# PRELIMINARY INVESTIGATION DATA REPORT

# DUWAMISH SHIPYARD, INC. (SITE #1429)
# SEATTLE, WASHINGTON

**Prepared for**

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# 1 INTRODUCTION

As required by the Washington Department of Ecology (Ecology) in its letters dated July 10, 2006 (Ecology 2006a) and August 3, 2006 (Ecology 2006b), this *Preliminary Investigation Data Report* (Data Report) provides the results of an investigation to determine the nature and extent of soil and groundwater contamination at the Duwamish Shipyard, Inc., (DSI) property (Property). Ecology approved the *Preliminary Investigation Work Plan* (Work Plan; Anchor 2006) on September 25, 2006 and fieldwork commenced on September 27, 2006. All samples were submitted for analytical testing by September 29, 2006. This submittal met Ecology's initial deadline of October 20, 2006.

This report presents the results of the sampling and analysis program as described in the Work Plan. The remainder of the report is organized as follows:

- Section 2 – Property Background
- Section 3 – Field Investigation and Sampling
- Section 4 – Chemical Analyses
- Section 5 – References

# 2 PROPERTY BACKGROUND

## 2.1 Property Description and Use

The Property occupies approximately 5 upland acres on the west bank of the Lower Duwamish Waterway (LDW) and is located at 5658 West Marginal Way SW in Seattle, Washington (Figure 1). The Property is either paved or covered with concrete-floored buildings. The Property is bordered to the north by the Alaska Marine Lines (AML) container facility and to the south by the Glacier Northwest Seattle Cement Facility. DSI also leases a graving dock from AML located directly adjacent to the northern DSI/AML property boundary. West Marginal Way is located immediately west of DSI, and AML owns additional staging property across this roadway. The Property is located in a highly industrialized area and is currently zoned for General Industrial (IG1 U/85) use. The eastern property boundary abuts the LDW. The LDW was placed by EPA on the National Priorities List (NPL or Superfund) in September 2001. The preliminary boundaries of the LDW Superfund Site extend from the Turning Basin downstream to Harbor Island. The Property is located within this initial delineation (approximately between River Miles 1.3 and 1.4). In addition, the Property is listed on Ecology's Contaminated Sediment Sites List, which was first published in 1996.

### *2.1.1 Property Ownership History*

DSI purchased the original property as a tax title purchase from King County in May 1941. It then purchased a submerged parcel from Commercial Waterway District #1 in 1960, which was a mooring area for logs and vessels. In 1964, DSI exchanged the large southern portion of this submerged parcel with the Port of Seattle (Port) for land adjacent to DSI's southern boundary in order to allow the Port to develop a cement terminal. This parcel of land along the southern boundary was owned by the United States government prior to the Port and was leased and operated by Reichhold, Inc., between 1945 and 1961 for the manufacturing of various resins and formaldehyde products. The following year, DSI purchased the parcel to the west of DSI's original tract from General Construction Company. This was part of a larger parcel later sold to AML in 1999. Figure 2 shows the historic property boundaries.

### 2.1.2 DSI Ship Repair Activities

DSI engages in the repair and maintenance of floating vessels and equipment, including tug boats, barges, dredges, fishing vessels, small passenger vessels, and other types of commercial vessels. It provides services to approximately 60 to 65 vessels per year. The hulls of the vessels repaired are generally constructed of steel and, infrequently, aluminum or fiberglass. DSI's ship repair services include machine and electrical work, carpentry, steel fabrication, pipe-fitting, sand blasting, pressure washing, and painting. The haul-out facilities at the Property include two steel drydocks (owned by DSI) and a graving dock (leased from AML).

The two steel drydocks are located along the shoreline, oriented generally in a north-south direction. Both drydocks have been updated to provide containment for pressure wash wastewater. Wastewater flows to one end of the drydock, where it is captured in a collection sump and pumped onshore to a Delta Pollution Control flocculation pretreatment system prior to discharge to the King County sanitary sewer.

The AML graving dock is 410 feet long and 138 feet wide. Repairs in the graving dock take place below the surface level of the river. Vessels are floated into the graving dock, then the tide gates are shut and the water is pumped out to create a dry work environment. Pumps are used to continuously keep the concrete floor of the dock dry due to leaking from the tide gates. DSI has installed a containment system to separate pressure wash water from the water that seeps in through the tide gate.

Originally, DSI only had a marine railway for docking vessels. The majority of the vessels were wooden fish boats. Boats would be pulled up on the railway and could be sidetracked onto timbers on the shore. DSI frequently sidetracked boats in the fall, worked on them over the winter, and launched them in the spring. The work consisted mainly of wooden hull repairs and painting. DSI ended the sidetracking process in the late 1950s.

DSI acquired its first floating drydock in 1967. The floating drydock is a small, steel dock that is still in use by DSI. It acquired a second, larger wood drydock in approximately 1969. After this time, most of the vessel dockings were made on the

drydocks. DSI sold the large wooden drydock in 1990 and replaced it with the current 1,000-ton steel drydock. Most of the vessels that DSI currently repairs are of steel construction. Occasionally, DSI will work on aluminum hulls or fiberglass, but it no longer works on wooden vessels.

### *2.1.3 Environmental Controls*

The stormwater system servicing the Property consists of 10 catch basins that convey water from the paved parking areas and active industrial areas to a 10-inch-diameter trunk line. This line then discharges to a sump located adjacent to the former marine railway. Stormwater enters the sump and is pumped through a centrifugal separator to remove grit prior to discharge via outfall (as shown on Figure 3). Incident rainfall is the only source of stormwater to the Property, as surface drainages are not allowed to enter the Property. The catch basins that receive runoff have been fitted with catch basin inserts and oil sorbent pillows. The system was constructed in the mid-1970s and is currently operated under National Pollutant Discharge Elimination System (NPDES) Permit No. WA-003093-7. This permit also regulates potential stormwater discharges from operations on the AML graving dock and the two movable drydocks used for repair of various vessels.

## 2.2 Independent Remedial Actions

The purpose of this section is to summarize the past remedial actions that have been performed at the Property, including the decommissioning of two underground storage tanks (USTs) and one independent remedial action. The locations of these projects are shown on Figure 3.

