
		Weighted Score	**1.5**	**1.8**	**2.1**	**2.4**	**2.7**	**3.0**
Permanence	20% [1]	Description	Alternative A permanently reduces volume and mobility of COCs through the hotspot removal action by eliminating a source of contamination in the C Street Properties subarea. Natural attenuation is already effectively reducing GW contaminant mass. Capping reduces direct contact risks and potential mobility via erosion. Alternative A's targeted treatment (i.e., PRB) in the southeastern boundary of the C Street Properties subarea reduces contaminant mass and toxicity in GW as it migrates into surface water and sediments.	In addition to the permanent elements of Alternative A, Alternative B's targeted treatment (i.e., PRB) in the western shoreline of the C Street Properties subarea reduces contaminant mass and toxicity in GW as it migrates into surface water and sediments.	In addition to the permanent elements of Alternative A, Alternative C's targeted treatment (i.e., PRB) in the western shoreline of the Landfill Footprint and C Street Properties subareas reduces contaminant mass and toxicity in GW as it migrates into surface water and sediments.	In addition to the permanent elements of Alternative C, Alternative D's *in situ* treatment (i.e., AS) in the C Street Properties subarea permanently destroys COCs in soil and GW, reducing their toxicity, mobility, and volume.	In addition to permanent elements of Alternative D, Alternative E's barrier wall (i.e., slurry wall) and GW extraction system in the Landfill Footprint subarea reduces mobility of contaminated GW into the C Street Properties subarea, therefore reducing potential migration into surface water and sediments.	Alternative F permanently reduces mobility of COCs by eliminating all sources of contamination, through full removal and off-site disposal of soils and refuse. However, contaminant toxicity and volume would only be reduced by potential natural attenuation in the off-site landfill.
		Score [2]	5	6	7	9	9	10
		Weighted Score	**1.0**	**1.2**	**1.4**	**1.8**	**1.8**	**2**
Long-term Effectiveness	20% [1]	Description	The hotspot removal action eliminates a source of COCs in the C Street Properties subarea. Long-term effectiveness of Alternative A is dependent on GW and cap compliance monitoring and ICs will remain in place to ensure reliability and effectiveness of management of any residual risks. Alternative A's targeted treatment (i.e., PRB) in the southeastern boundary of the C Street Properties subarea effectively reduces GW contamination in the long-term.	In addition to the effective elements of Alternative A over long-term, Alternative B's targeted treatment (i.e., PRB) in the western shoreline of the C Street Properties subarea effectively reduces GW contamination in the long-term.	In addition to the effective elements of Alternative A over long-term, Alternative C's targeted treatment (i.e., PRB) in the western shoreline of the Landfill Footprint and the C Street Properties subareas effectively reduces GW contamination in the long-term.	In addition to the effective elements of Alternative C over long-term, Alternative D's in situ treatment (i.e., AS) in the C Street Properties subareas effectively reduces soil and GW contamination in the long-term.	In addition to the effective elements of Alternative D over long-term, Alternative E's barrier wall (i.e., slurry wall) and GW extraction system in the Landfill Footprint subarea effectively reduces long-term migration of contaminated GW into the C Street Properties subarea.	All contaminated soils and refuse will be removed under Alternative F, eliminating all sources of contamination and any residual risk. Alternative F provides the greatest long-term benefit. Neither GW compliance monitoring nor ICs will be required to ensure long-term effectiveness.
		Score [2]	6	6	7	8	9	10
		Weighted Score	**1.2**	**1.2**	**1.4**	**1.6**	**1.8**	**2**

Table 10-2
Disproportionate Cost Analysis

Criteria to Evaluate Use of Permanent Solutions to the Maximum Extent Practicable (WAC 173-340-360(3)(e))			Remedial Alternative A (Figure 9-1)	B (Figure 9-2)	C (Figure 9-3)	D (Figure 9-4)	E (Figure 9-5)	F (Figure 9-6)
Short-term Risk Management	10% [1]	Description	Under Alternative A, minimal short-term risks associated with capping and hotspot removal action (worker safety, dust/erosion control, etc.) are anticipated. Alternative A has some risks associated with the construction of the targeted treatment (i.e., PRB) in the southeastern boundary of the C Street Properties subarea, but overall potential risks to human health and the environment as a result of construction and implementation are still not substantial.	In addition to the minimal short-term risks of Alternative A, Alternative B has some risks associated with the construction of the targeted treatment (i.e., PRB) in the western shoreline of the C Street Properties subarea, but overall potential risks to human health and the environment as a result of construction and implementation are still not substantial.	In addition to the minimal short-term risks of Alternative A, Alternative C has slightly higher risks associated with the construction of the targeted treatment (i.e., PRB) in the western shoreline of the Landfill Footprint and C Street Properties subareas, but overall potential risks to human health and the environment as a result of construction and implementation are still not substantial.	In addition to the short-term risks of Alternative C, Alternative D has slightly more short-term risks associated with installation of the *in situ* treatment system (i.e., AS) because of worker safety. Best management practices will be implemented to control these risks through planning and oversight.	In addition to the short-term risks of Alternative D, Alternative E has some short-term risks associated with the construction of the barrier wall (i.e., slurry wall) in the Landfill Footprint subarea, because the barrier wall will require trenching during installation. Existing utilities will need to be located to allow the slurry wall to be installed around them.	Alternative F has the most potential short-term risks associated with implementation because it includes extensive excavation and intrusive activities. Dewatering and soil management/transport/off-site disposal will be critical components of this work since large excavations occur along the shorelines and within the Landfill Footprint and C Street Properties subareas. Transportation of soils through the community and for long distances poses additional risk of exposure to airborne contaminants and dust and local truck traffic could be impacted. These risks can be minimized with pre-mobilization planning, oversight, and close implementation management.
		Score [2]	9	8	6	5	4	1
		Weighted Score	**0.9**	**0.8**	**0.6**	**0.5**	**0.4**	**0.1**
Technical and Administrative Implementability	10% [1]	Description	Alternative A is the easiest to implement. Low/moderate technical challenges for Alternative A are associated with extensive capping in the three subareas and the hotspot removal action. Moderate technical challenges related to the installation of the targeted treatment (i.e., PRB) in the southeastern boundary of the C Street Properties subarea, because of the need to accommodate existing utilities and other structures. Some administrative challenges are associated with shoreline permitting for the PRB. Some administrative challenges are anticipated regarding the effective implementation of ICs, if parcels are sold.	In addition to implementation challenges identified for Alternative A, moderate technical challenges are anticipated for Alternative B, related to the installation of the targeted treatment (i.e., PRB) in the western shoreline of the C Street Properties subarea, because it will require extensive work along the western Site shoreline and accommodating for existing utilities and other structures. Some administrative challenges are associated with shoreline permitting for the PRB.	In addition to implementation challenges identified for Alternative A, moderate technical challenges are anticipated for Alternative C, related to the installation of the targeted treatment (i.e., PRB) in the western shoreline of the Landfill Footprint and C Street Properties subareas, because it will require extensive work along the western Site shoreline and accommodating for existing utilities and other structures. More administrative challenges are anticipated (compared to Alternative B), associated with shoreline permitting for a longer PRB.	In addition to implementation challenges identified for Alternative C, minor challenges are anticipated for Alternative D in relation to the installation of the *in situ* treatment system (i.e., AS) in the C Street Properties subarea, which can be accomplished with conventional drilling equipment.	In addition to the implementation challenges of Alternative D, moderate/high technical challenges are anticipated for Alternative E, related to the construction of the barrier wall (i.e., slurry wall) in the Landfill Footprint subarea, because it will require extensive work along the western Site shoreline and accommodating for existing utilities and other structures.	Alternative F is the most technically difficult alternative to implement due to the magnitude and complexity of earthwork (e.g., extensive intrusive operations, major dewatering, large soil management for off-site disposal, traffic impacts on the local community, existing utilities, physical hazards, and exposure during soil excavation). Administrative and regulatory requirements and overall coordination will pose high challenges.
		Score [2]	9	8	5	4	3	1
		Weighted Score	**0.9**	**0.8**	**0.5**	**0.4**	**0.3**	**0.1**
Consideration of Public Concerns[3]	10% [1]	Description	All of the remedial alternatives have some public concerns and are based on past public concerns and comments on adjacent projects to CWS. Additional public concerns will be addressed following the public comment period for the RI/FS.					
		Score	1	3	5	7	9	10
		Weighted Score	**0.1**	**0.3**	**0.5**	**0.7**	**0.9**	**1**
Overall Environmental Benefit Score (weighted)	[4]		**5.6**	**6.1**	**6.5**	**7.4**	**7.9**	**8.2**
Estimated Total Costs ($, Millions)	[5]		**$13.5**	**$16.2**	**$19.1**	**$20.5**	**$26.3**	**$263**
Benefit-to-Cost Ratio (Benefit Score / $ Million)	[6]		**0.41**	**0.38**	**0.34**	**0.36**	**0.30**	**0.03**

Table 10-2
Disproportionate Cost Analysis

Notes:
1. The weighting factors are based on Ecology input provided for FSs conducted on other Port of Bellingham sites.
2. A scale of 1 to 10 is used to score the remedial alternatives with respect to the criteria, where "1" indicates the criterion is satisfied to a very low degree, and "10" indicates the criterion is satisfied to a very high degree.
3. Ecology will consider and respond to all public comments received on the Draft RI/FS document, as part of the cleanup process under MTCA.
4. The overall environmental benefit score was obtained by multiplying the score for each criterion by its weighting factor and summing the results for the first five criteria.
5. Net present value costs are estimated in 2017 dollars and were calculated using a discount factor of 0.7%. The costs shown are rounded to three significant figures. Detailed cost estimates are provided in Appendix I.
6. The benefit-to-cost ratio was obtained by dividing the remedial alternative's overall environmental benefit score by its estimated cost.

AS = air sparging system
CAP = Cleanup Action Plan
COC = contaminant of concern
FS = feasibility study
GW = groundwater
IC = institutional control
MTCA = Model Toxics Control Act
POC = point of compliance
PRB = permeable reactive barrier
TPH = total petroleum hydrocarbon
VOC = volatile organic compound
WAC = Washington Administrative Code

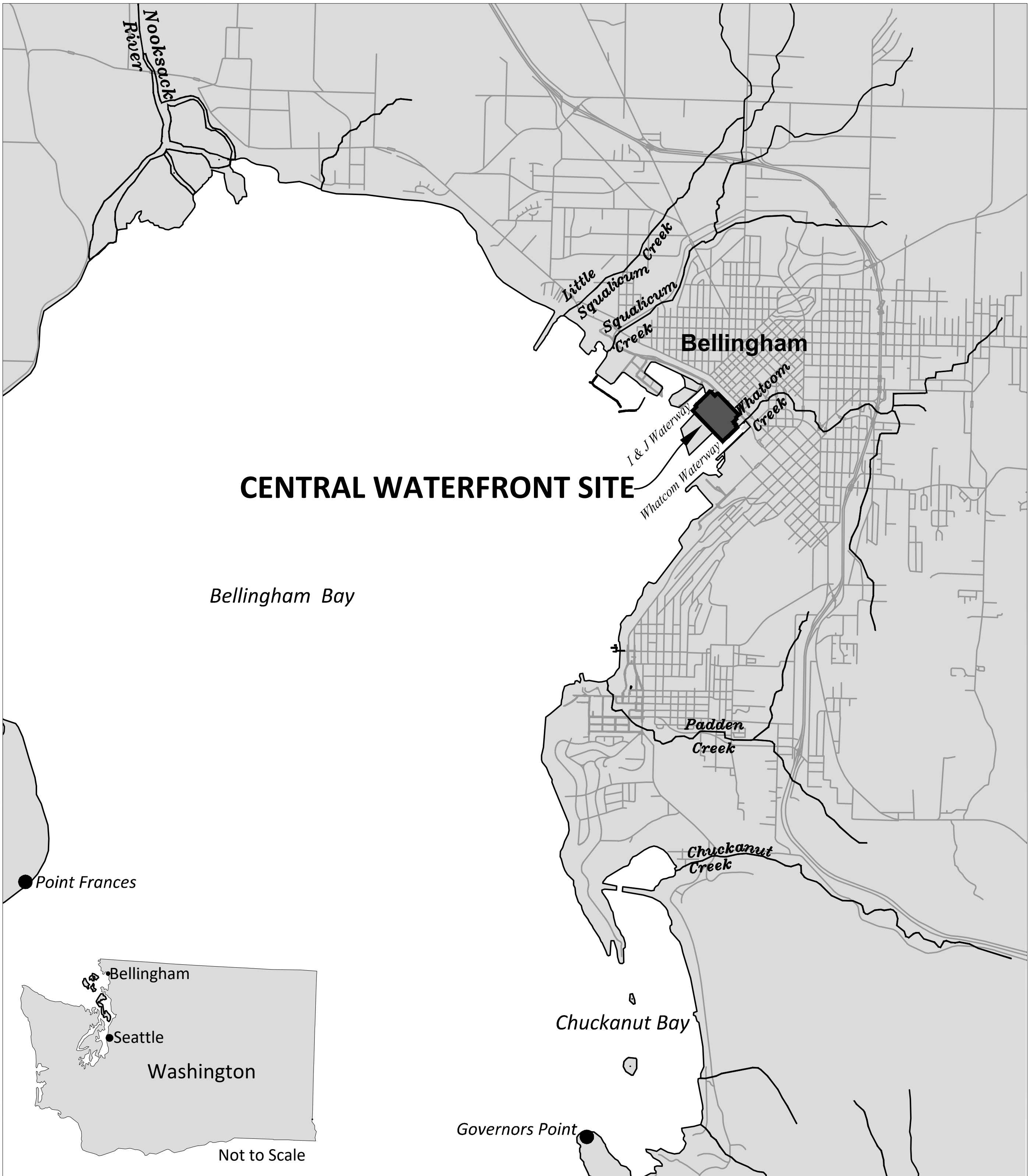
Table 10-3
Evaluation of Reasonable Restoration Timeframe

Factors Used to Determine Whether Restoration Timeframe is Reasonable (WAC 173-340-360(4)(b))	Remedial Alternative A (Figure 9-1)	B (Figure 9-2)	C (Figure 9-3)	D (Figure 9-4)	E (Figure 9-5)	F (Figure 9-6)
Potential risks posed by the Site to human health and the environment	Low level of risk under Alternative A because water is nonpotable, capping addresses direct contact and soil erosion, under-building venting systems address vapor/soil gas inhalation, and hotspot removal action eliminates a source of COCs. Natural attenuation of COCs in GW is currently occurring and will continue to occur. Some risks associated with the construction of the targeted treatment (i.e., PRB) in the southeastern boundary of the C Street Properties subarea. Overall potential risks to human health and the environment are not substantial.	Alternative B has similar level of risks as Alternative A, plus some risks associated with the construction of the targeted treatment (i.e., PRB) in the western shoreline of the C Street Properties subarea. Overall potential risks to human health and the environment are not substantial.	Alternative C has similar level of risks as Alternative A, plus some risks associated with the construction of the targeted treatment (i.e., PRB) in the western shoreline of the Landfill Footprint and C Street Properties subareas. Overall potential risks to human health and the environment are not substantial.	Alternative D has similar level of risks as Alternative C, plus some risks associated with the installation of the *in situ* treatment system (i.e., AS) in the C Street Properties subarea. Overall potential risks to human health and the environment are not substantial.	Alternative E has similar level of risks as Alternative D, plus some risks associated with the construction of the barrier wall (i.e., slurry wall) in the Landfill Footprint subarea. Overall potential risks to human health and the environment are not substantial.	Although Alternative F has several potential short-term risks associated with implementation because it includes extensive excavation and intrusive activities, these risks will occur only during construction, until the Site is restored.
Practicability of achieving shorter restoration timeframe	Under Alternative A, capping is the only engineered control to address exposure at the Site; therefore, it needs to be combined with long-term GW monitoring and ICs. Alternatives B through F would likely achieve a shorter restoration timeframe, compared to Alternative A.	Alternative B would likely achieve a shorter restoration timeframe than Alternative A due to the targeted shoreline treatment (i.e., PRB) in the C Street Properties subarea, which provides added protection against GW migrating into surface water and sediments.	Alternative C would likely achieve a shorter restoration timeframe than Alternative B due to the targeted shoreline treatment (i.e., PRB) in the Landfill and C Street Properties subareas, which provides added protection against GW migration to the C Street Properties subarea, and therefore, into surface water and sediments.	Alternative D would likely achieve a shorter restoration timeframe than Alternatives A through C due to *in situ* treatment (i.e., AS) in the C Street Properties subarea, reducing VOCs/TPH adsorbed onto soils and dissolved in GW, and therefore, reducing migration into surface water and sediments.	Alternative E would likely achieve a shorter restoration timeframe than Alternatives A through D due to the barrier wall (i.e., slurry wall) and GW extraction system in the Landfill Footprint subarea, which address contaminated GW migration into the C Street Properties subarea, therefore reducing potential migration into surface water and sediments.	Alternative F would likely achieve the shortest restoration timeframe, compared to Alternatives A through E, because of Site-wide removal of contaminated soils and refuse. Alternative F does not require long-term GW monitoring nor ICs.
Current and potential future use of Site, surrounding areas, and associated resources that are, or may be, affected by the releases from the Site	Current/future tenants and land use of the Site is consistent with a combination of commercial, industrial, and institutional mixed-uses and the Site cleanup actions.					
Availability of alternate water supplies	City of Bellingham municipal water supply is readily available and would not be affected by the Site cleanup actions.					
Likely effectiveness and reliability of institutional controls	ICs are expected to be effective and reliable at limiting groundwater usage and at ensuring protection and maintenance of remedy elements.					Not applicable, because ICs would not be necessary for Alternative F.
Ability to control and monitor migration of hazardous substances from the Site	All remedial alternatives are scoped in the FS to effectively address the current and future potentially complete exposure pathways to COCs in GW, soil, and soil gas.					
Toxicity of the hazardous substances at the Site	The hazardous substances at the Site have a relatively low toxicity.					
Natural processes that reduce concentrations of hazardous substances and have been documented to occur at the Site or under similar Site conditions	Natural attenuation processes for various COCs have been documented to occur at the Site.[1]					The restoration timeframe of Alternative F does not rely on natural attenuation of COCs.
Estimated Restoration Timeframe	20–25 years	20–25 years	20–25 years	10 years	5 years	2–3 years
Is Restoration Timeframe Reasonable?	Yes	Yes	Yes	Yes	Yes	Yes

Notes:
1. See "Groundwater Quality Evaluation for Total Petroleum Hydrocarbons and Dissolved Metals in the C Street Properties Subarea, Central Waterfront Site" Memorandum (Anchor QEA 2017).

AS = air sparging system
COC = contaminant of concern
FS = feasibility study
GW = groundwater
IC = institutional control
PRB = permeable reactive barrier
TPH = total petroleum hydrocarbon
VOC = volatile organic compound
WAC = Washington Administrative Code

FIGURES



SOURCE: Prepared from GIS data
HORIZONTAL DATUM: Washington State Plane North, NAD27.