### *2.2.1 1986 Leaded Gasoline UST Closure*

In 1986, prior to the enactment of the UST regulations (Chapter 173-360 Washington Administrative Code [WAC]), a 500-gallon UST, holding leaded gasoline, was closed in place. Based on available information, that UST was first installed in the 1960s. This tank is located within close proximity to a 26KV, 100-foot-tall power pole and an adjacent building foundation. At the time of the UST closure, a representative from Seattle City Light visited the Property to assess the threat to the power pole. The representative concurred with DSI's concerns and recommended to the Seattle Fire

Department that the UST be filled in place. At the time of closure, no subsurface samples were collected. Although closed in place, the UST does appear on the most recent UST list update that was issued on August 10, 2006.

### *2.2.2 2000 Diesel and Gasoline UST Excavations*

In 2000, four USTs containing diesel fuel and unleaded gasoline were excavated and removed. Those four USTs were installed between 1968 and 1979. The excavation was performed by Quality Tank Service, Inc., a certified UST decommissioning contractor. The excavation was also supervised by Roy Kuroiwa, a professional engineer registered in the State of Washington. During the initial excavation, 60 cubic yards (cy) of soil were excavated with the USTs, prior to collection of bottom and sidewall soil samples. Seven of the initial confirmation samples contained concentrations of total petroleum hydrocarbons (TPH; diesel [TPH-Dx] and gasoline [TPH-G] range) and benzene above Model Toxics Control Act (MTCA) Method A industrial cleanup levels for soil. An additional 20 cy of soil were excavated from these locations and samples were recollected. Five of the second round of confirmation samples exceeded MTCA industrial cleanup levels. Four of the samples exceeded the TPH-G cleanup level and one exceeded the benzene cleanup level. These data are summarized in Table 1. No groundwater samples were collected as part of the confirmation sampling program.

### *2.2.3 1993 Independent Remedial Action*

During the development of the parcel previously leased to and subsequently purchased by AML (shown as Areas A and B on Figure 2), soil affected by an unknown release of petroleum product was discovered. Historically, this area of the property now owned by AML and formerly owned by DSI was leased by DSI to various entities for storage of used machinery, parking of trucks and trailers, and storage and distribution of lumber. In August 1993, Environmental Services Limited performed a preliminary site assessment consisting of five soil borings, five test pits, and four monitoring wells (the only remaining well, MW4, is shown on Figure 3). The results indicated TPH constituents in soil and groundwater exceeding MTCA industrial cleanup levels. In response, DSI contracted with Hart Crowser, Inc. (HCI), in October 1993 to oversee the excavation of approximately 650 cy of soil.

During excavation of the affected soil, several restrictions (a 26KV buried powerline, a pad-supported power transformer foundation, the graving dock foundation, and the shallow groundwater table) were encountered, preventing completion of excavation of the delineated area. Upon removal, 12 soil confirmation samples were collected from the excavation sidewalls. All of these samples met MTCA industrial cleanup levels for semivolatile organic chemicals (SVOCs) and eight were below MTCA industrial cleanup levels for TPH-G, TPH-Dx, and TPH-O (lubricant oil range). The excavation area was backfilled and capped with asphalt, and an additional monitoring well (shown as MW5 on Figure 3) was installed to assess downgradient groundwater quality.

Groundwater samples were collected from MW4 and MW5 over four events in 1994 (two wet and two dry) and one event in February of 1999. Analysis of the MW4 data, reported by HCI, indicated a 25 percent reduction in TPH concentrations, although they did not meet MTCA groundwater cleanup levels based on Method B for protection of surface water. Groundwater cleanup levels were calculated based on Method B for protection of surface water, and not drinking water standards, because the Property and surrounding properties are industrial and do not serve as a drinking water source. Furthermore, the LDW is not classified for use as a domestic water source. For all five sampling events, MW5 met MTCA groundwater cleanup levels for TPH. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not found to be above detectable concentrations. No additional soil samples were collected after the remedial action was completed.

# 3 FIELD INVESTIGATION AND SAMPLING

Based on our review of the available data and field reconnaissance, 12 upland sampling locations were selected as shown on Figure 4. In accordance with the Work Plan, two soil samples and one groundwater sample were collected at each location (for a total of 24 soil and 12 groundwater samples). The wells installed as part of the 1993 Independent Remedial Action were redeveloped and sampled, producing two additional groundwater samples. Finally, solids from each of the catch basins and the stormwater system sump were collected. Table 2 includes a list of all stations and sample identifiers.

This section describes the techniques implemented for drilling test borings, sampling groundwater, and collecting soil and catch basin solids samples. Tasks related to drilling (reconnaissance groundwater sampling during drilling, borehole logging, and soil classification) are also described. The methods outlined in this section conform to requirements in the Washington State Minimum Standards for Construction and Maintenance of Wells, Chapter 173-160 WAC and are in compliance with Ecology MTCA Regulations, Chapter 173-340 WAC.

## 3.1 Borehole Drilling Method

The borings were advanced by direct push (Geoprobe™) drill rig. Coring commenced at the ground surface with a 5-foot-long, 1.5-inch inside-diameter (ID) core sampler. Continuous samples were collected with the core sampler into disposable, single-use plastic liners. Liners were cut in half lengthwise to remove the soil sample for identification and subsampling.

Between each sample interval, a new liner was placed inside the core sampler. The process was repeated prior to refusal as sufficient water was encountered within two 5-foot sample intervals. Between samples, the core sampler was decontaminated, stored, and handled consistent with the procedures specified in the Work Plan (Anchor 2006).

Each core sample was examined to develop a lithologic boring log. This activity was performed by a geologist licensed in Washington. The samples were described in the field as to their color, structure, texture, mineral composition, moisture, and percent recovery, according to American Society for Testing and Materials (ASTM) Method D-2488, *Standard*

*Practice for Description and Identification of Soils (Visual-Manual Procedures)*. Samples were also examined for evidence of possible contamination, including presence of anthropogenic material, chemical odor, and staining. All observations are noted on the exploratory boring log forms provided in Appendix A.

## 3.2 Borehole Sampling

This section describes the methods used for soil, groundwater, and catch basin solids sample collection and processing. All field work was performed in accordance with the procedures required in the Work Plan (Anchor 2006).

### *3.2.1 Soil Sampling*

At each borehole location, two soil samples were collected. Soil samples were collected in two intervals above the groundwater table. The upper sample consisted of a 3-foot composite collected from 0 to 3 feet below the existing ground surface. The lower sample consisted of a 2-foot composite collected immediately above the observed water table, generally between 3 and 5 feet below the existing ground surface.

A volatile organic compound (VOC) soil sample from each interval was collected using an Encore sampler kit, following EPA Method 5035A, to ensure minimal volatilization of the VOCs. The remaining soil from each interval was then homogenized and placed into the appropriate sample jar either for archive or additional non-VOC analyses.

### *3.2.2 Borehole Groundwater Sampling*

One groundwater sample was obtained from each direct-push borehole using a 10-foot long polyvinyl chloride (PVC) well screen. The well screen was lowered into the open borehole after soil sampling was complete.

Groundwater samples were collected using a peristaltic pump equipped with new, disposable polyethylene intake tubing. Water samples were drawn through the screen and to the ground surface and discharged directly to sample bottles. VOC and NWTPH-Gx samples were collected first by slowly pumping groundwater directly into laboratory-supplied glass vials so that no head space remained in the vials. All

measurements and samples collected were noted on the field sampling data sheets provided in Appendix B.

For all metals samples, both total and dissolved samples were analyzed. Dissolved metals samples were filtered in the field with a new, disposable 0.45-micron in-line filter as the sample was pumped into the appropriate container. Field water quality parameters (pH, specific conductance, and temperature) were measured by collecting groundwater from the tubing into a clean open mouth container and measuring field water quality parameters using a portable, calibrated meter. Any equipment in contact with samples was properly decontaminated between samples.

### 3.3 Borehole Decommissioning

Boreholes were decommissioned in accordance with state regulations (Chapter 173-160 WAC). All temporary well materials were removed from the borehole and the boreholes were abandoned by the hole with bentonite chips and hydrating.

### 3.4 Catch Basin Solids Sampling

Prior to sampling, the thickness of the solid media was determined using a steel rod. If present, samples of solids contained within each catch basin were collected using a stainless steel spoon. The samples were homogenized and placed into the appropriate composite sample jar. Only the sample collected from the basin adjacent to the outfall sump was submitted for analysis. All remaining samples were sent to the analytical laboratory for archiving and preservation at 4° Celsius. As stated in the Work Plan (Anchor 2006), no catch basin water was collected. A summary of the catch basin sampling notes is provided in Appendix B.

### 3.5 Monitoring Well Groundwater Sampling

After development, one groundwater sample was collected from each of the two monitoring wells installed in 1993 (Hart Crowser 1994). Specific procedures are described in the following sections.

### 3.5.1 Well Development

The monitoring wells were developed with a combination of surging, bailing, and pumping. Development continued until a minimum of 10 casing volumes of water was removed from the well, the groundwater became clear, and field parameters were stable. After development, groundwater from monitoring well MW-4 was clear and colorless; groundwater from MW-5 was clear and amber in color. Copies of the well development field forms are in Appendix B.

### 3.5.2 Water Level Monitoring

Depth-to-water (groundwater elevation) was measured with an electronic water-level indicator. Levels were measured to the nearest 0.01 foot from a surveyed mark at the top of the PVC casing. Measurements were recorded immediately on FSDS with the date, time (on a 24-hour clock), reference point, and signature of the person who made the measurements. The water-level indicator was decontaminated in between each well sampling event.

### 3.5.3 Groundwater Sample Collection

Groundwater sampling was performed in accordance with the methods required in the Work Plan. Purging and sampling were conducted using a peristaltic pump equipped with new, disposable polyethylene intake tubing. Prior to sampling, a minimum of three well casing volumes was purged. After each well casing volume was removed, field water-quality parameters (pH, specific conductance, and temperature) were recorded using a portable, calibrated meter equipped with a flow-through cell. Purging continued until field parameters stabilized to within 10 percent of the previous reading before a sample was collected. Water samples were drawn through the well screen and to the ground surface and discharged directly to sample bottles. VOC and NWTPH-Gx samples were collected first by slowly pumping groundwater directly into laboratory-supplied glass vials so that no head space remained in the vials. All measurements and samples collected were noted on the field sampling data sheets provided in Appendix B.

For all metals samples, both total and dissolved samples were analyzed. Dissolved metals samples were filtered in the field with a new, disposable 0.45-micron in-line filter

as the sample was pumped into the appropriate container. Any equipment in contact with samples was properly decontaminated between samples.

### 3.6 Surveying

After the field component of the investigation was complete, APS Survey and Mapping, L.L.C. (Issaquah, Washington) performed a survey of the 12 borehole locations. Survey information for the 1993 Independent Remedial Action monitoring wells was previously collected by Jim Hart and Associates (Kirkland, Washington) in 1993. All horizontal coordinates are referenced to Washington State Plane North, NAD-83. All vertical coordinates are referenced to mean lower low water (MLLW).

### 3.7 Deviations from the Work Plan

During groundwater sampling from the temporary boreholes, PVC well screen, screened over the entire 10-foot interval, was used instead of a wire-wrapped stainless steel well point as noted in the Work Plan. This deviation is not likely to affect sample results. No other deviations from the Work Plan occurred.

# 4 CHEMICAL ANALYSES

Samples were analyzed for appropriate constituents for groundwater and soil as set forth in MTCA regulations as well as the metals analyte list contained in Ecology's Sediment Management Standards (SMS) (Chapter 173-204 WAC; Ecology 1995). Chemical analysis was performed according to the requirements as outlined in the Work Plan (Anchor 2006), including sample analysis as well as quality assurance/quality control (QA/QC) measures, including calibration, duplicates, blanks, and spikes. Analysis also included a full data review, validation, and verification (presented in Appendix D), and the production of electronic data deliverables.

## 4.1 Comparison of Results to MTCA Cleanup Levels

Tables 3 and 4 summarize the chemical analytical results for all soil and groundwater samples, respectively, collected during the field investigation. Copies of the chemistry laboratory data package are provided as a CD-ROM attachment to this report. These data were compared to the MTCA Method A industrial cleanup levels to provide an initial assessment of the potential for contaminated soil and groundwater on the Property. Exceedances of the cleanup levels are noted on the tables. Results were as follows:

- TPH-Gx was detected in five of the 24 soil samples and was non-detect in all groundwater samples, including the monitoring wells. No free product was observed during sampling. These concentrations represent a decrease from those collected during the 2000 UST excavation.
- TPH-Dx was detected in both soil sample intervals at location DSI-06 and was non-detect in all groundwater samples, including the monitoring wells. No free product was observed during sampling.
- Benzene was detected in two surficial soil samples, but was only detected in groundwater at one location (DSI-07).
- These TPH-Gx, TPH-Dx, and benzene concentrations represent a decrease from those collected during the 2000 UST excavation and the last monitoring well sampling event conducted in 1999.
- Arsenic was detected in two soil samples and in nine of the 12 borehole groundwater samples (measured on a total basis).
- In addition to arsenic, cadmium and lead were detected in the subsurface soil sample at DSI-09; however, only lead (measured on a total basis) was detected in borehole groundwater at that location.