0 6000
Scale in Feet

Aug 01, 2017 10:20am tgriga \\bellingham2\Bell2\Projects\Port of Bellingham\Central_Waterfront\CAD\Vicinity Map CAD.dwg Figure 1-1

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Figure 1-1
Site Location
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

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Figure 1-2
Site Property Ownership and Current Land Use
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

Pre-Roeder Avenue Landfill

1955

1963

Subarea Property Use:
Chevron Terminal: Bulk fuel terminal operations
Colony Wharf: Foundry operations, boat manufacturing, building product sales, cement warehouse, electrical equipment operations, seafood distribution, and UST use
Roeder Avenue Landfill Area: Shallow-water marine area used for log rafting
Olivine Upland: Lumber mill, truck dispatching

Roeder Avenue Landfill Construction

1965

1974

Subarea Property Use:
Chevron Terminal: Bulk fuel terminal operations
Colony Wharf: Boat manufacturing, building product sales, cement warehouse, electrical equipment operations and UST use
Roeder Avenue Landfill Area: Municipal landfill operations from 1965 to 1974
Olivine Upland: Truck dispatching and Olivine Corporation rock processing plant

---

Post Roeder Avenue Landfill/ASB

1978

1979

Subarea Property Use:
Chevron Terminal: Bulk fuel terminal operations until late 1980's and transition to gravel hauling (present)
Colony Wharf: Boat manufacturing, building product sales, cement warehouse, electrical equipment operations, and UST operations
Roeder Avenue Landfill Area: Shallow-water marine area used for log rafting
Olivine Upland: Truck dispatching and Olivine Corporation rock processing plant until early 1990's

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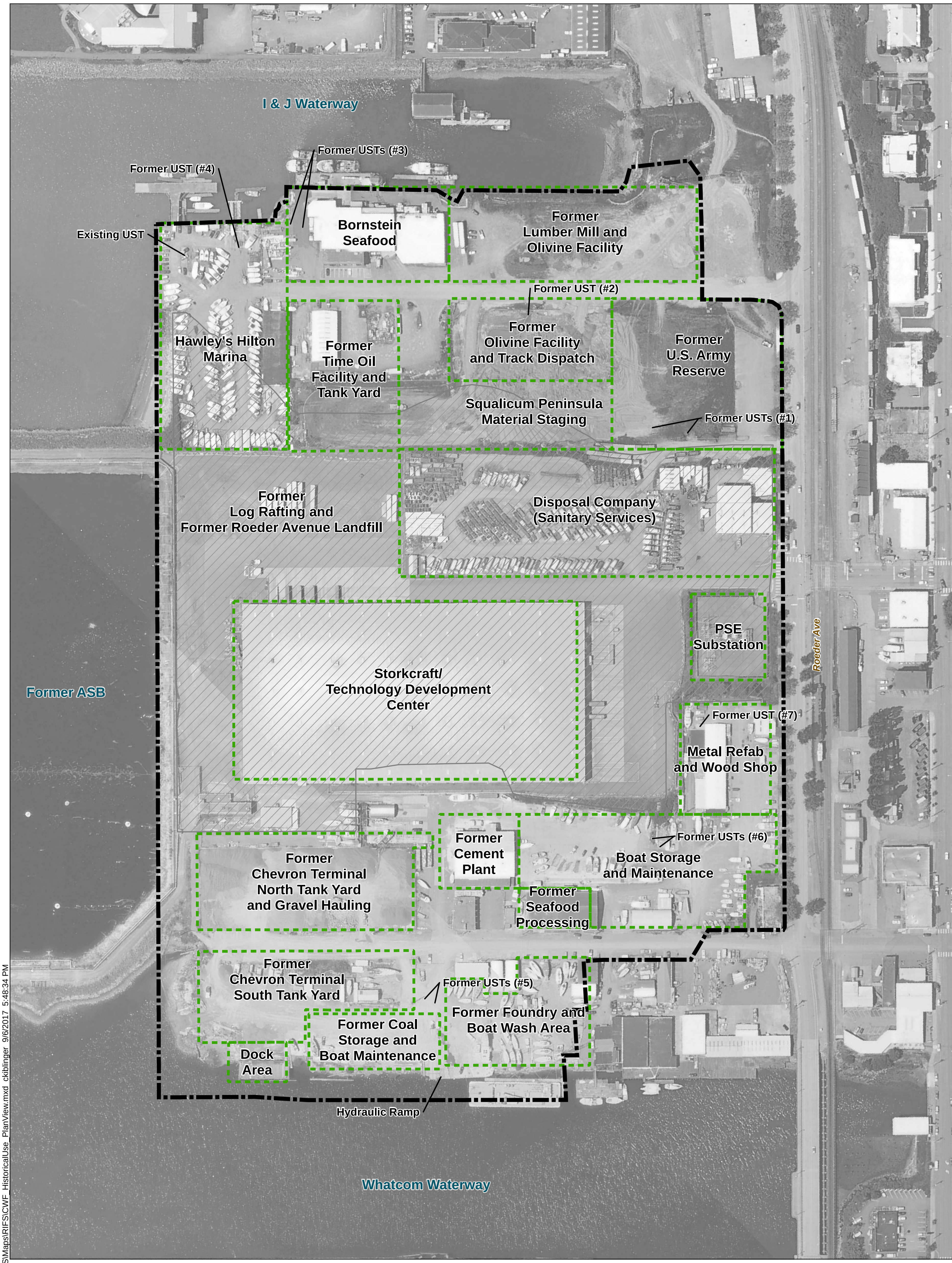
Figure 2-1a
Historical Site Use
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Central Waterfront Site Boundary

Former Roeder Avenue Landfill and Log Rafting

Historical Operations Areas

Project North

True North

Feet

0 100 200 300 400

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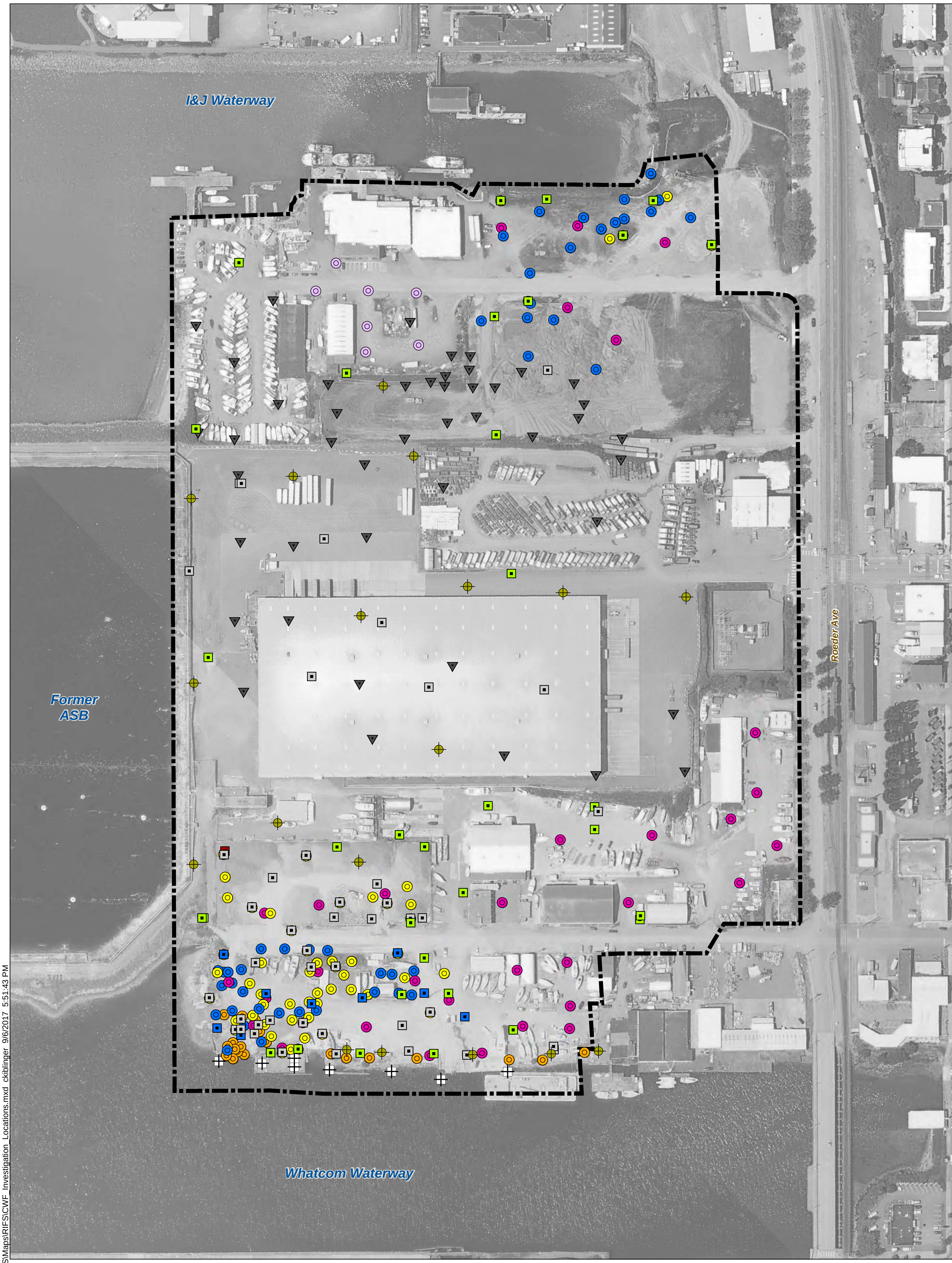
ANCHOR QEA

Figure 2-1b
Historical Site Operations and Land Use
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Historical Soil Sample Location

- Soil Boring
- Test Pit
- Roeder Design Test Pits
- Geotech Borings
- 2007-2008 RI Soil Boring or Surface Soil
- 2012 Soil Sample Location
- 2013 Supplemental RI

Monitoring Well Status (RI Survey)

- Well-Active
- Well-Condition Unknown, Surface Obstruction Blocks Access
- Well-Decommissioned
- Well-Missing and Likely Destroyed
- 2012 Porewater/Seep
- Central Waterfront Site Boundary

Project North

True North

Feet

0 100 200 300 400

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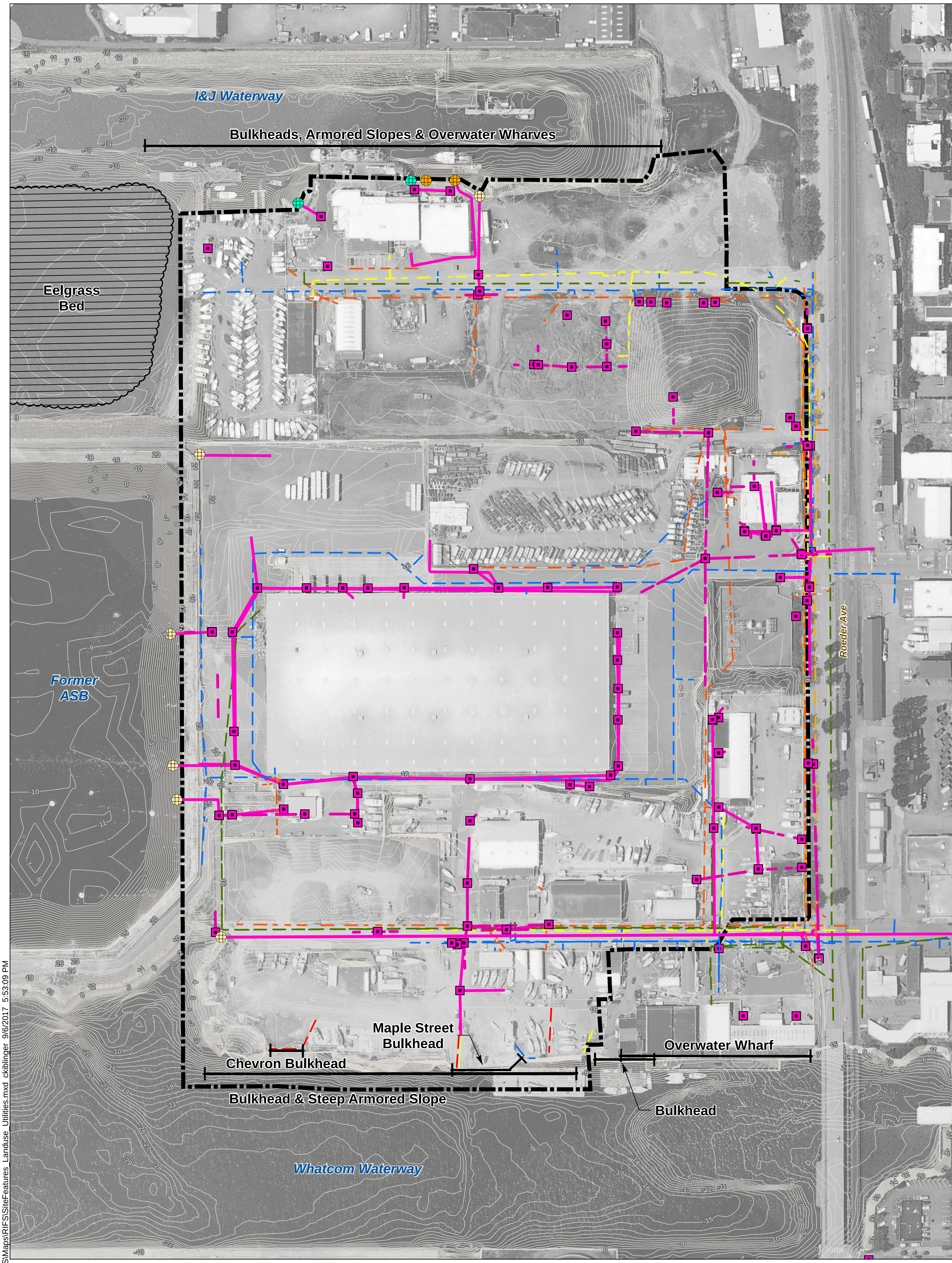
Figure 2-2
Central Waterfront Site Investigation Locations
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Central Waterfront Site Boundary
Eelgrass Bed

Storm Drain Features

- Catch Basin
- Outfall
- Bornstein Outfall (Permitted)
- Bulkhead Drains

Storm Drain
Storm Drain Inferred by Surveyors Based on Available Information
Sanitary Sewer
Natural Gas
Electrical
Telecom
Water

Project North
True North

Feet
0 100 200 300 400

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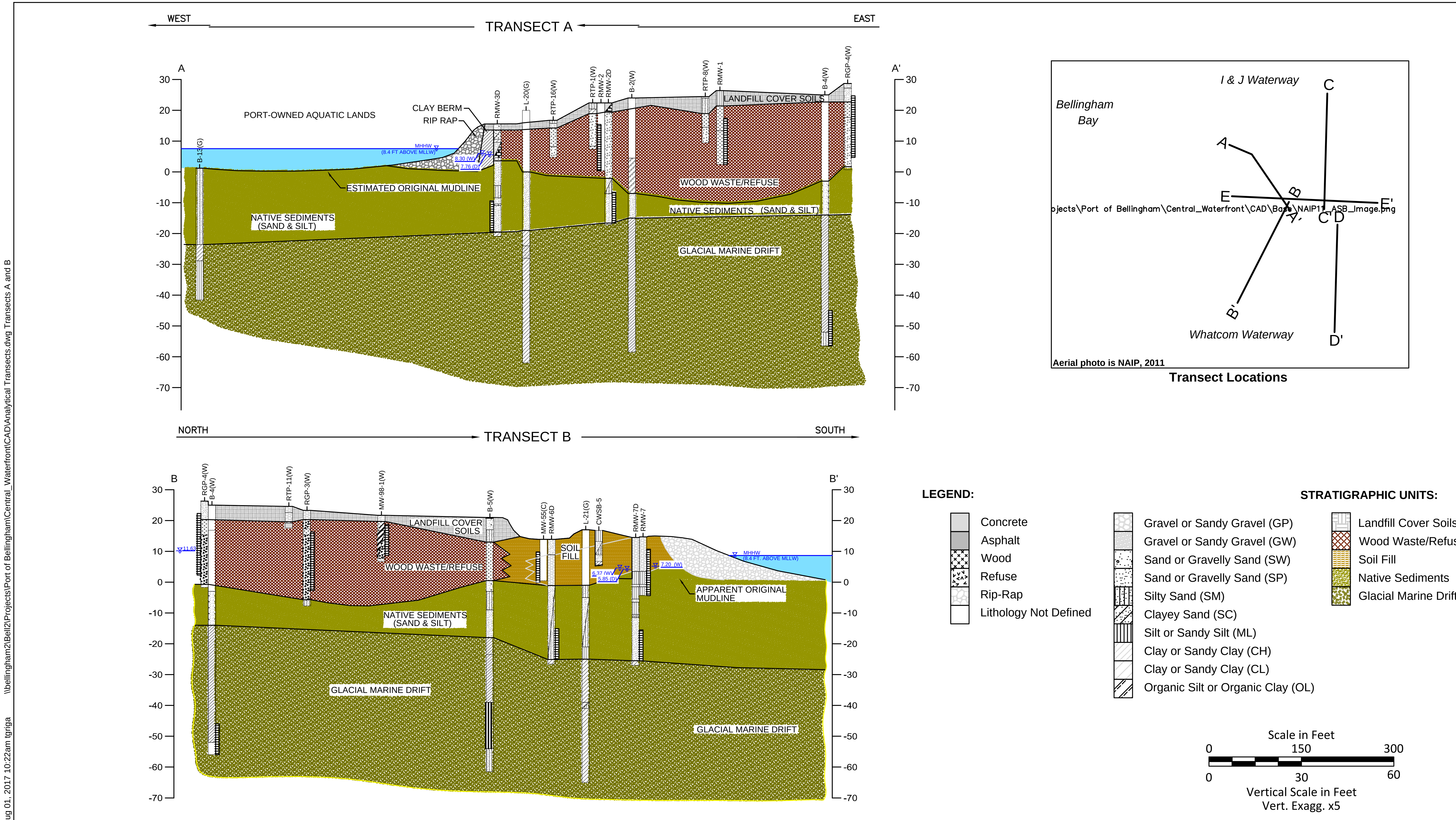
NOTES:
1. Utilities shown hereon have been assembled using multiple sources of information dating from the late 1990's to present time. This figure shows known utilities and is for planning purposes only. Location of utilities would require confirmation by additional surveying.
2. Catch basins without storm drain conveyances indicate that a conveyance was not identified in surveys and drawings to date.
3. Utility colors shown on this figure follow industry standards.