- Pesticides were not detected in any of the soil or groundwater samples.
- Polychlorinated biphenyls (PCBs; Aroclors) were not detected in any of the soil or groundwater samples.
- Vinyl chloride was detected in three of the 12 borehole groundwater samples.
- Benzo(a)pyrene was detected in soil and groundwater at sample location (DSI-12).

## 4.2 Comparison of Results to SMS and Marine Surface Water Criteria

Because the Property is located adjacent to a surface water body (i.e., the Duwamish Waterway), subsets of Tables 3 and 4 were developed for comparison to the SMS and Washington State Marine Surface Water Standards, Chapter 173-201A WAC (Ecology 2006c), and presented in Tables 5 and 6. The catch basin solids data are also presented in Table 5. Please note that the data in this table have been organic carbon normalized, where appropriate, to allow a direct comparison with the SMS Sediment Quality Standards (SQS) and Cleanup Screening Level (CSL) values. Results were as follows:

- The catch basin solids sample showed detects of some metals (copper, mercury, and zinc), one polyaromatic hydrocarbon (PAH; acenaphthene), and two phthalates [butylbenzylphthalate and bis(2-ethylhexyl)phthalate]. No water sample was collected at this location.
- Cadmium, copper, lead, and zinc were detected in the DSI-09 subsurface sample above the SMS SQS and CSL.
- Mercury was detected in the DSI-11 surface sample above the SMS SQS and CSL.
- In the surface and subsurface DSI-12 samples, various PAHs were detected above the SMS SQS and CSL.
- No surface water criteria exceedances were noted for any of the nearshore borehole groundwater samples.

# 5 REFERENCES

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# TABLES

**Table 1**
**Summary of Confirmation Sampling Exceedances**

| Sample ID | Constituent | Concentration (mg/kg) | MTCA Method A Industrial Cleanup Level (mg/kg) |
|---|---|---|---|
| B3 | TPH-G | 170 | 100 |
| B4(1) | TPH-G | 800 | 100 |
| B1(2) | Benzene | 0.7 | 0.5 |
| SS-1 | TPH-G | 140 | 100 |
| SS-3(2) | TPH-G | 300 | 100 |

mg/kg: milligrams per kilogram

**Table 2**
**Summary of Sample Coordinates and Intervals**

| Station ID | Soil/Catch Basin Sample ID | Sample Interval (feet) | | Groundwater Sample ID | Screened Sample Interval (feet) | | Northing (feet) | Easting (feet) | Ground Surface Elevation |
|---|---|---|---|---|---|---|---|---|---|
| DSI01 | DSI01-SO-A | 0 | 3 | DSI01-GW | 0 | 10 | 204362.38 | 1267483.65 | 15.85 |
| | DSI01-SO-B | 4 | 6 | - | | | 204362.38 | 1267483.65 | 15.85 |
| DSI02 | DSI02-SO-A | 0 | 3 | DSI02-GW | - | - | 204484.72 | 1267482.28 | 16.55 |
| | DSI02-SO-B | 3 | 5 | - | | | 204484.72 | 1267482.28 | 16.55 |
| DSI03 | DSI03-SO-A | 0 | 3 | DSI03-GW | 0 | 10 | 204614.54 | 1267538.20 | 16.56 |
| | DSI03-SO-B | 5 | 6.5 | - | | | 204614.54 | 1267538.20 | 16.56 |
| DSI04 | DSI04-SO-A | 0 | 3 | DSI04-GW | 0 | 10 | 204577.53 | 1267677.30 | 14.95 |
| | DSI04-SO-B | 3 | 5 | - | | | 204577.53 | 1267677.30 | 14.95 |
| DSI05 | DSI05-SO-A | 0 | 3 | DSI05-GW | 0 | 10 | 204414.79 | 1267664.49 | 15.38 |
| | DSI05-SO-B | 3 | 5 | - | | | 204414.79 | 1267664.49 | 15.38 |
| DSI06 | DSI06-SO-A | 0 | 3 | DSI06-GW | 0 | 10 | 204403.48 | 1267832.57 | 15.38 |
| | DSI06-SO-B | 4 | 6 | - | | | 204403.48 | 1267832.57 | 15.38 |
| DSI07 | DSI07-SO-A | 0 | 3 | DSI07-GW | 0 | 10 | 204440.17 | 1267843.29 | 15.30 |
| | DSI07-SO-B | 3 | 5 | - | | | 204440.17 | 1267843.29 | 15.30 |
| DSI08 | DSI08-SO-A | 0 | 3 | DSI08-GW | 0 | 10 | 204599.08 | 1267815.08 | 15.08 |
| | DSI08-SO-B | 3 | 5 | - | | | 204599.08 | 1267815.08 | 15.08 |
| DSI09 | DSI09-SO-A | 0 | 3 | DSI09-GW | 0 | 10 | 204599.10 | 1267972.09 | 15.10 |
| | DSI09-SO-B | 3 | 5 | - | | | 204599.10 | 1267972.09 | 15.10 |
| DSI10 | DSI10-SO-A | 0 | 3 | DSI10-GW | 0 | 10 | 204456.02 | 1267928.63 | 14.96 |
| | DSI10-SO-B | 3 | 5 | - | | | 204456.02 | 1267928.63 | 14.96 |
| DSI11 | DSI11-SO-A | 0 | 3 | DSI11-GW | 0 | 10 | 204358.81 | 1267970.43 | 14.74 |
| | DSI11-SO-B | 3 | 5 | - | | | 204358.81 | 1267970.43 | 14.74 |
| DSI12 | DSI12-SO-A | 0 | 3 | DSI12-GW | 0 | 10 | 204269.04 | 1267970.42 | 14.38 |
| | DSI12-SO-B | 3 | 5 | - | | | 204269.04 | 1267970.42 | 14.38 |
| DSI13 | DSI13-CB-YYMMDD | - | - | - | - | - | 204534.18 | 1267506.84 | 15.60 |
| DSI14 | DSI14-CB-YYMMDD | - | - | - | - | - | 204487.92 | 1267507.37 | 15.31 |
| DSI15 | DSI15-CB-YYMMDD | - | - | - | - | - | 204566.32 | 1267577.87 | 14.60 |
| DSI16 | DSI16-CB-YYMMDD | - | - | - | - | - | 204603.21 | 1267662.99 | 14.75 |
| DSI17 | DSI17-CB-YYMMDD | - | - | - | - | - | 204482.78 | 1267687.03 | 14.66 |
| DSI18 | DSI18-CB-YYMMDD | - | - | - | - | - | 204572.22 | 1267818.66 | 14.97 |
| DSI19 | DSI19-CB-YYMMDD | - | - | - | - | - | 204512.92 | 1267823.23 | 14.49 |
| DSI20 | DSI20-CB-YYMMDD | - | - | - | - | - | 204435.85 | 1267776.70 | 14.43 |
| DSI21 | DSI21-CB-YYMMDD | - | - | - | - | - | 204471.91 | 1267822.86 | 15.23 |
| DSI22 | DSI22-CB-YYMMDD | 0 | 1.5 | - | - | - | 204481.19 | 1268018.19 | - |
| DSI23 | DSI23-CB-YYMMDD | - | - | - | - | - | 204460.68 | 1267966.97 | 14.59 |
| MW-4 | - | - | - | MW4-GW-YYMMDD | 5 | 17 | 204675.26 | 1267474.81 | 20.09 |
| MW-5 | - | - | - | MW5-GW-YYMMDD | 11 | 16 | 204585.26 | 1267494.81 | 16.49 |