Figure 3-1
Site Features, Utilities, and Stormwater Conveyance System
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



SOURCE: Drawing prepared from AECOM Figure 3-3A, Draft Central Waterfront Site RI/FS, 05/01/09.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTES:
(D) Dry season groundwater elevations (Gauged 09/17/07)
(W) Wet season groundwater elevations (Gauged 03/22/08)
Mean groundwater elevations shown for tidally influenced wells

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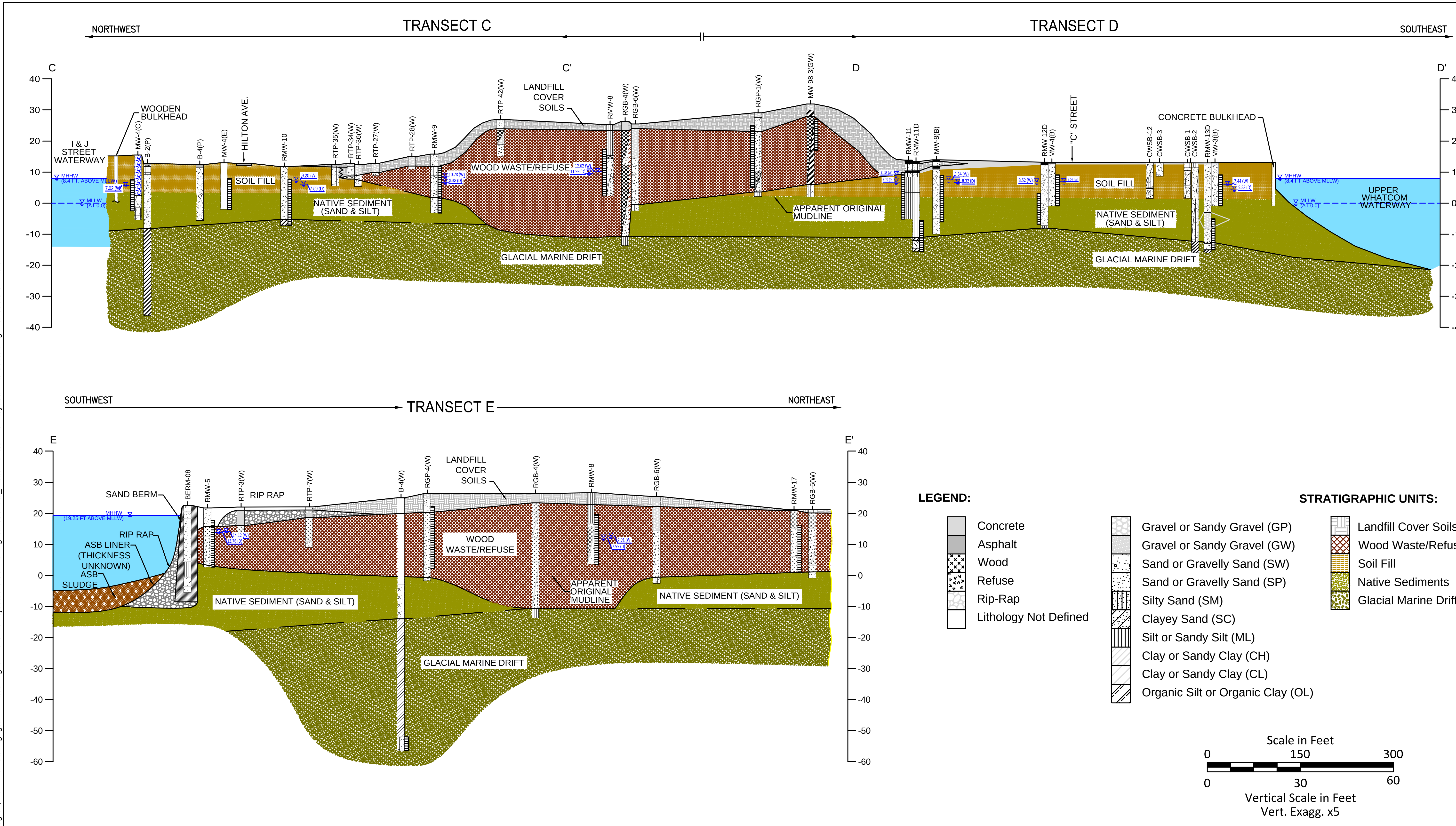
Figure 3-2a
Geologic Cross Section Transects A and B
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



\\bellingham2\Bell2\Projects\Port of Bellingham\Central_Waterfront\CAD\Analytical Transects.dwg Transects C D and E

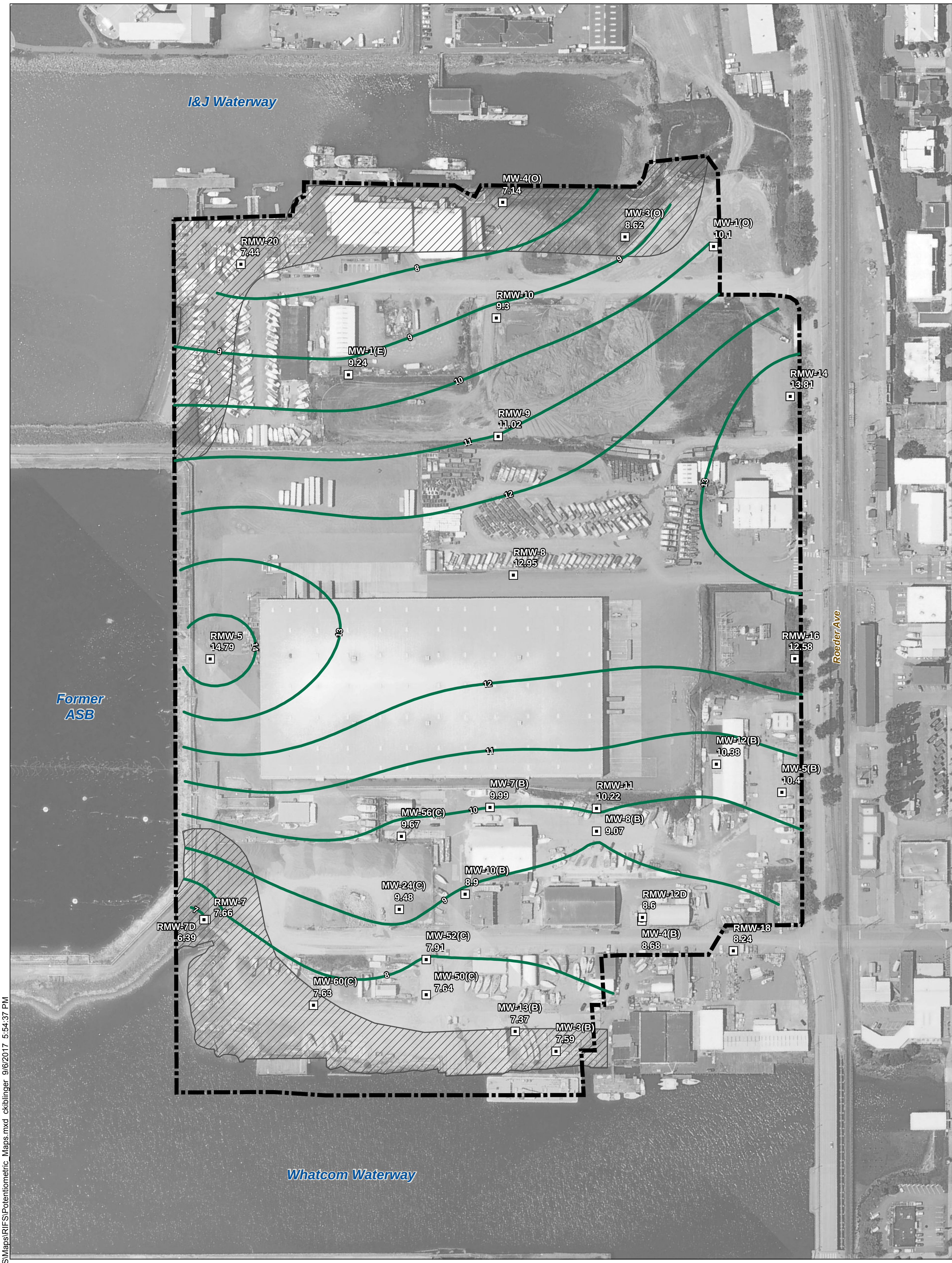
Aug 01, 2017 10:23am tgriga

SOURCE: Drawing prepared from AECOM Figure 3-3B, Draft Central Waterfront Site RI/FS, 05/01/09.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTES:
(D) Dry season groundwater elevations (Gauged 09/17/07)
(W) Wet season groundwater elevations (Gauged 03/22/08)
Mean groundwater elevations shown for tidally influenced wells

ANCHOR QEA

Figure 3-2b
Geologic Cross Section Transects C, D, and E
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



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Gauged Well
Potentiometric Contours - May-June 2007
Approximate Extent of Tidally Influenced Area
Central Waterfront Site Boundary

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Water levels were gauged on May 1, 2, and 16, 2007 and June 6 and 19, 2007.
2. Water levels in tidally influenced wells are the average of the high and low tide measurements.

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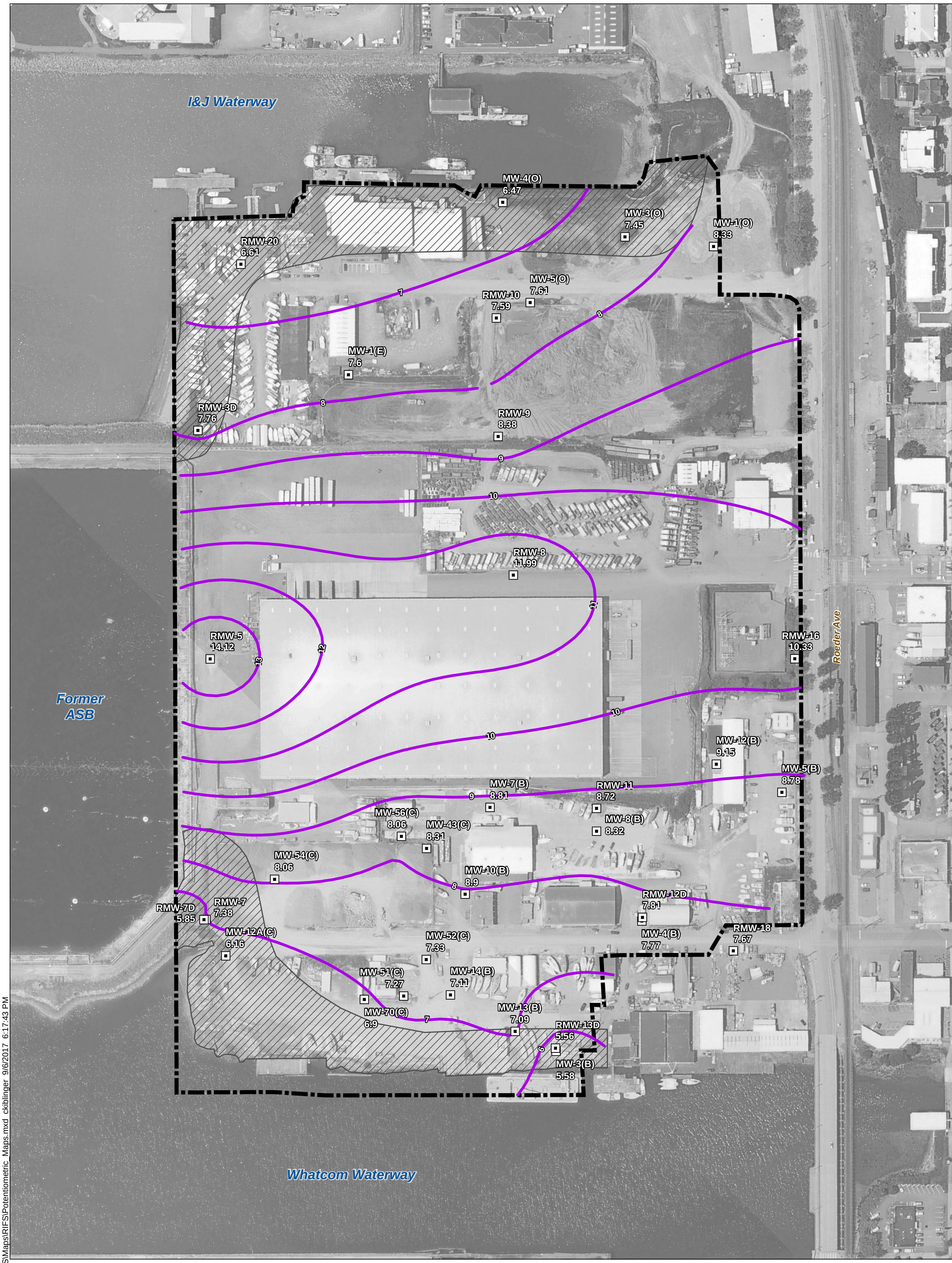
Figure 3-3
May – June 2007 Potentiometric Map
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



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Gauged Well

Potentiometric Contours - September 2007

Approximate Extent of Tidally Influenced Area

Central Waterfront Site Boundary

Project North

True North

Feet

0 100 200 300 400

NOTES:
1. Water levels were gauged on September 17, 2007.
2. Water levels in tidally influenced wells are the average of the high and low tide measurements.

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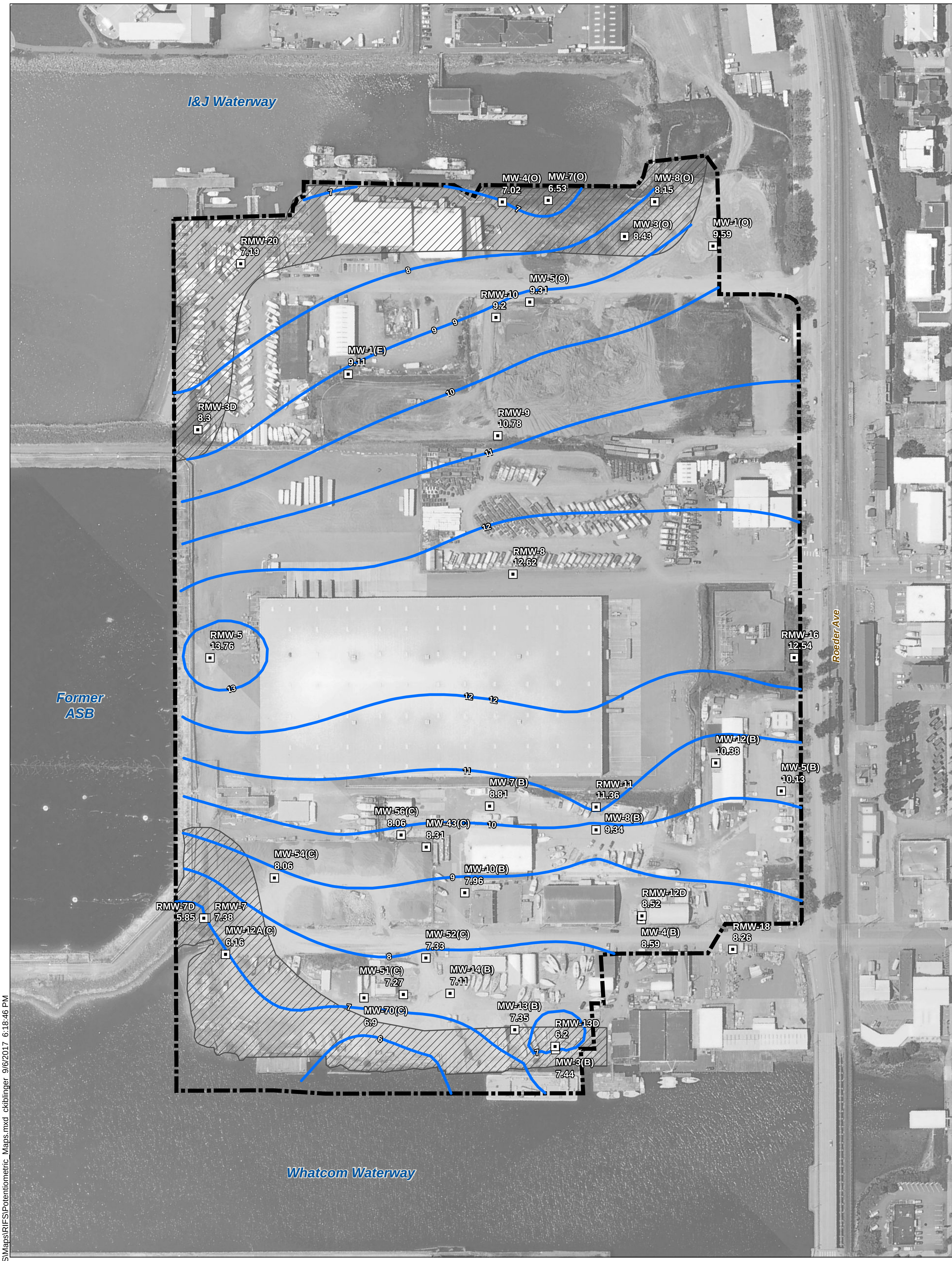
Figure 3-4
September 2007 Potentiometric Map
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Gauged Well

Potentiometric Contours - March 2008

Approximate Extent of Tidally Influenced Area

Central Waterfront Site Boundary

Project North

True North

Feet

0 100 200 300 400

NOTES:
1. Water levels were gauged on March 22, 2008.
2. Water levels in tidally influenced wells are the average of the high and low tide measurements.

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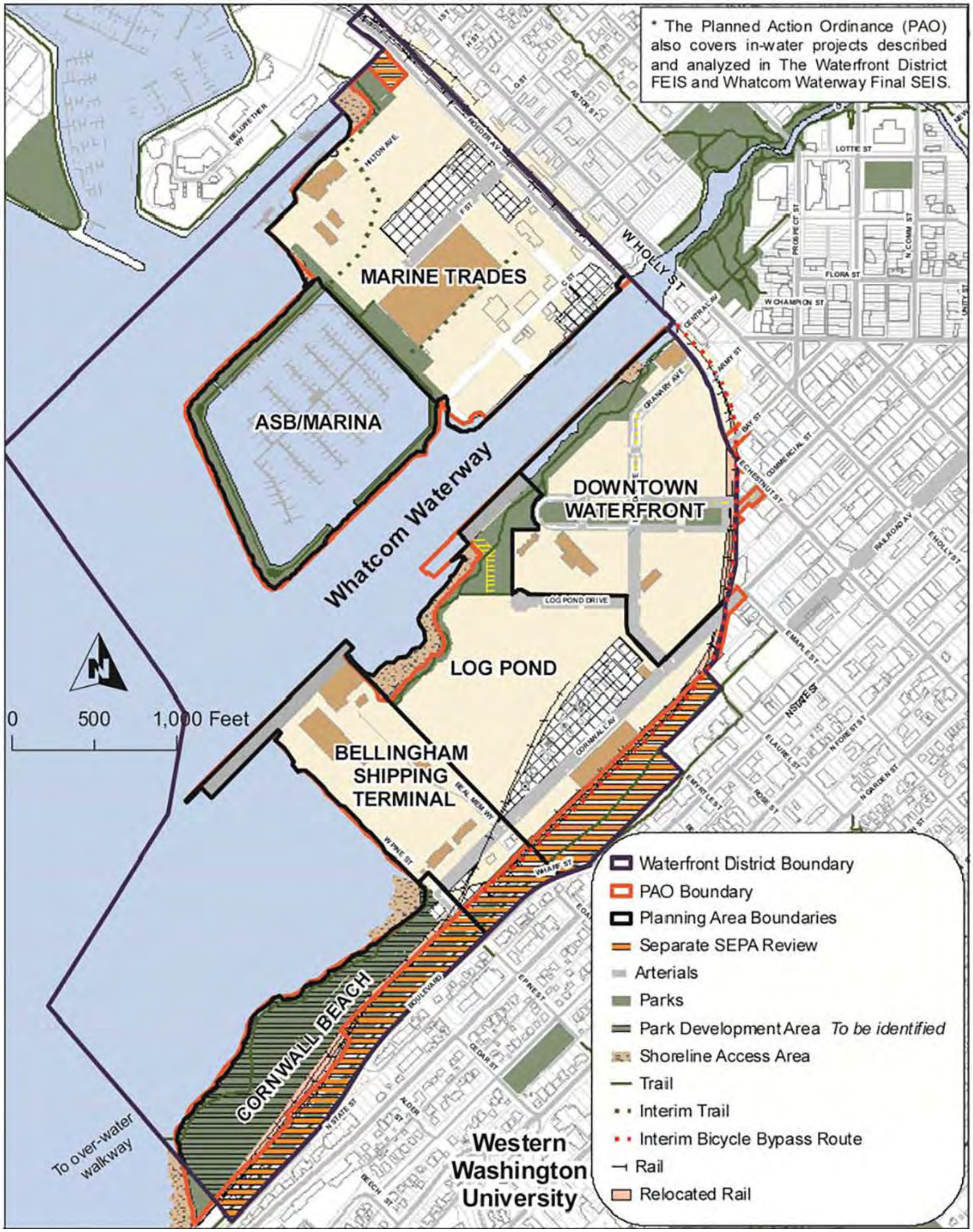
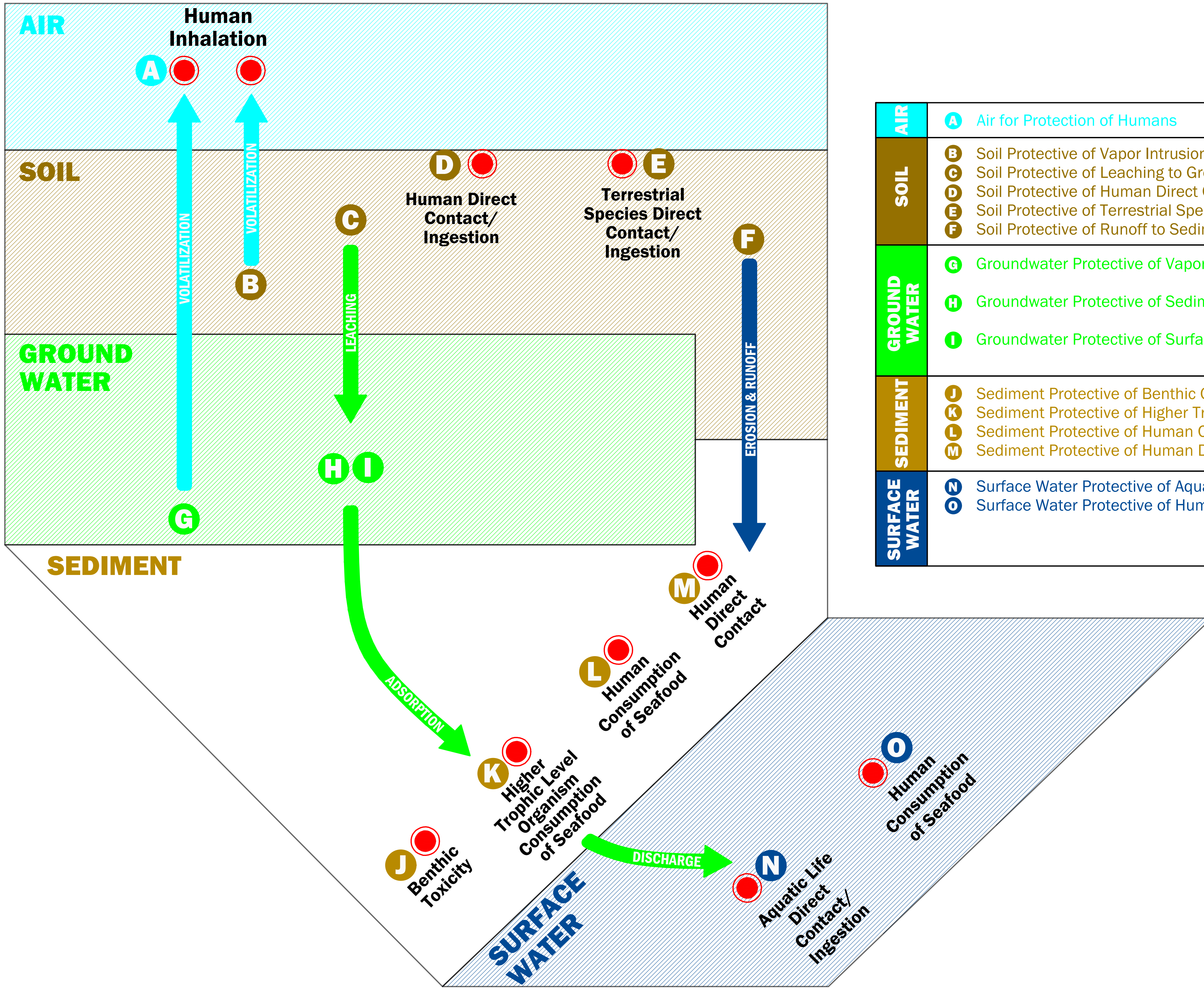
Figure 3-5
March 2008 Potentiometric Map
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



SOURCE: Figure prepared from Figure 1-1 of the Final Waterfront District Sub-area Plan, 2013

Figure 3-6
Proposed Planning Framework: Waterfront District
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

ANCHOR QEA



AIR	A Air for Protection of Humans	Groundwater and soil screening levels protective of vapor intrusion
SOIL	B Soil Protective of Vapor Intrusion C Soil Protective of Leaching to Groundwater D Soil Protective of Human Direct Contact E Soil Protective of Terrestrial Species F Soil Protective of Runoff to Sediments	Subarea-specific empirical soil vapor data Calculated soil screening levels protective of groundwater (Table 4-2a) Soil screening levels protective of direct contact from CLARC (Table 4-2a) Pathway incomplete at Site (refer to Section 3.4.1) Sub-Area specific
GROUND WATER	G Groundwater Protective of Vapor Intrusion H Groundwater Protective of Sediment I Groundwater Protective of Surface Water	Groundwater screening levels protective of vapor intrusion from Ecology (2009) (Table 4-1) & subarea-specific empirical soil vapor data Calculated groundwater (porewater) screening levels protective of sediment (Table 4-1) Groundwater screening levels protective of marine water from CLARC (Table 4-1)
SEDIMENT	J Sediment Protective of Benthic Organisms K Sediment Protective of Higher Trophic Level Organisms L Sediment Protective of Human Consumption of Seafood M Sediment Protective of Human Direct Contact	Site does not include sediment in adjacent Whatcom Waterway and I & J Waterway site. However, groundwater screening levels applied at Site protect against recontamination of Whatcom Waterway and I & J Waterway sediment (exposure pathway H), as described in Section 4.2.1.
SURFACE WATER	N Surface Water Protective of Aquatic Life O Surface Water Protective of Human Consumption of Seafood	Site does not include surface water in adjacent Whatcom Waterway and I & J Waterway site. However, groundwater screening levels applied at Site are protective of Whatcom Waterway and I & J Waterway surface water (exposure pathway I), as described in Section 4.2.1.

LEGEND:

LEACHING — Contaminant Transport Pathway

Point of Exposure

M — Exposure Pathway / Screening Level

SOURCE: Drawing prepared from data provided by Aspect Consulting.

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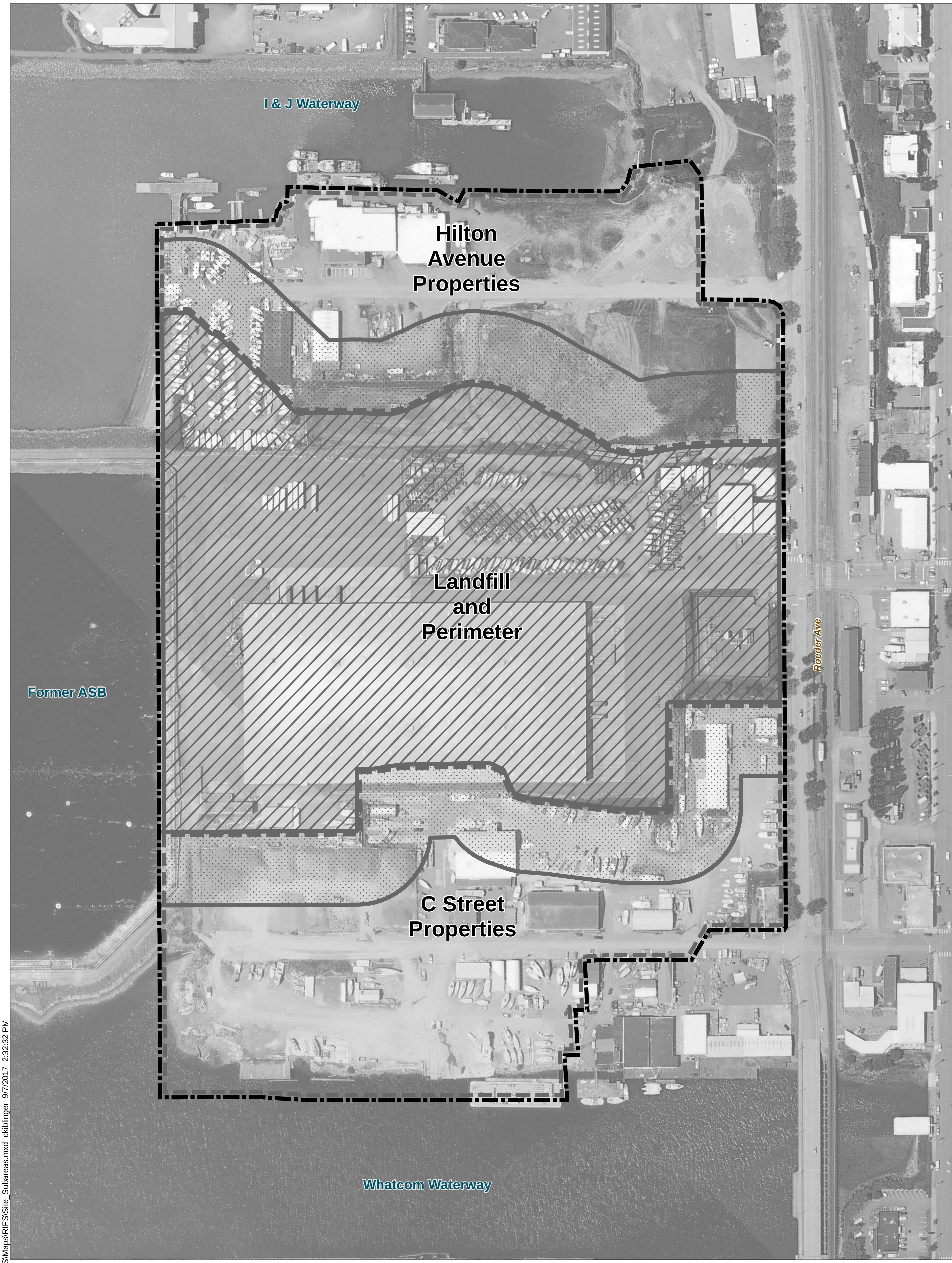
Figure 4-1
Exposure Pathways Considered for Soil and Groundwater Screening Level Development
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary
Central Waterfront Site Boundary

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Landfill refuse area is assumed to be contaminated based on direct contact scenario.
2. Aerial by U.S. Geological Survey: July 2009.

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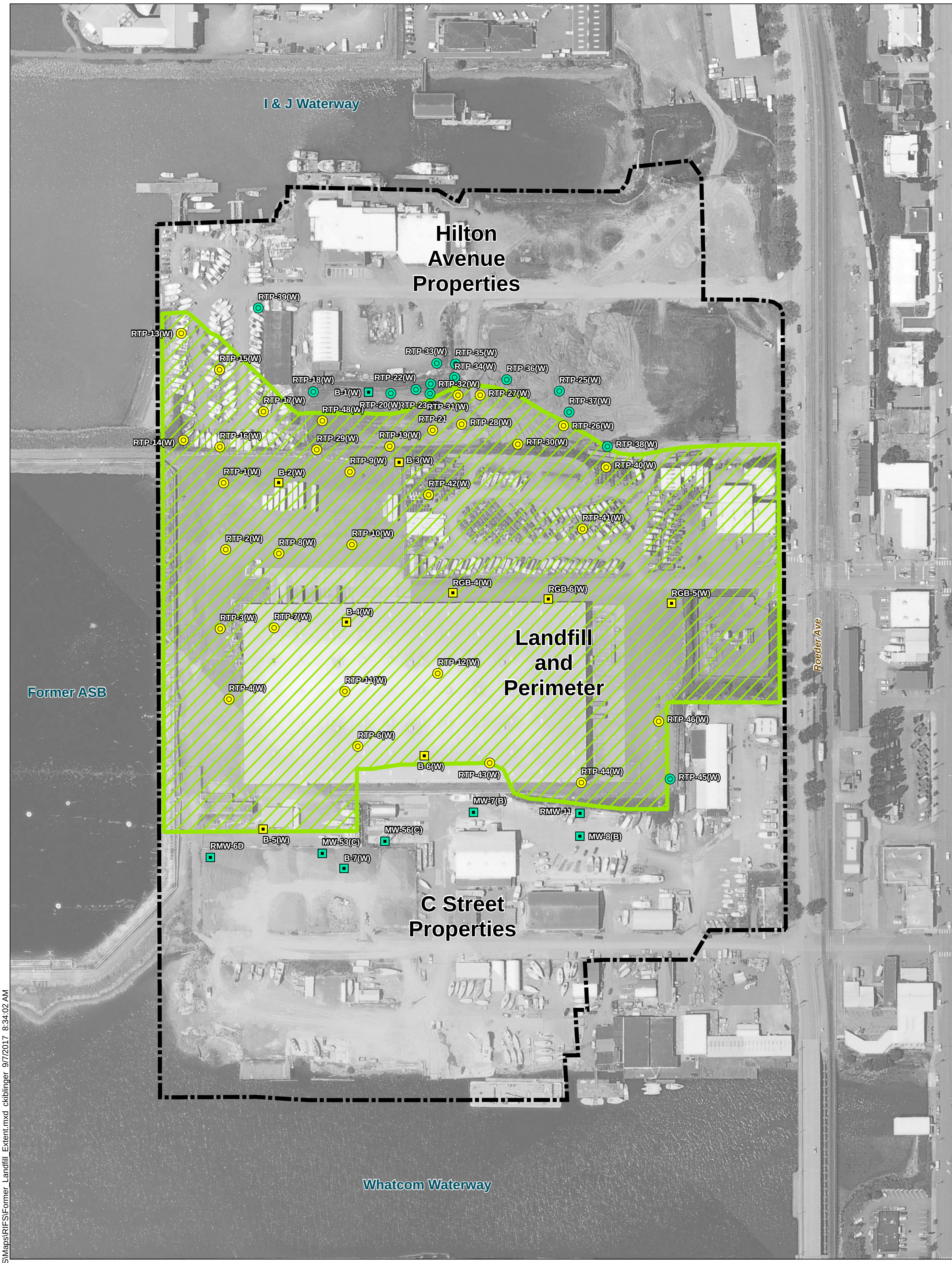
Figure 5-1
Site Subareas
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



- Test Pit Within Landfill Refuse
- Test Pit Outside Landfill Refuse
- Soil Boring Within Landfill Refuse
- Soil Boring Outside Landfill Refuse
- Central Waterfront Site Boundary
- Extent of Landfill Refuse

Project North

True North

Feet

0 100 200 300 400

NOTES:
1. Landfill refuse area is assumed to be contaminated based on direct contact scenario.
2. Test pits and boring completed in 1999 as part of Roeder Avenue Warehouse Pre-Design Testing.
3. Aerial by U.S. Geological Survey: July 2009.

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Figure 6-1
Extent of Former Landfill Refuse
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

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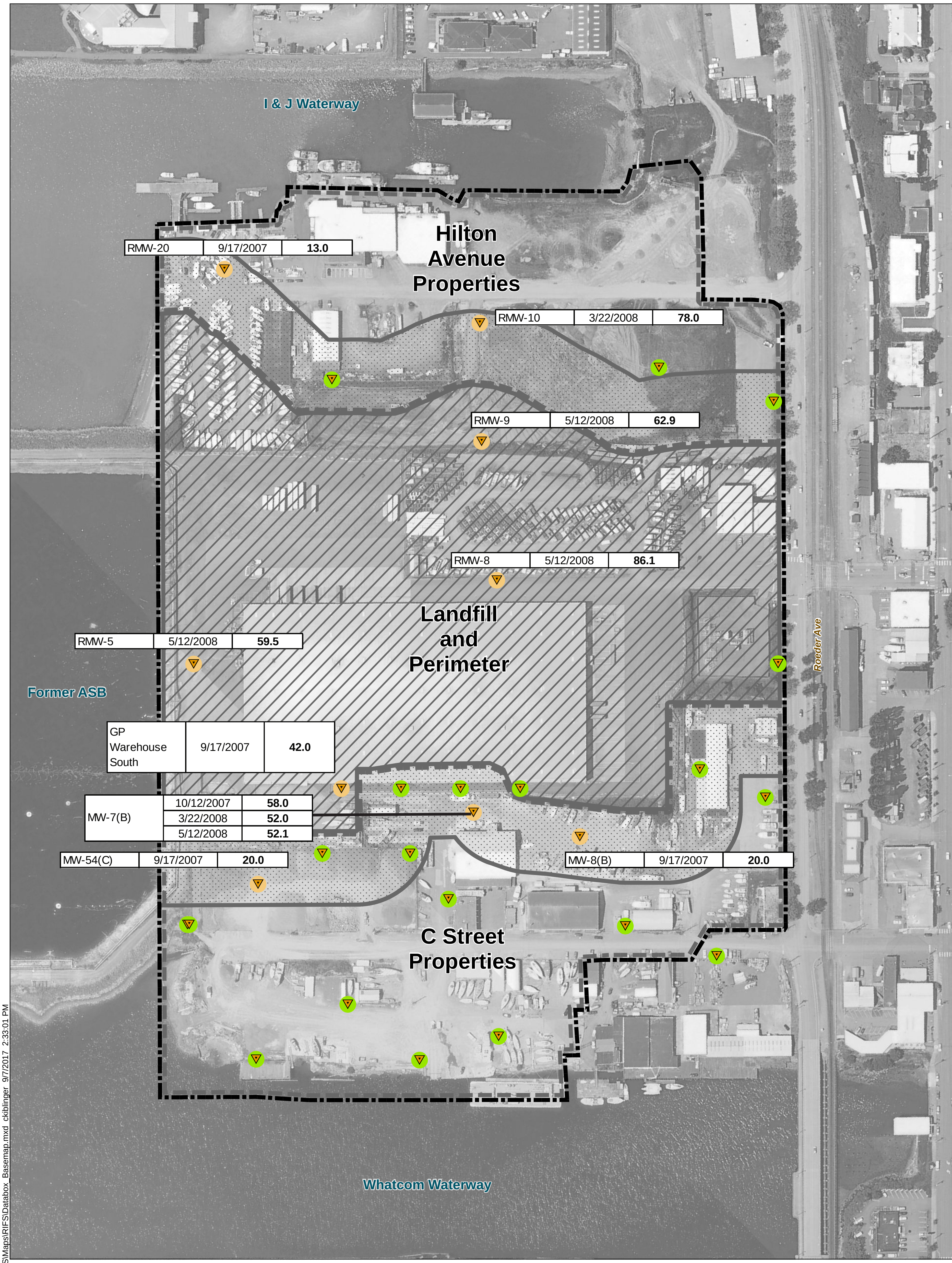

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Landfil Gas (Methane) Location (2001, 2007/2008, and 2013)
Methane < 10% LEL
Methane > 10% LEL
Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary
Central Waterfront Site Boundary

Landfill Gas-methane:

Well ID	Date	LEL (% LEL)

Project North
True North

Feet
0 100 200 300 400

Notes (landfill gas-methane):
1. Methane concentrations were evaluated by measuring the combustible gases present in the headspace of the monitoring wells and results are reported as a percentage of the lower explosive limit (LEL).
2. Landfill gas (methane) measurements presented for monitoring well locations with measurements greater than 10% LEL for most recent monitoring.
3. Landfill gas measurements were performed as part of the 2001 Roeder Avenue Landfill RI, 2007/2008 Central Waterfront RI, and 2013 Supplemental RI.