Northing and Easting coordinates are referenced to the Washington State Coordinate System, North Zone in U.S. Survey feet

Ground surface elevation coordinates are referenced to mean lower low water (MLLW) in feet.

**Table 3**
**Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | | DSI-01 | DSI-01 | DSI-02 | DSI-02 | DSI-03 | DSI-03 | DSI-04 | DSI-04 | DSI-05 | DSI-05 | DSI-06 | DSI-06 | DSI-07 | DSI-07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | DSI01-SO-A | DSI01-SO-B | DSI02-SO-A | DSI02-SO-B | DSI03-SO-A | DSI03-SO-B | DSI04-SO-A | DSI04-SO-B | DSI05-SO-A | DSI05-SO-B | DSI06-SO-A | DSI06-SO-B | DSI07-SO-A | DSI07-SO-B |
| Sample Date | | | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/28/2006 | 9/28/2006 |
| Depth Interval | | | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft | 0-3 ft | 5-6.5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft |
| Sample Matrix | | MTCA A | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| Sample Type | | Industrial | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| **Conventionals (%)** | | | | | | | | | | | | | | | | |
| | Total solids | -- | **88.40** | **80.20** | **96.10** | **78.60** | **96.10** | **89.40** | **74.30** | **87.60** | **76.70** | **88.90** | **78.40** | **90.20** | **74.10** | **95.50** |
| | Total Organic Carbon | -- | **1.11** | **0.384** | **0.305** | **0.698** | **0.325** | **0.781** | **0.579** | **0.084** | **1.07** | **0.226** | **1.37** | **0.308** | **1.05** | **0.097** |
| **TPH (mg/kg)** | | | | | | | | | | | | | | | | |
| | TPH - Gasoline Range | 30/100[(1)] | 5.3 U | 6.3 U | 4.8 U | **22** | **92** | **110** | **20** | 6.4 U | **16** | **8.4** | **120** | **13** | **74** | **36** |
| | TPH - Diesel Range | 2000 | **65** | **12** | **15** | **66** | **61** | **380** | **40** | 5.5 U | **46** | 5.7 U | **2700** | **2200** | **16** | **20** |
| | TPH - Motor Oil Range | 2000 | **140** | **33** | **170** | **130** | **110** | **310** | **100** | 11 U | **160** | 11 U | **260** | **190** | **29** | **18** |
| **Metals (mg/kg)** | | | | | | | | | | | | | | | | |
| | Arsenic | 20 | **48.1 J** | **3.5** | **18.9** | **5.8** | **7.1** | **10.4** | **6.4** | **1.1** | **7.1** | **1.3** | **7.0** | **2.2** | **4.3 J** | **1.6** |
| | Cadmium | 2 | **0.4** | **0.2** | 2 U | **0.3** | 1 U | **0.5** | **0.5** | 0.2 U | **0.6** | 0.2 U | **0.3** | 0.2 U | 0.3 U | 0.2 U |
| | Chromium | 2000 | **20.4** | **15.9** | **5** | **21.7** | **61** | **34** | **27.2** | **10.4** | **21.1** | **11.0** | **20.0** | **15.2** | **19.6** | **25.9** |
| | Chromium VI | 19 | 0.125 UJ | 0.135 UJ | 0.116 UJ | 0.140 UJ | 0.111 UJ | 0.126 UJ | 0.151 UJ | 0.127 UJ | 0.142 UJ | 0.127 UJ | 0.143 UJ | 0.120 UJ | 0.150 UJ | 0.115 UJ |
| | Copper | -- | **103 J** | **20.4** | **55** | **33.6** | **539** | **238** | **45.9** | **9.0** | **122** | **11.9** | **37.1** | **18.2** | **52.1 J** | **10.3** |
| | Lead | 1000 | **36 J** | **6** | 20 U | **32** | **460** | **94** | **14** | 2 U | **78** | **3** | **14** | **6** | **11 J** | **3** |
| | Mercury | 2 | **0.09** | 0.05 U | **0.05** | **0.20** | 0.05 U | 0.05 U | **0.15** | 0.04 U | **0.27** | 0.04 U | **0.14** | 0.05 U | **0.72 J** | 0.04 U |
| | Silver | -- | 0.3 U | 0.3 U | 3 U | 0.4 U | 2 U | 0.8 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U |
| | Zinc | -- | **192** | **36.8** | **57** | **57.7** | **129** | **160** | **85.4** | **21.9** | **127** | **26.4** | **57.5** | **33.6** | **53.2** | **29.1** |
| **Pesticides (µg/kg)** | | | | | | | | | | | | | | | | |
| | 4,4'-DDD | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | **28** | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | 4,4'-DDE | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | 4,4'-DDT | 4000 | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Total DDT (U=1/2) | -- | 4.95 U | 4.8 U | 4.8 U | 4.95 U | 4.8 U | 4.8 U | 4.8 U | 4.65 U | **31.1** | 4.8 U | 4.8 U | 4.95 U | 4.8 U | 4.8 U |
| | Aldrin | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | alpha-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | beta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | delta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | gamma-BHC (Lindane) | 10 | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | alpha-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | gamma-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | Dieldrin | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 8.5 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Endosulfan I | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | Endosulfan II | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 9.9 U | 7.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Endosulfan Sulfate | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 15 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Endrin | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Endrin aldehyde | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Endrin ketone | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| | Heptachlor | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | Heptachlor Epoxide | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | Methoxychlor | -- | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 17 U | 16 U | 16 U |
| | Toxaphene | -- | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 170 U | 160 U | 160 U |
| **PCBs (µg/kg)** | | | | | | | | | | | | | | | | |
| | Aroclor 1016 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| | Aroclor 1221 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| | Aroclor 1232 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| | Aroclor 1242 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| | Aroclor 1248 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| | Aroclor 1254 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 39 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| | Aroclor 1260 | -- | **43 J** | **10 J** | 9.7 UJ | 9.7 UJ | **300 J** | **94 J** | 9.6 UJ | 9.5 UJ | **46 J** | 9.6 UJ | 9.7 UJ | 9.7 UJ | 9.7 U | 9.6 U |
| | Total PCBs (U=1/2) | 10000 | **72.4** | **39.4** | 34 U | 34 U | **444** | **122** | 33.6 U | 33.2 U | **90** | 33.6 U | 34 U | 34 U | 34 U | 33.6 U |
| **SVOCs (µg/kg)** | | | | | | | | | | | | | | | | |