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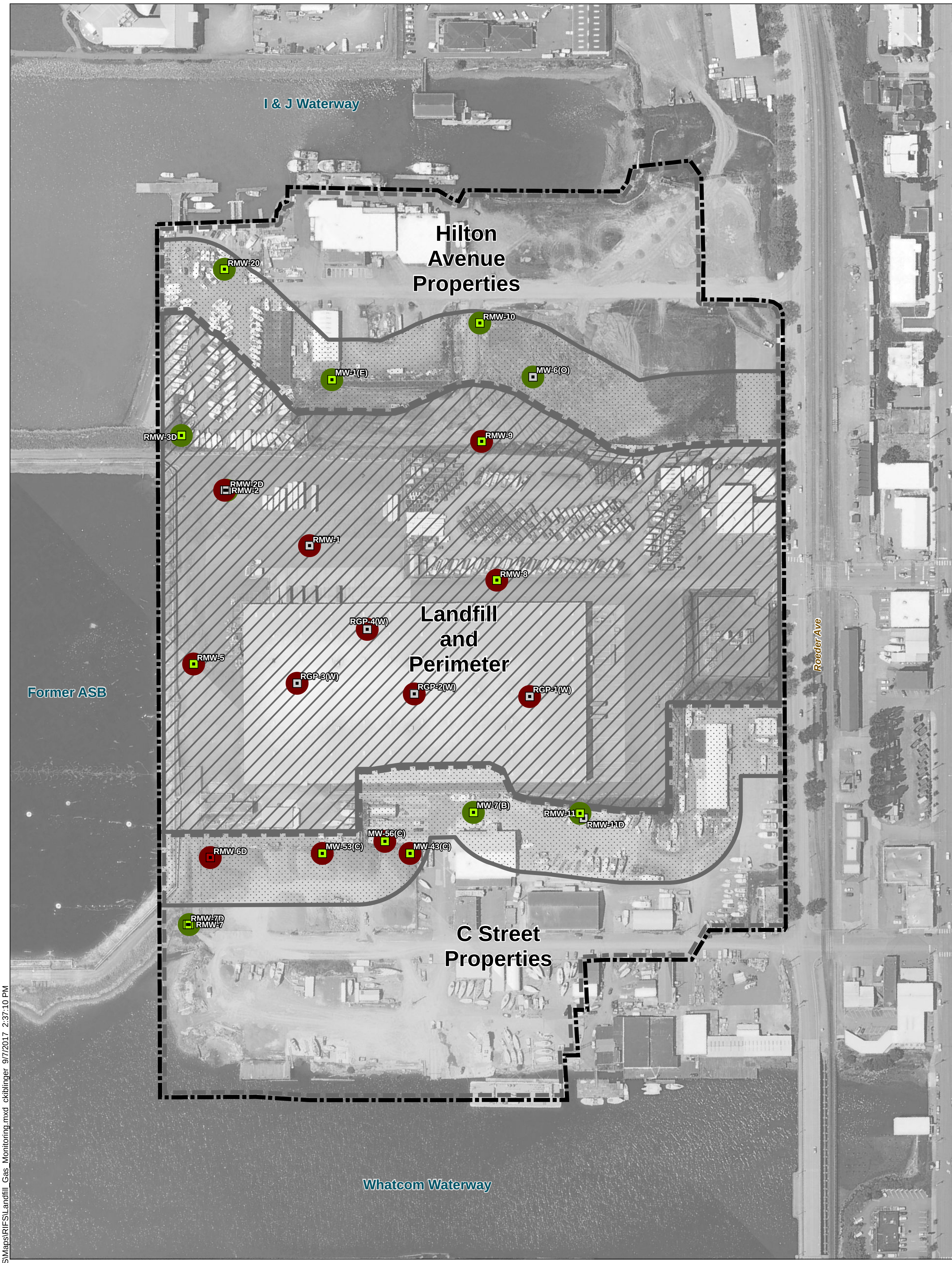
Figure 6-2
Landfill Gas Monitoring Distribution
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Monitoring Well Status (RI Survey)

- Well-Active
- Well-Decommissioned
- Well-Missing and Likely Destroyed
- Monitoring Well Below Screening Levels
- Monitoring Well Exceeds Screening Levels

- Extent of Landfill Refuse
- Landfill Perimeter
- Subarea Boundary
- Central Waterfront Site Boundary

Project North

True North

Feet

0 100 200 300 400

Note:
1. Tables 6-3b and 6-3c present groundwater sampling results for landfill perimeter wells.
2. Aerial by U.S. Geological Survey: July 2009.

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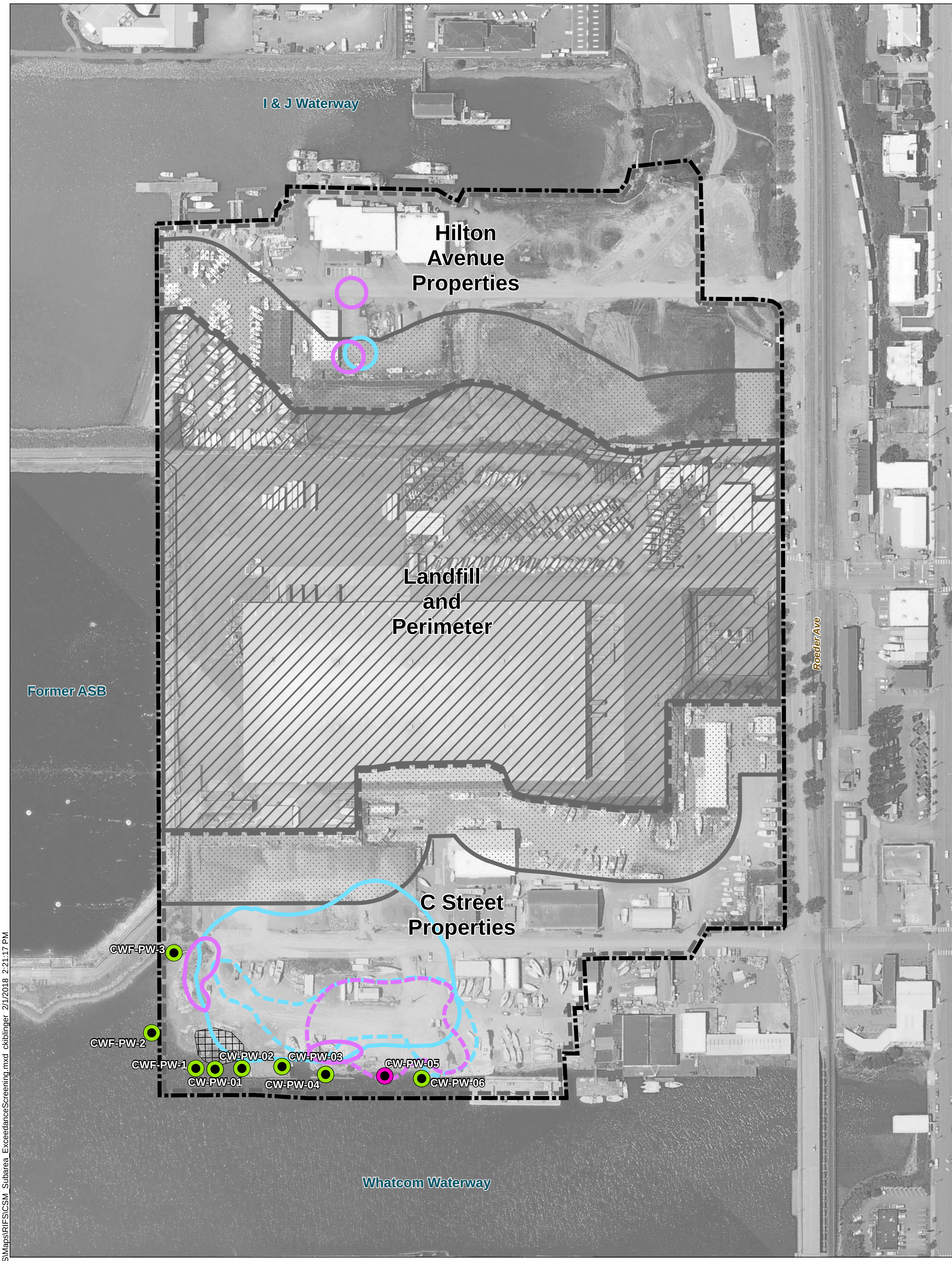
Figure 6-3
Landfill and Perimeter Groundwater Quality
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Extent of TPH-G Exceedances in Soil
Extent of TPH-G Exceedances in Groundwater and Porewater
Extent of BTEX Exceedances in Soil
Extent of BTEX Exceedances in Groundwater and Porewater
Central Waterfront Site Boundary
Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary
Porewater Sampling Location
Below Screening Levels
Exceeds Screening Levels

NOTES:
1. Lateral extent of TPH-G and BTEX exceedances in soil, groundwater, and porewater are approximate and based on the most stringent screening levels.
2. For locations with multiple samples, the highest concentration was used; groundwater and porewater results include 2002-current.
3. TPH-G = Gasoline range hydrocarbons; BTEX = benzene, toluene, ethylbenzene, and xylene.
4. Aerial by U.S. Geological Survey: July 2009.

Project North
True North

Feet
0 100 200 300 400

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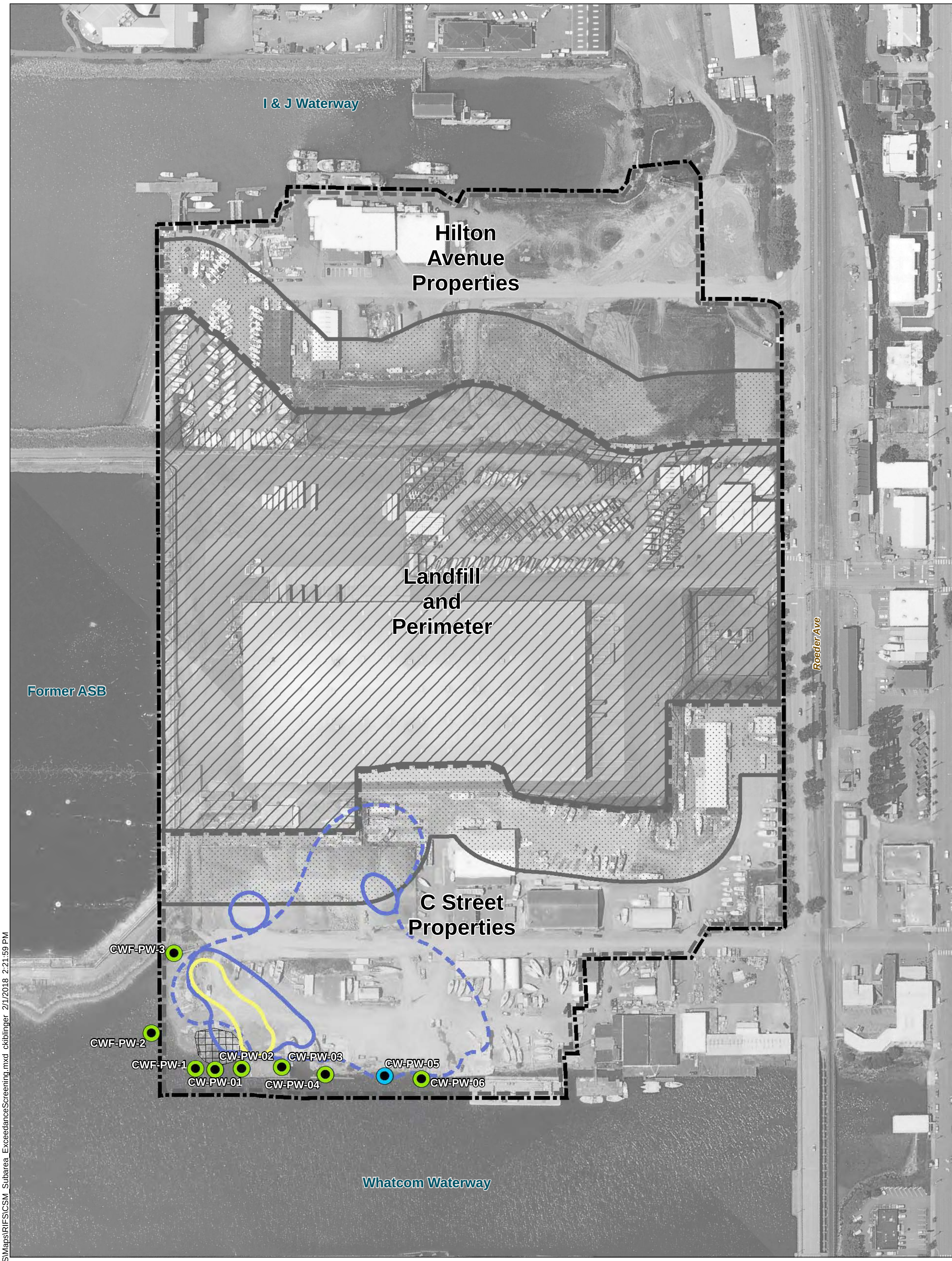
Figure 6-4
TPH-Gasoline and BTEX Concentrations Above Cleanup Levels
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



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Extent of TPH-Dx in Soil with Silica Gel Cleanup
Extent of TPH-Dx in Soil without Silica Gel Cleanup
Extent of TPH-Dx in Groundwater and Porewater without Silica Gel Cleanup

Central Waterfront Site Boundary
Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary

Porewater Sampling Location
Below Screening Levels
Exceeds Screening Levels

NOTES:
1. Lateral extent of TPH-Dx exceedances in soil, groundwater, and porewater are approximate and based on the most stringent screening levels.
2. For locations with multiple samples, the highest concentrations were used; groundwater and porewater results include 2002-current.
3. Results above include the sum of diesel and motor oil range hydrocarbons.
4. No groundwater samples analyzed with silica gel cleanup exceeded screening levels.
5. Aerial by U.S. Geological Survey: July 2009.

Project North
True North

Feet
0 100 200 300 400

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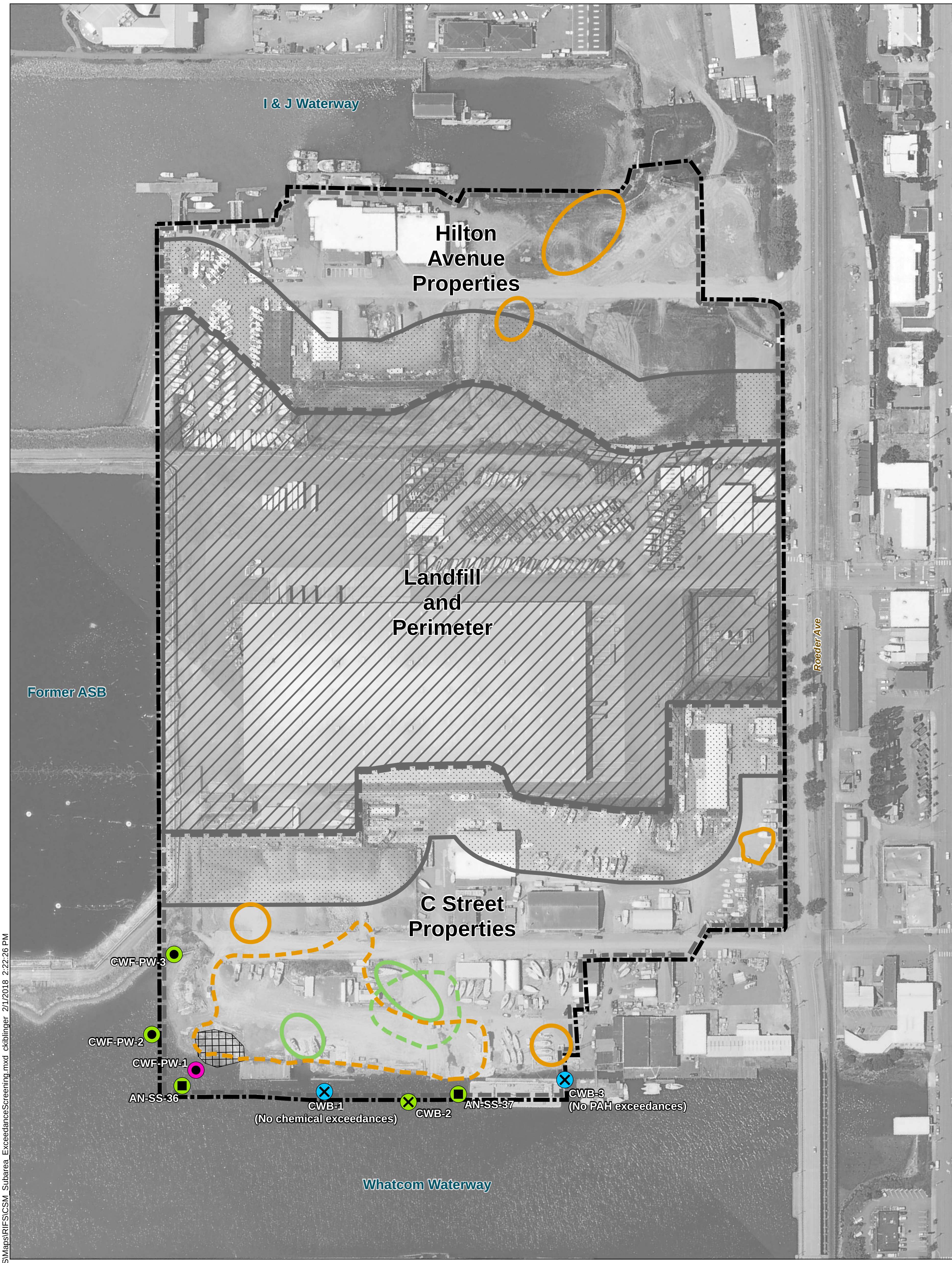
Figure 6-5
TPH-Dx Concentrations Above Cleanup Levels
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



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Extent of Total cPAH Exceedances in Soil
Extent of Total cPAH Exceedances in Groundwater
Extent of Naphthalene Exceedances in Soil
Extent of Naphthalene Exceedances in Groundwater
Central Waterfront Site Boundary
Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary

Existing Surface Sediment Sampling Station
RI/FS (2002)
Colony Wharf (2004)

Sediment Biological Criteria
No Exceedance
SQS Exceedance

Porewater Sampling Location
Below Screening Levels
Exceeds Screening Levels

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Lateral extent of cPAH and naphthalene exceedances in soil and groundwater are approximate and based on the most stringent screening levels.
2. Sediment samples collected offshore of the Central Waterfront Site show no exceedances of PAH constituents to sediment quality criteria.
3. For locations with multiple samples, the highest concentration was used; groundwater results include 2002-current.
4. cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbon.
5. Aerial by U.S. Geological Survey: July 2009.

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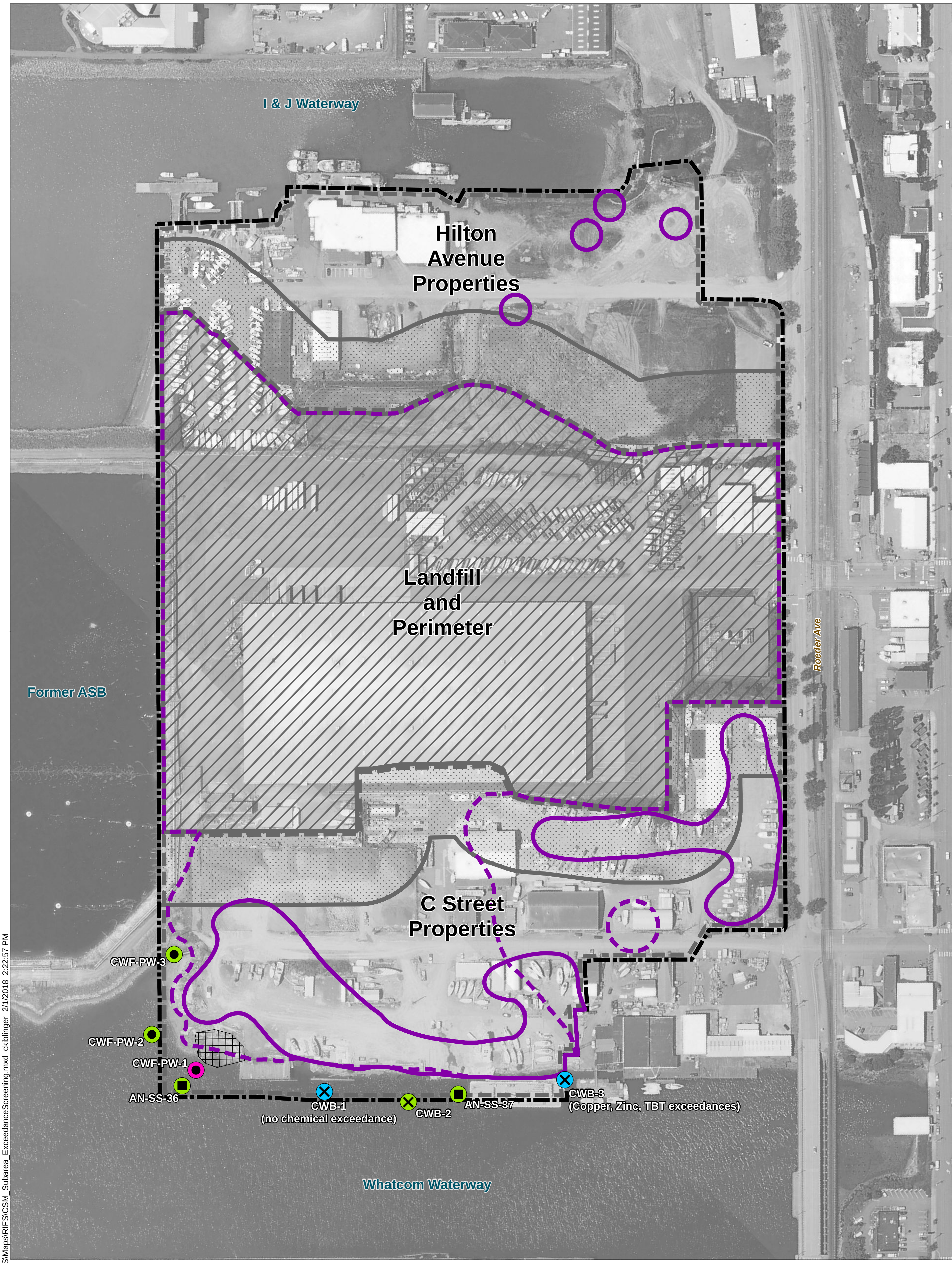
Figure 6-6
Total cPAH and Naphthalene Concentrations Above Cleanup Levels
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Extent of Metals Exceedances in Soil
Extent of Metals Exceedances in Groundwater
Central Waterfront Site Boundary
Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary

Existing Surface Sediment Sampling Station
- RI/FS (2002)
- Colony Wharf (2004)

Sediment Biological Criteria
- No Exceedance
- SQS Exceedance

Porewater Sampling Location
- Below Screening Levels
- Exceeds Screening Levels

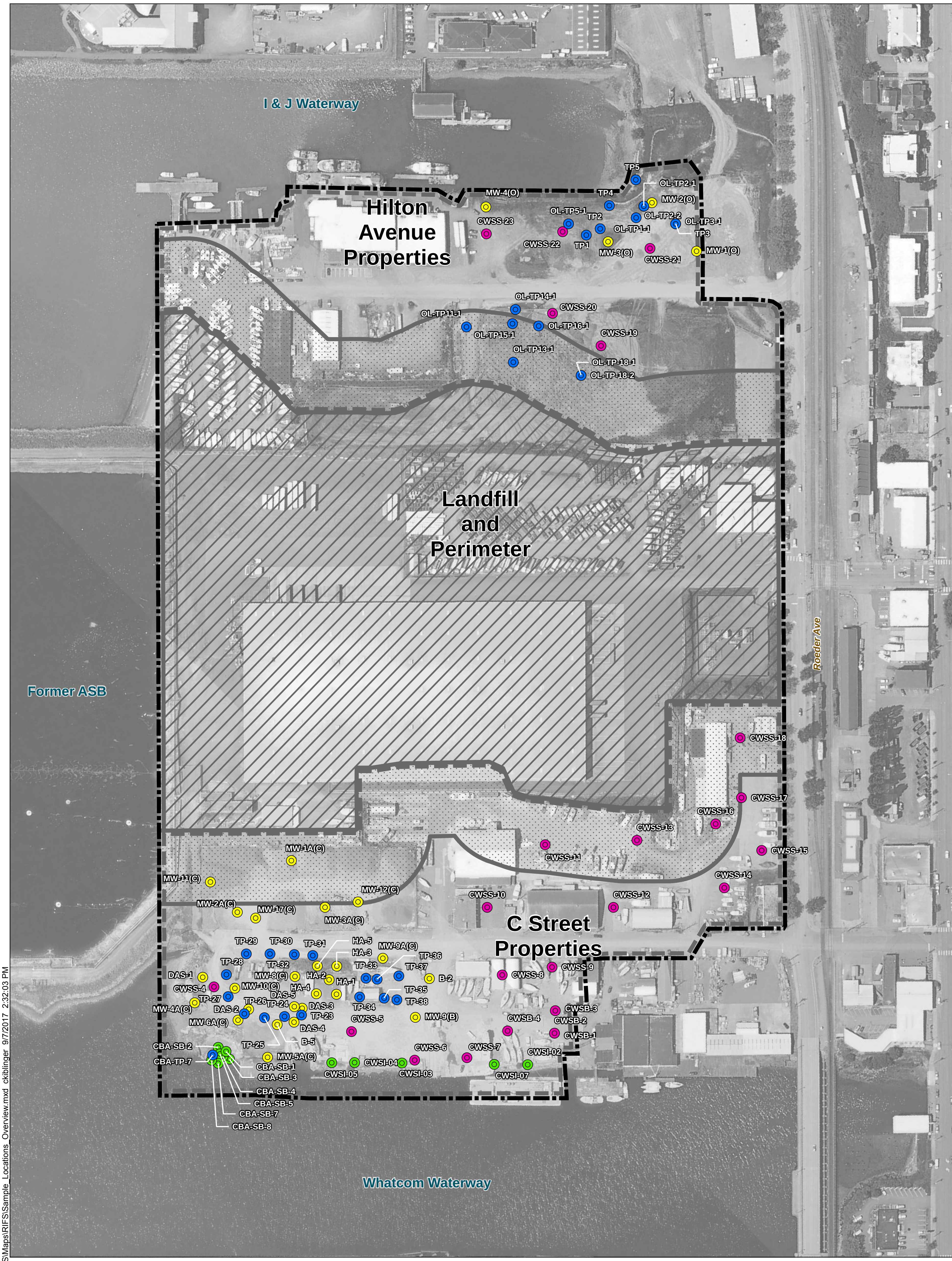
Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Lateral extent of metals exceedances in soil and groundwater are approximate and based on the most stringent screening levels.
2. For locations with multiple samples, the highest concentration was used; groundwater results include total and dissolved fractions from 2002-current.
3. Metals results include arsenic, cadmium, copper, chromium, lead, mercury, and zinc.
4. Metals exceedances in porewater are based on the dissolved fraction.
5. Aerial by U.S. Geological Survey: July 2009.

Figure 6-7
Metals Concentrations Above Cleanup Levels
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

ANCHOR QEA



Historical Soil Sample Location
- Soil Boring
- Test Pit
- RI Soil Boring or Surface Soil
- 2012 Soil Sample Location

- Extent of Landfill Refuse
- Landfill Perimeter
- Subarea Boundary
- Central Waterfront Site Boundary

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Unsaturated zone is defined as 0-5 feet below the ground surface.
2. Aerial by U.S. Geological Survey: July 2009.

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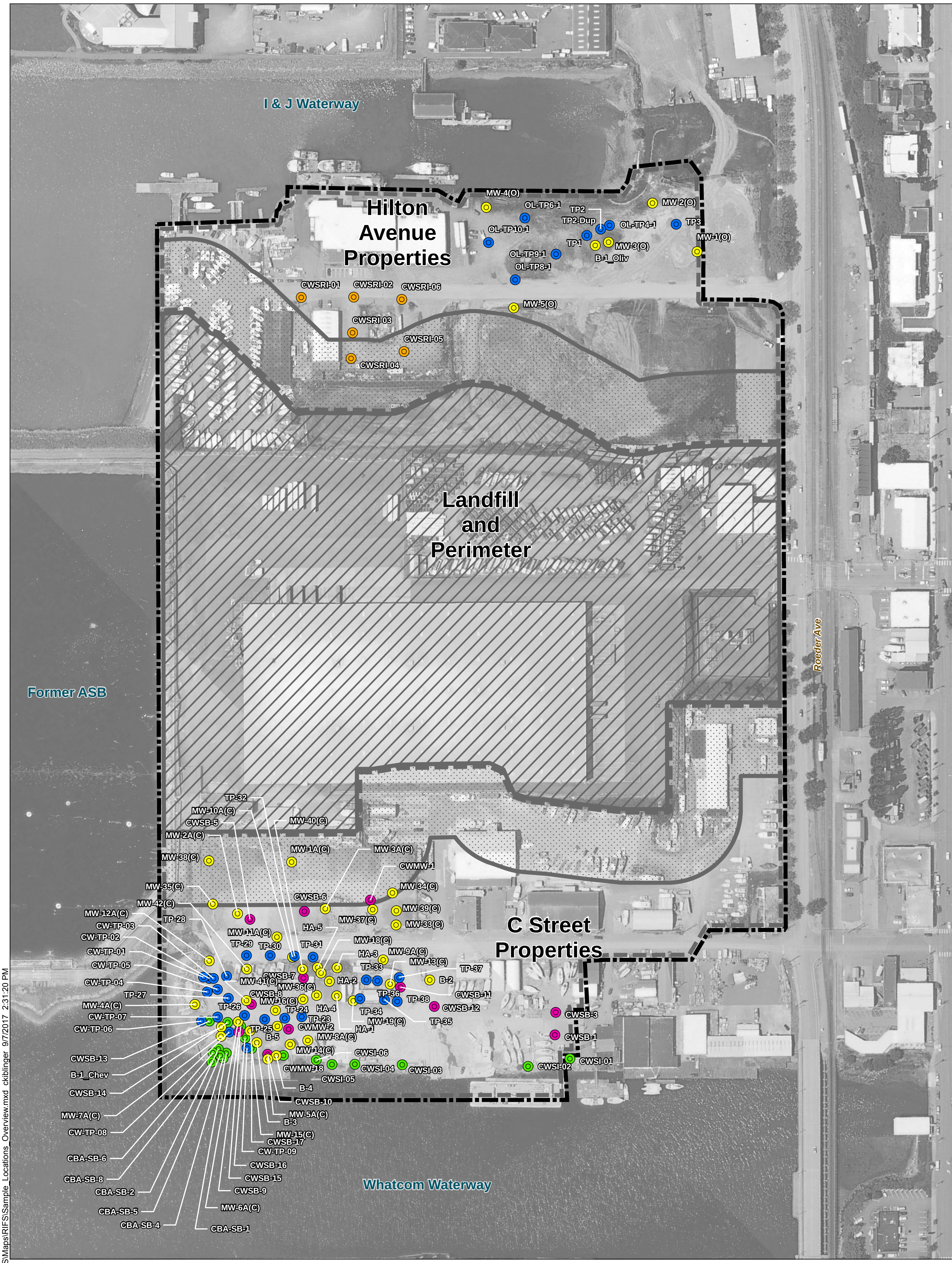
ANCHOR QEA

Figure 6-8a
Historical and RI Soil Sampling Locations – Unsaturated Zone
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Historical Soil Sample Location

- Soil Boring
- Test Pit
- RI Soil Boring
- 2012 Soil Sample Location
- 68b2013 Soil Sample Location

- Extent of Landfill Refuse
- Landfill Perimeter
- Subarea Boundary
- Central Waterfront Site Boundary

Project North

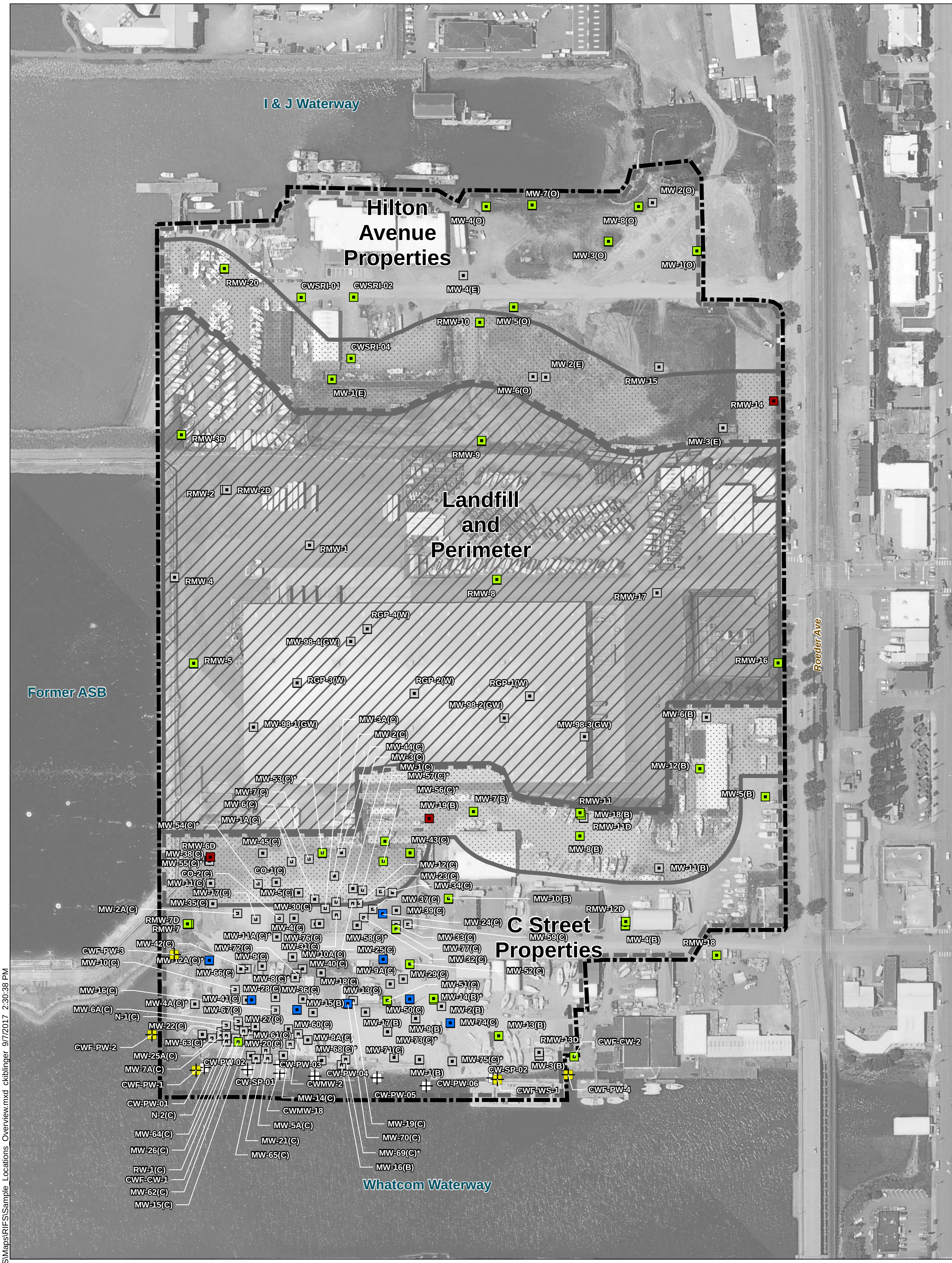
True North

Feet

0 100 200 300 400

NOTES:
1. Saturated zone is defined as 5 or greater feet below the ground surface.
2. Aerial by U.S. Geological Survey: July 2009.

Figure 6-8b
Historical and RI Soil Sampling Locations – Saturated Zone
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Monitoring Well Status (RI Survey)

- Well-Active
- Well-Condition Unknown, Surface Obstruction Blocks Access
- Well-Decommissioned
- Well-Missing and Likely Destroyed
- 2012 Porewater/Seep
- 2016 Porewater/Seep

- Extent of Landfill Refuse
- Landfill Perimeter
- Subarea Boundary
- Central Waterfront Site Boundary

Project North

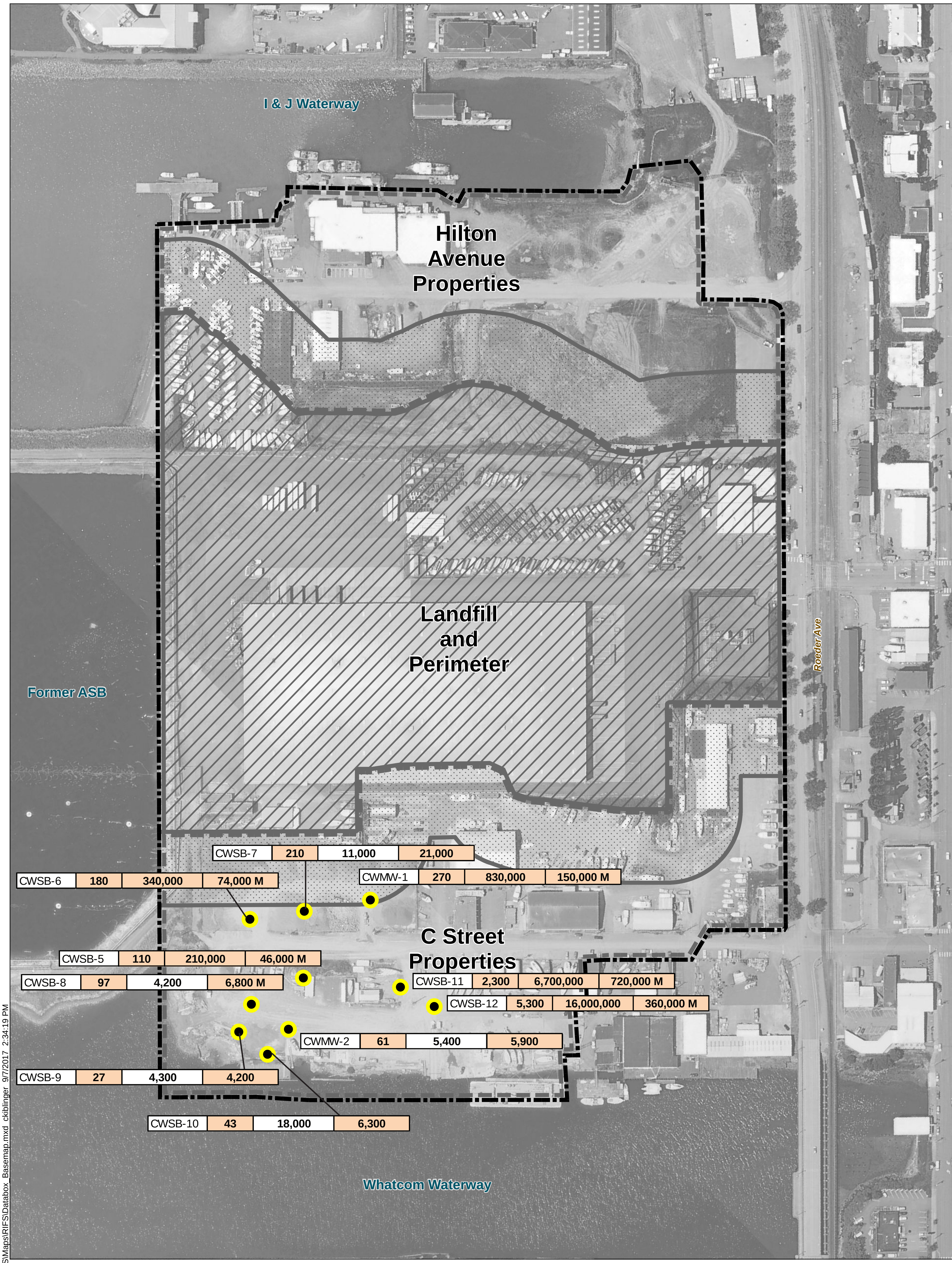
True North

Feet

0 100 200 300 400

NOTE:
1. Aerial by U.S. Geological Survey: July 2009.