**Table 3**
**Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | | DSI-01 | DSI-01 | DSI-02 | DSI-02 | DSI-03 | DSI-03 | DSI-04 | DSI-04 | DSI-05 | DSI-05 | DSI-06 | DSI-06 | DSI-07 | DSI-07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | DSI01-SO-A | DSI01-SO-B | DSI02-SO-A | DSI02-SO-B | DSI03-SO-A | DSI03-SO-B | DSI04-SO-A | DSI04-SO-B | DSI05-SO-A | DSI05-SO-B | DSI06-SO-A | DSI06-SO-B | DSI07-SO-A | DSI07-SO-B |
| Sample Date | | | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/28/2006 | 9/28/2006 |
| Depth Interval | | | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft | 0-3 ft | 5-6.5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft |
| Sample Matrix | | MTCA A | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| Sample Type | | Industrial | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| | 1,2,3-Trichlorobenzene | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 UJ | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| | 1,2,4-Trichlorobenzene | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 UJ | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| | 1,2,4-Trimethylbenzene | -- | 0.9 U | 1.1 U | **3.8** | **100** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | **120** | 1.1 U | **3200** | **51** |
| | 1,2-Dichlorobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,3,5-Trimethylbenzene | -- | 0.9 U | 1.1 U | **1.2** | **39** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **80** | **15** |
| | 1,3-Dichlorobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,4-Dichlorobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 2,4-Dimethylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 2-Methylnaphthalene | -- | **19** | 5.0 U | **4.7** | **98** | 4.7 U | **40** | **16** | 5.0 U | **26** | 4.7 U | **33** | 27 U | **22** | **66** |
| | 2-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 4-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Acenaphthene | -- | **5.8** | 5.0 U | 4.7 U | **120** | **5.6** | 4.7 U | 5.0 U | 5.0 U | 4.9 U | 4.7 U | 30 U | 27 U | 5.0 U | **9.9** |
| | Acenaphthylene | -- | **9.1** | 5.0 U | 4.7 U | 4.8 U | 4.7 U | 4.7 U | 5.0 U | 5.0 U | **6.4** | 4.7 U | 30 U | **48** | 5.0 U | 5.0 U |
| | Anthracene | -- | **44** | **8.4** | 4.7 U | **100** | **5.1** | **8.5** | **5.9** | 5.0 U | **12** | 4.7 U | 30 U | 27 U | **5.5** | **7.9** |
| | Benzo(a)anthracene | -- | **64** | **9.9** | 4.7 U | **110** | **9.8** | **11** | **14** | 5.0 U | **28** | 4.7 U | **30** | **43** | **14** | **6.4** |
| | Benzo(a)pyrene | 2000 | **56** | **9.4** | **5.7** | **110** | **10** | **12** | **8.4** | 5.0 U | **29** | 4.7 U | **39** | **99** | **11** | **5.9** |
| | Benzo(b)fluoranthene | -- | **120** | **15** | **11** | **72** | **12** | **21** | **16** | 5.0 U | **48** | 4.7 U | **57** | **91** | **16** | **5.9** |
| | Benzo(g,h,i)perylene | -- | **65** | **9.4** | **5.7** | **38** | **7.0** | **5.2** | 5.0 U | 5.0 U | **13** | 4.7 U | 30 U | **54** | **9.5** | 5.0 U |
| | Benzo(k)fluoranthene | -- | **74** | **17** | **9.4** | **90 J** | **14** | **15** | **13** | 5.0 U | **28** | 4.7 U | **54** | **94** | **14** | 5.0 U |
| | Benzoic acid | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Benzyl alcohol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | bis(2-Ethylhexyl)phthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Butylbenzylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Chrysene | -- | **130** | **22** | **10** | **140 J** | **17** | **31** | **25** | 5.0 U | **50** | 4.7 U | **78** | **120** | **22** | **6.9** |
| | Dibenzo(a,h)anthracene | -- | **18** | 5.0 U | 4.7 U | **12** | 4.7 U | 4.7 U | 5.0 U | 5.0 U | 4.9 U | 4.7 U | 30 U | 27 U | 5.0 U | 5.0 U |
| | Dibenzofuran | -- | **12** | 5.0 U | 4.7 U | **56** | 4.7 U | **9.4** | **5.4** | 5.0 U | **16** | 4.7 U | 30 U | 27 U | 5.0 U | 5.0 U |
| | Diethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Dimethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Di-n-butylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Di-n-octylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Fluoranthene | -- | **170** | **36** | **11** | **270** | **26** | **38** | **40** | 5.0 U | **96** | 4.7 U | **120** | **120** | **45** | **15** |
| | Fluorene | -- | **11** | 5.0 U | 4.7 U | **120** | **5.1** | **19** | 5.0 U | 5.0 U | **6.9** | 4.7 U | 30 U | **27** | 5.0 U | **14** |
| | Hexachlorobenzene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | Hexachlorobutadiene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| | Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Indeno(1,2,3-cd)pyrene | -- | **54** | **8.9** | 4.7 U | **37** | **5.6** | 4.7 U | **5.4** | 5.0 U | **13** | 4.7 U | 30 U | **48** | **7.0** | 5.0 U |
| | Naphthalene | 5000 | **24** | **5.0** | **5.2** | **180** | **6.5** | **12** | **13** | 5.0 U | **53** | 4.7 U | **57** | **27** | **69** | **47** |
| | n-Nitrosodiphenylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Phenanthrene | -- | **68** | **14** | **7.6** | **410 J** | **27** | **100** | **24** | 5.0 U | **91** | 4.7 U | **90** | **80** | **25** | **13** |
| | Phenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Pyrene | -- | **140** | **29** | **10** | **280** | **21** | **37** | **33** | 5.0 U | **72** | 4.7 U | **160** | **320** | **34** | **21** |
| | Total PAHs (U=1/2) | -- | **1053** | **194** | **92** | **2091** | **176** | **319** | **210** | 40 U | **551** | 37.6 U | **790** | **1212** | **282** | **165** |
| **Volatiles (µg/kg)** | | | | | | | | | | | | | | | | |
| | 1,1,1,2-Tetrachloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,1,1-Trichloroethane | 2000 | **13** | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,1,2,2-Tetrachloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,1,2-Trichloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,1-Dichloroethane | -- | **10** | **7.9** | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,1-Dichloroethene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |

**Table 3**
**Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | | DSI-01 | DSI-01 | DSI-02 | DSI-02 | DSI-03 | DSI-03 | DSI-04 | DSI-04 | DSI-05 | DSI-05 | DSI-06 | DSI-06 | DSI-07 | DSI-07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | DSI01-SO-A | DSI01-SO-B | DSI02-SO-A | DSI02-SO-B | DSI03-SO-A | DSI03-SO-B | DSI04-SO-A | DSI04-SO-B | DSI05-SO-A | DSI05-SO-B | DSI06-SO-A | DSI06-SO-B | DSI07-SO-A | DSI07-SO-B |
| Sample Date | | | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/28/2006 | 9/28/2006 |
| Depth Interval | | | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft | 0-3 ft | 5-6.5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft |
| Sample Matrix | | | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| Sample Type | | MTCA A Industrial | N | N | N | N | N | N | N | N | N | N | N | N | N | N |
| | 1,1-Dichloropropene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,2,3-Trichloropropane | -- | 1.8 U | 2.2 U | 1.9 U | 2.1 U | 2.1 U | 1.8 U | 2.6 U | 2.2 U | 2.5 UJ | 2.6 U | 190 U | 2.2 U | 2.4 U | 2.5 U |
| | 1,2-Dibromo-3-chloropropane | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 UJ | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| | 1,2-Dibromoethane | 5 | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,2-Dichloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,2-Dichloropropane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 1,3-Dichloropropane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 2,2-Dichloropropane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 2-Butanone | -- | **11** | **12** | **5.2** | **18** | **11** | **5.2** | **9.2** | 5.6 U | 6.4 U | **10** | **780** | **13** | **27** | **16** |
| | 2-Chlorotoluene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 2-Hexanone | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 U | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| | 4-Chlorotoluene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | 4-Isopropyltoluene | -- | 0.9 U | 1.1 U | 1.0 U | **6.0** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | **1.3** |
| | 4-Methyl-2-pentanone | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 U | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| | Acetone | -- | **77** | **70** | **83** | **160** | **85** | 41 U | **66** | 29 U | 51 U | **90** | **6500** | **92** | 6.1 U | **110** |
| | Benzene | 30 | 0.9 U | **1.2** | 1.0 U | **2.0** | 1.0 U | 0.9 U | **1.6** | 1.1 U | **1.8** | 1.3 U | **260** | **1.7** | **50** | **6.0** |
| | Bromobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Bromochloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Bromodichloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Bromoform | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Bromomethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Carbon disulfide | -- | **1.8** | **11** | **1.2** | **4.9** | **1.4** | **1.2** | **8.6** | 1.1 U | 1.3 U | **17** | 93 U | **30** | **3.3** | **10** |
| | Carbon tetrachloride | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Chloroethane | -- | **1.5** | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Chloroform | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Chloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | cis-1,2-Dichloroethene | -- | 0.9 U | **2.2** | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | cis-1,3-Dichloropropene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Dibromochloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Dibromomethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Dichlorodifluoromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Dichloromethane | 20 | 2.1 U | 2.6 U | 1.9 U | 2.1 U | 2.1 U | 1.8 U | 2.6 U | 2.2 U | 2.5 U | 2.6 U | 190 U | 2.5 U | **2.6** | 2.5 U |
| | Ethylbenzene | 6000 | 0.9 U | 1.1 U | 1.0 U | **6.0** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | **60** | **7.4** |
| | Isopropylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | **19** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **34** | **5.0** |
| | n-Butylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | **4.4** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **22** | **20** |
| | n-Propylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | **9.9** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **120** | **28** |
| | sec-Butylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | **5.4** |
| | Styrene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | tert-Butylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | tert-Butylmethylether | 100 | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Tetrachloroethene | 50 | **3.7** | **1.3** | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Toluene | 7000 | 0.9 U | 1.1 U | **1.8** | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | **5.5** | 1.2 U |
| | trans-1,2-Dichloroethene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | trans-1,3-Dichloropropene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Trichloroethene | 30 | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Trichlorofluoromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | Vinyl chloride | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| | m,p-Xylenes | -- | 0.9 U | 1.1 U | **3.6** | **47** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | **290** | **1.5** | **160** | **13** |
| | o-Xylene | -- | 0.9 U | 1.1 U | **1.8** | **26** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | **100** | 1.1 U | **5.1** | 1.2 U |