Figure 6-8c
Historical and RI Groundwater Monitoring Well Locations
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



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- Soil Gas Location (2007)
- Exceeds Soil Gas Screening Level
- Extent of Landfill Refuse
- Landfill Perimeter
- Subarea Boundary
- Central Waterfront Site Boundary

Soil Gas:

Soil Gas ID	Benzene	APH 5-8	APH 9-12
Screening Level	3.2	27,000	1,400

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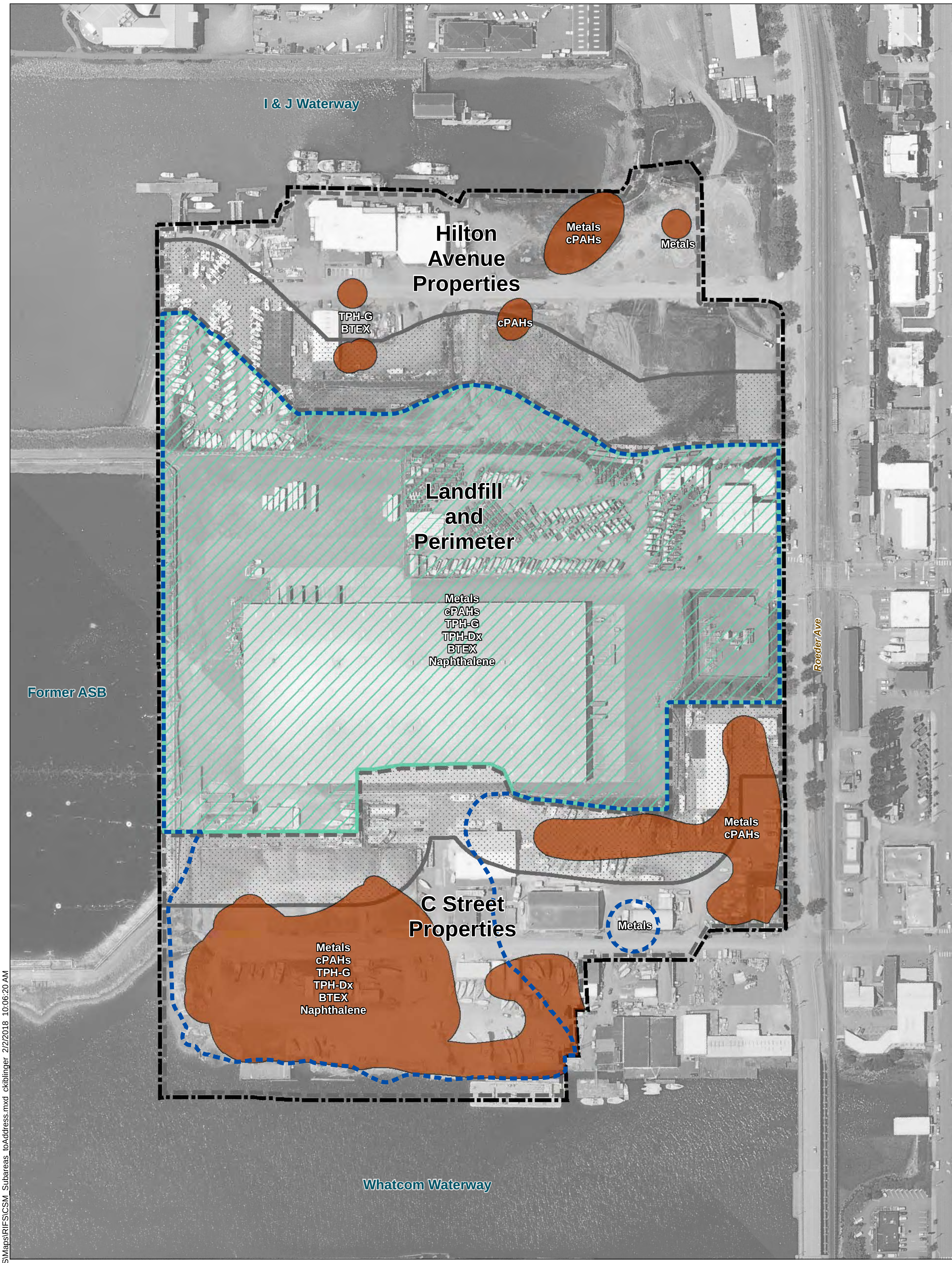
Notes (soil gas):
1. Results in ug/m^3.
2. Soil gas screening levels consistent with Ecology's draft guidance for evaluating vapor intrusion (Ecology 2009).
3. Soil gas sampling was conducted in August 2007 as part of the Central Waterfront RI. Sample intervals were all at 5-ft below ground surface.
4. M = matrix interference - result may be biased high.

Figure 6-9
Soil Gas Monitoring in C Street Subarea
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



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Extent of Groundwater and Porewater Concentrations Above Cleanup Levels
Extent of Soil Concentrations Above Cleanup Levels
Central Waterfront Site Boundary
Extent of Landfill Refuse
Landfill Perimeter
Subarea Boundary

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Areas within the landfill boundary are assumed to pose a threat to human health or the environment through direct contact or release to the environment
2. Landfill gas is limited to areas within the landfill perimeter and soil gas is limited to areas of soil and/or groundwater petroleum impacts in the C Street Properties subarea.
3. Areas to address in the FS are based on screening levels and the FS will evaluate a range of cleanup levels applicable to the Site.
4. Aerial by U.S. Geological Survey: July 2009.

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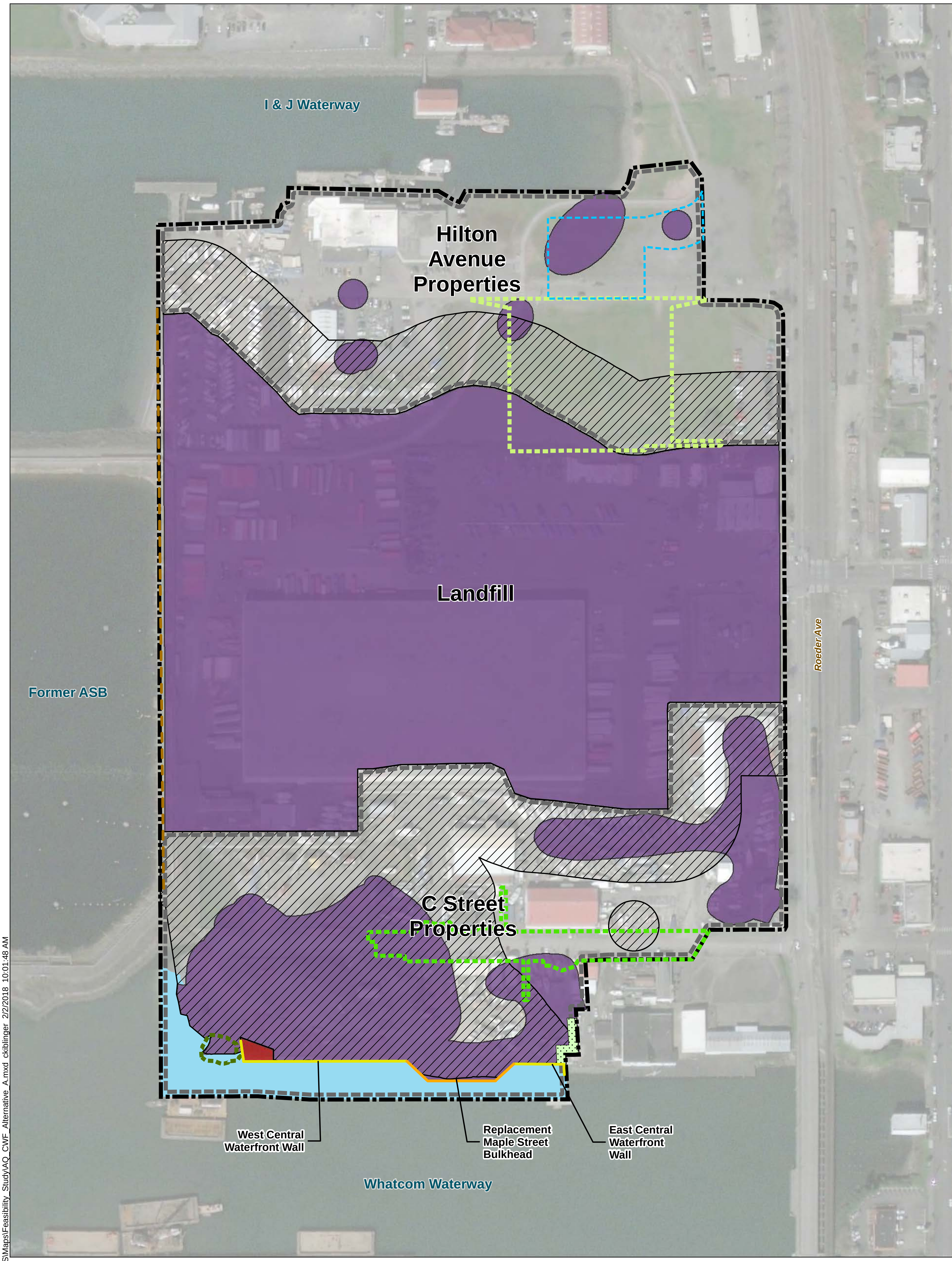
Figure 6-10
Subareas to Address in FS
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



- Approximate Clay Berm (1964)
- Capping
- Hotspot Removal and Off-site Disposal
- Groundwater MNA
- Contingent Targeted Treatment
- Whatcom Waterway Cleanup
- All American Marine Building Project
- C Street Terminal Project Phase 1
- Chevron Area Interim Action
- Central Waterfront Site Boundary
- Subarea Boundary
- Launch Route

FS - feasibility study
MNA - monitored natural attenuation
RI - remedial investigation

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Capping addresses the pathway for direct contact and erosion. Stormwater system upgrades as part of capping will be specified in the Engineering Design Report. The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces.
2. A permeable reactive barrier on the west C Street Properties is assumed in the FS as the targeted treatment for costing purposes only. Applicable treatment technology will be determined in the Engineering Design Report.
3. Aerial by National Agriculture Imagery Program (NAIP): July 2013.

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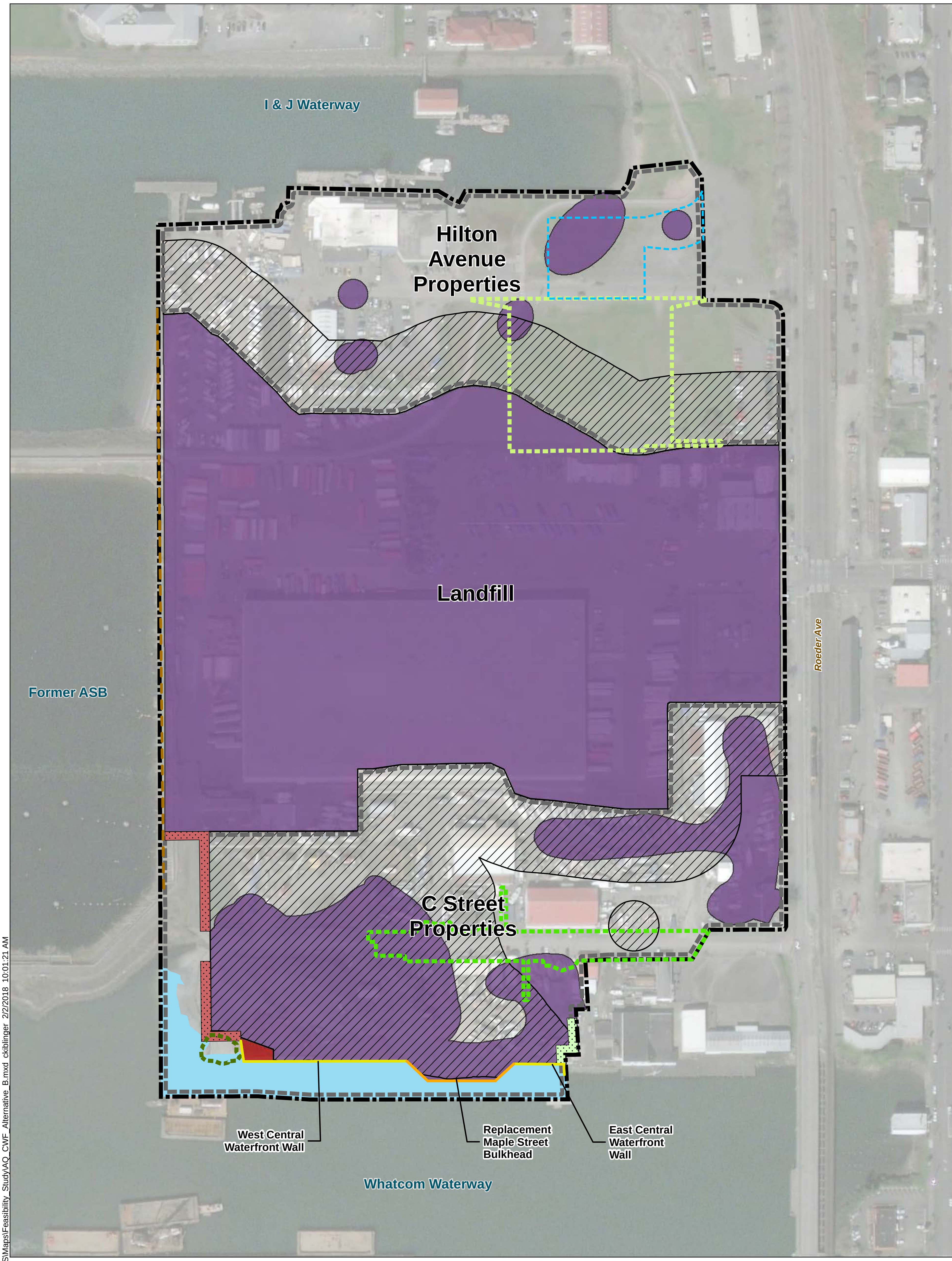
Figure 9-1
Alternative A
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Approximate Clay Berm (1964)
Capping
Hotspot Removal and Off-site Disposal
Groundwater MNA
Targeted Treatment
Contingent Targeted Treatment
Whatcom Waterway Cleanup
All American Marine Building Project
C Street Terminal Project Phase 1
Chevron Area Interim Action
Central Waterfront Site Boundary
Subarea Boundary
Launch Route

FS - feasibility study
MNA - monitored natural attenuation
RI - remedial investigation

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Capping addresses the pathway for direct contact and erosion. Stormwater system upgrades as part of capping will be specified in the Engineering Design Report. The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces.
2. A permeable reactive barrier in C Street Properties is assumed in the FS as the targeted treatment for costing purposes only. Applicable treatment technology will be determined in the Engineering Design Report.
3. The opening in the permeable reactive barrier represents the presence of a significant box culvert outfall located along C Street. The treatment system (if selected) would be designed to accommodate this structure, while performing the anticipated remedial function.
4. Aerial by National Agriculture Imagery Program (NAIP): July 2013.

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Figure 9-2
Alternative B
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

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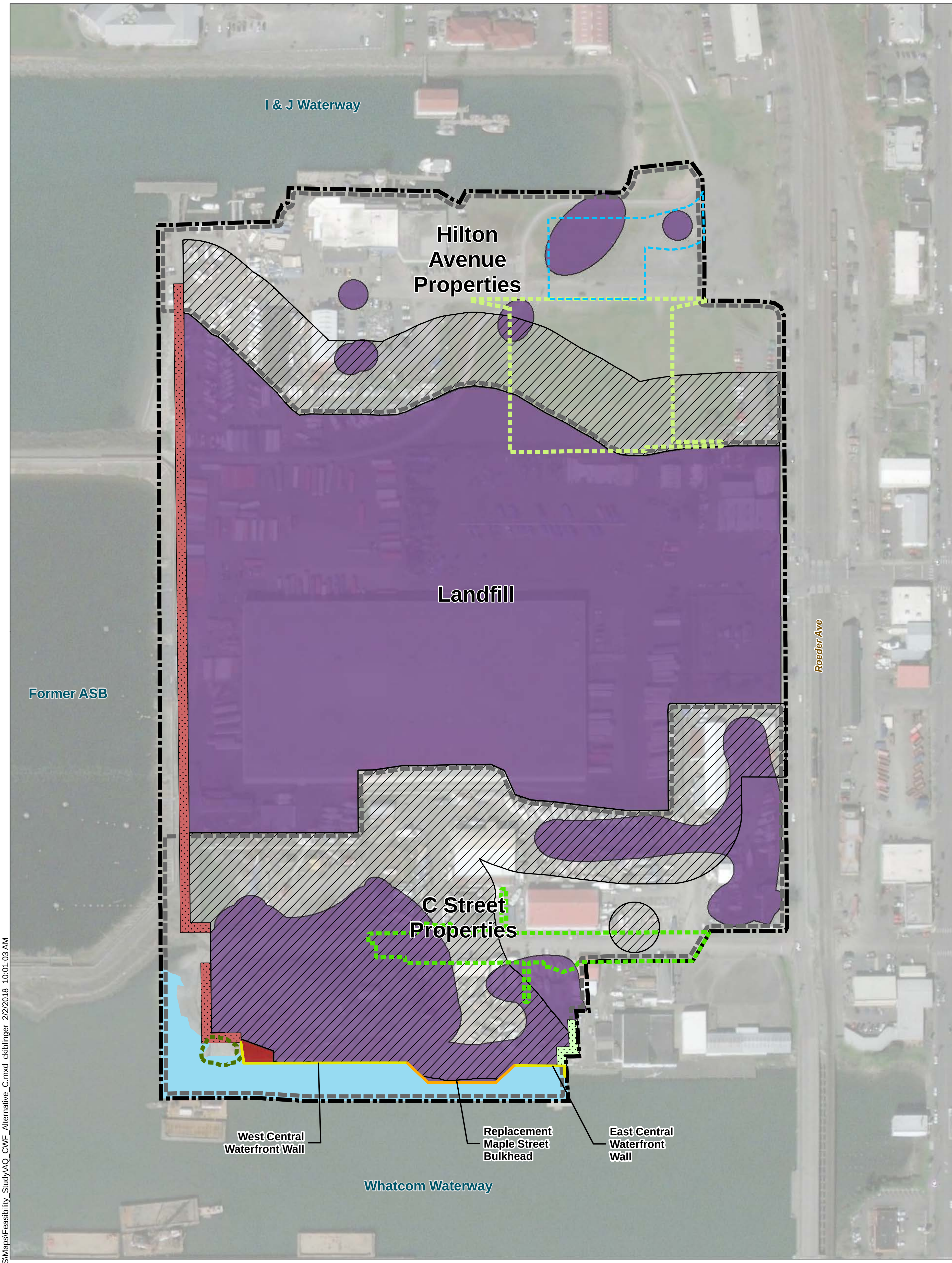

Capping
Hotspot Removal and Off-site Disposal
Groundwater MNA
Targeted Treatment
Contingent Targeted Treatment
Whatcom Waterway Cleanup
All American Marine Building Project
C Street Terminal Project Phase 1
Chevron Area Interim Action
Central Waterfront Site Boundary
Subarea Boundary
Launch Route

FS - feasibility study
MNA - monitored natural attenuation
RI - remedial investigation

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Capping addresses the pathway for direct contact and erosion. Stormwater system upgrades as part of capping will be specified in the Engineering Design Report. The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces.
2. A permeable reactive barrier in C Street Properties and Landfill areas is assumed in the FS as the targeted treatment for costing purposes only. Applicable treatment technology will be determined in the Engineering Design Report.
3. The opening in the permeable reactive barrier represents the presence of a significant box culvert outfall located along C Street. The shoreline treatment system (if selected) would be designed to accommodate this structure, while performing the anticipated remedial function.
4. Aerial by National Agriculture Imagery Program (NAIP): July 2013.

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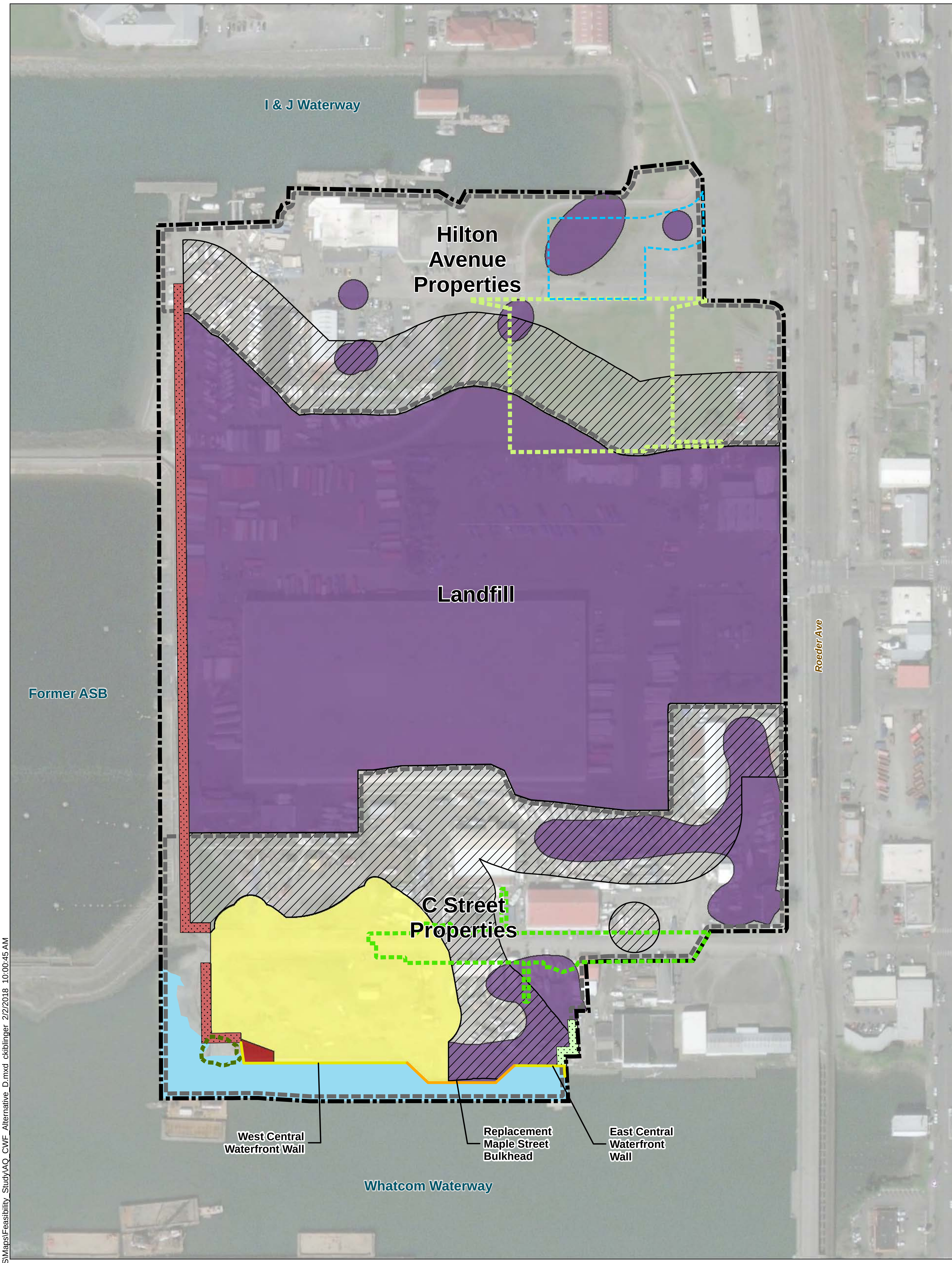
Figure 9-3
Alternative C
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



- Capping
- Hotspot Removal and Off-site Disposal
- In-Situ Treatment and Capping
- Groundwater MNA
- Targeted Treatment
- Contingent Targeted Treatment
- Whatcom Waterway Cleanup
- All American Marine Building Project
- C Street Terminal Project Phase 1
- Chevron Area Interim Action
- Central Waterfront Site Boundary
- Subarea Boundary
- Launch Route

FS - feasibility study
MNA - monitored natural attenuation
RI - remedial investigation
TPH - total petroleum hydrocarbon

Project North True North

Feet
0 100 200 300 400

NOTES:
1. Capping addresses the pathway for direct contact and erosion. Stormwater system upgrades as part of capping will be specified in the Engineering Design Report. The actual environmental cap will be determined during the design process and may consist of a combination of gravel and/or hard surfaces.
2. A permeable reactive barrier in C Street Properties and Landfill areas is assumed in the FS as the targeted treatment for costing purposes only. Applicable treatment technology will be determined in the Engineering Design Report.
3. The opening in the permeable reactive barrier represents the presence of a significant box culvert outfall located along C Street. The shoreline treatment system (if selected) would be designed to accommodate this structure, while performing the anticipated remedial function.
4. Air sparging is the assumed in-situ treatment for TPH in C Street Properties.
5. Aerial by National Agriculture Imagery Program (NAIP): July 2013.

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Figure 9-4
Alternative D
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

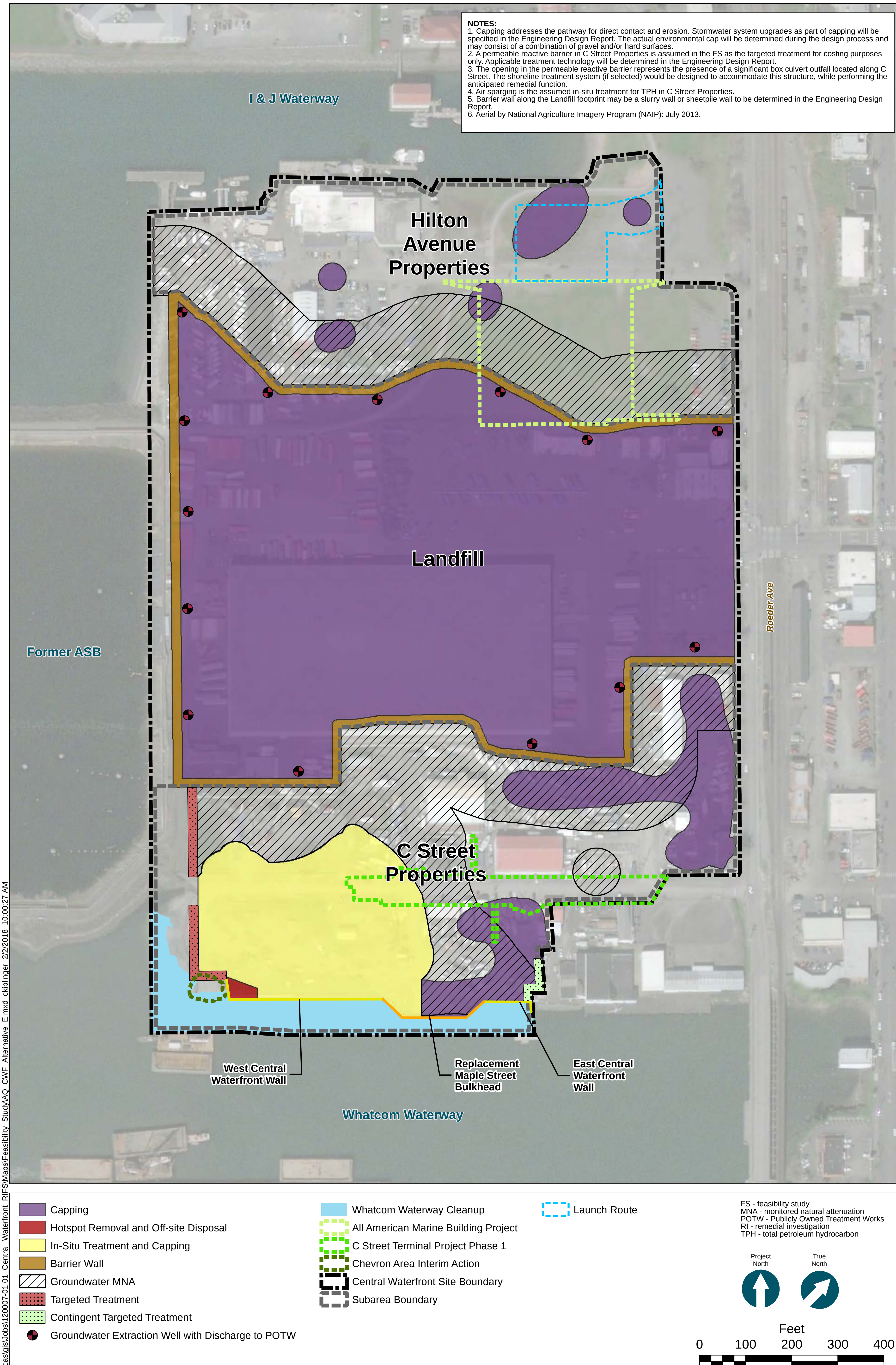

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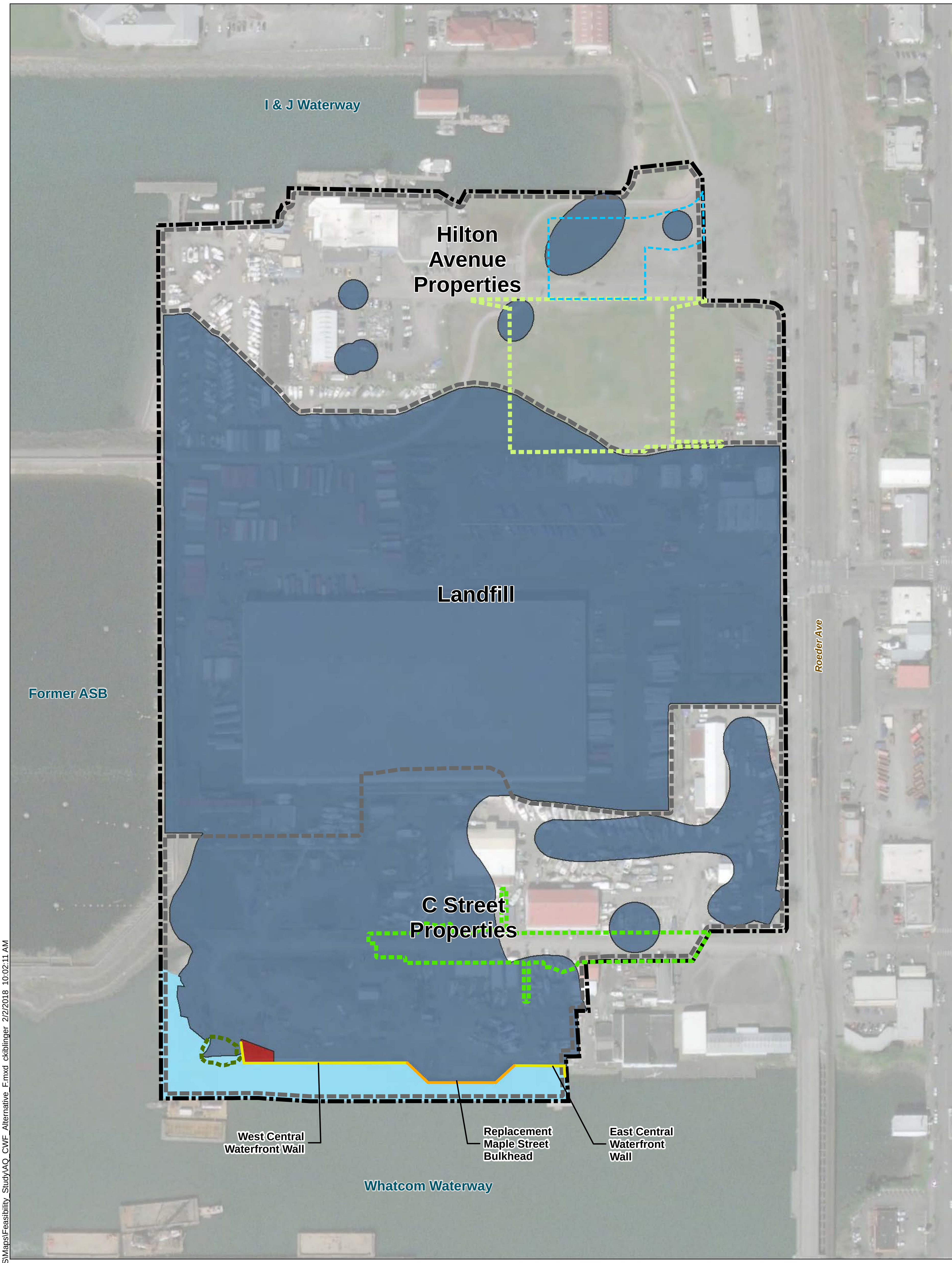
Figure 9-5
Alternative E
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA



Removal and Off-site Disposal
Hotspot Removal and Off-site Disposal
Whatcom Waterway Cleanup
All American Marine Building Project
C Street Terminal Project Phase 1
Chevron Area Interim Action
Central Waterfront Site Boundary
Subarea Boundary
Launch Route

FS - feasibility study
RI - remedial investigation

Project North
True North

Feet
0 100 200 300 400

NOTES:
1. Aerial by National Agriculture Imagery Program (NAIP): July 2013.

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Figure 9-6
Alternative F
RI/FS Report
Central Waterfront Site
Port of Bellingham, WA

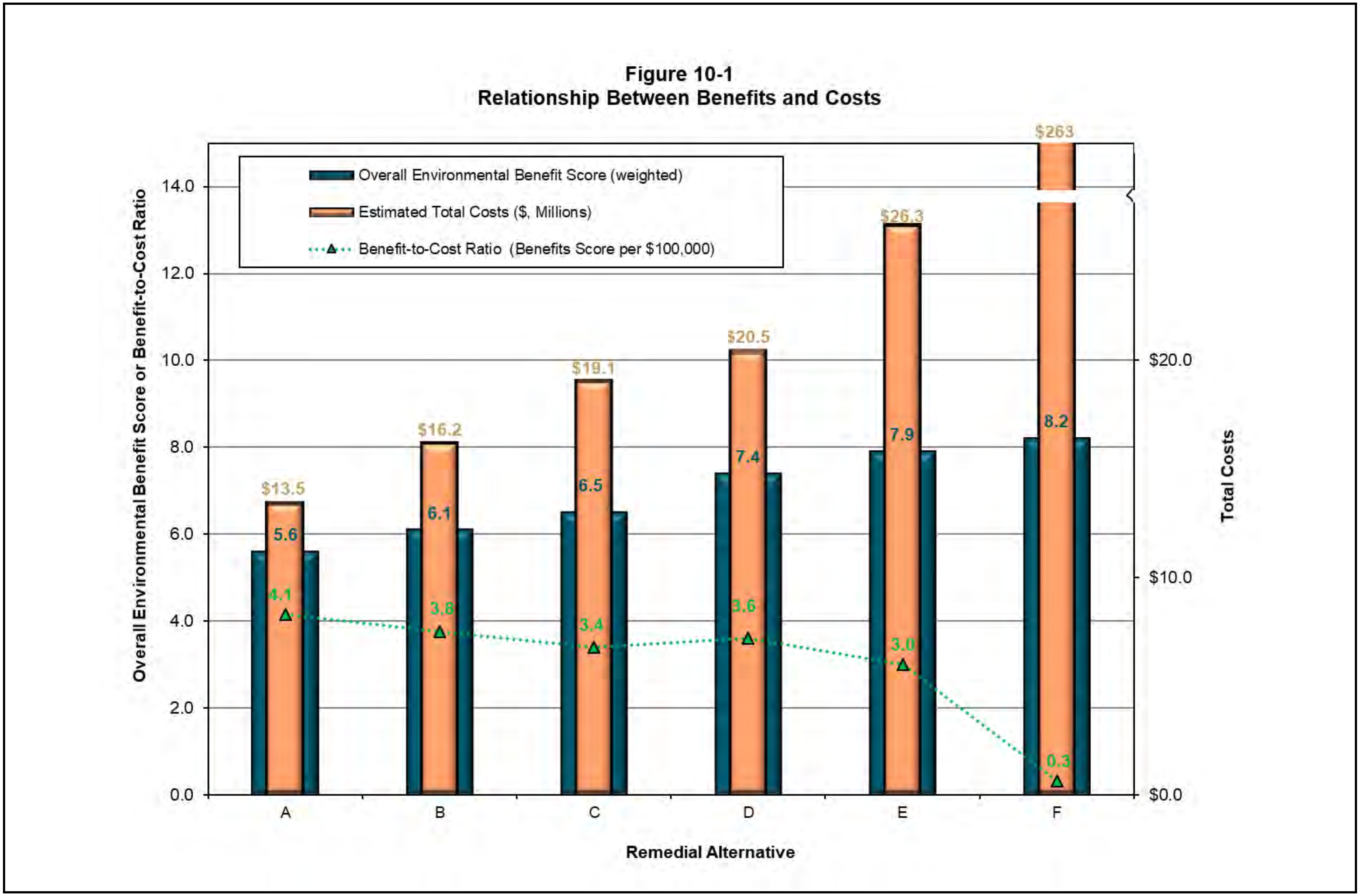

Figure 10-1
Relationship Between Benefits and Costs
RI/FS Report
Central Waterfront Site, Port of Bellingham, WA