**Table 3**
**Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | | DSI-08 | DSI-08 | DSI-09 | DSI-09 | DSI-10 | DSI-10 | DSI-11 | DSI-11 | DSI-12 | DSI-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | DSI08-SO-A | DSI08-SO-B | DSI09-SO-A | DSI09-SO-B | DSI10-SO-A | DSI10-SO-B | DSI11-SO-A | DSI11-SO-B | DSI12-SO-A | DSI12-SO-B |
| Sample Date | | | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 |
| Depth Interval | | | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft |
| Sample Matrix | | MTCA A | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| Sample Type | | Industrial | N | N | N | N | N | N | N | N | N | N |
| **Conventionals (%)** | | | | | | | | | | | | |
| | Total solids | -- | **70.40** | **92.90** | **92.60** | **89.60** | **69.70** | **95.30** | **76.10** | **93.70** | **87.70** | **86.70** |
| | Total Organic Carbon | -- | **0.661** | **0.133** | **0.939** | **2.35** | **1.30** | **0.147** | **1.34** | **0.099** | **1.25** | **1.12** |
| **TPH (mg/kg)** | | | | | | | | | | | | |
| | TPH - Gasoline Range | 30/100[(1)] | 8.8 U | 6.7 U | **14** | **200** | 8.3 U | 6.0 U | **8.0** | 5.9 U | 6.6 U | **27** |
| | TPH - Diesel Range | 2000 | 6.7 U | 5.4 U | **42** | **56** | **16** | 5.2 U | **120** | 5.5 U | **88** | **170** |
| | TPH - Motor Oil Range | 2000 | **21** | 11 U | **87** | **110** | **39** | 10 U | **180** | 11 U | **130** | **240** |
| **Metals (mg/kg)** | | | | | | | | | | | | |
| | Arsenic | 20 | **4.8** | **0.7** | **3.7** | **20.2** | **6.2** | **1.9** | **4.4** | **1.4** | **17.1** | **3.3** |
| | Cadmium | 2 | 0.3 U | 0.2 U | **0.3** | **8.5** | 0.3 U | 0.2 U | **0.3** | 0.2 U | **0.2** | 0.2 U |
| | Chromium | 2000 | **17.7** | **9.7** | **17.4** | **36** | **20.2** | **14.2** | **17.1** | **11.4** | **20.1** | **15.5** |
| | Chromium VI | 19 | 0.160 UJ | 0.116 UJ | 0.117 UJ | 0.124 UJ | 0.157 UJ | 0.117 UJ | **2.05 J** | 0.120 UJ | 0.125 UJ | 0.123 UJ |
| | Copper | -- | **31.0** | **8.5** | **65.9** | **3310** | **29.0** | **8.8** | **49.0** | **8.4** | **34.2** | **18.1** |
| | Lead | 1000 | **11** | 2 U | **118** | **4940** | **8** | **11** | **92** | 2 U | **20** | **6** |
| | Mercury | 2 | **0.10** | 0.05 U | **0.31** | **0.18** | **0.11** | 0.04 U | **0.76** | 0.04 U | **0.08** | 0.05 U |
| | Silver | -- | 0.4 U | 0.3 U | 0.3 U | **1.2** | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.3 U | 0.3 U |
| | Zinc | -- | **52.3** | **30.5** | **115** | **5840** | **43.7** | **25.2** | **78.3** | **23.0** | **77.4** | **36.8** |
| **Pesticides (µg/kg)** | | | | | | | | | | | | |
| | 4,4'-DDD | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| | 4,4'-DDE | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| | 4,4'-DDT | 4000 | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 12 U |
| | Total DDT (U=1/2) | -- | 4.8 U | 4.8 U | 4.8 U | 4.95 U | 4.95 U | 4.95 U | 4.8 U | 4.95 U | 4.95 U | 9.3 U |
| | Aldrin | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | alpha-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | beta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 4.0 U | 3.1 U |
| | delta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | gamma-BHC (Lindane) | 10 | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | alpha-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | gamma-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | Dieldrin | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| | Endosulfan I | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | Endosulfan II | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| | Endosulfan Sulfate | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 19 U | 21 U |
| | Endrin | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 14 U | 17 U |
| | Endrin aldehyde | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| | Endrin ketone | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 15 U | 16 U |
| | Heptachlor | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | Heptachlor Epoxide | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 3.8 U |
| | Methoxychlor | -- | 16 U | 16 U | 16 U | 16 U | 16 U | 17 U | 16 U | 16 UJ | 16 U | 16 U |
| | Toxaphene | -- | 160 U | 160 U | 160 U | 160 U | 160 U | 170 U | 160 U | 160 UJ | 160 U | 160 U |
| **PCBs (µg/kg)** | | | | | | | | | | | | |
| | Aroclor 1016 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| | Aroclor 1221 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| | Aroclor 1232 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| | Aroclor 1242 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| | Aroclor 1248 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| | Aroclor 1254 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| | Aroclor 1260 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | **35** | 9.9 U | 29 U | 29 U |
| | Total PCBs (U=1/2) | 10000 | 34.3 U | 33.2 U | 33.6 U | 34.3 U | 34.3 U | 32.9 U | **64.4** | 34.6 U | 102 U | 102 U |
| **SVOCs (µg/kg)** | | | | | | | | | | | | |

**Table 3**
**Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| | Location ID | | DSI-08 | DSI-08 | DSI-09 | DSI-09 | DSI-10 | DSI-10 | DSI-11 | DSI-11 | DSI-12 | DSI-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample ID | | DSI08-SO-A | DSI08-SO-B | DSI09-SO-A | DSI09-SO-B | DSI10-SO-A | DSI10-SO-B | DSI11-SO-A | DSI11-SO-B | DSI12-SO-A | DSI12-SO-B |
| | Sample Date | | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 |
| | Depth Interval | | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft |
| | Sample Matrix | | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| | Sample Type | MTCA A Industrial | N | N | N | N | N | N | N | N | N | N |
| | 1,2,3-Trichlorobenzene | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| | 1,2,4-Trichlorobenzene | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| | 1,2,4-Trimethylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | **1.4 J-** | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,2-Dichlorobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,3,5-Trimethylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,3-Dichlorobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,4-Dichlorobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 2,4-Dimethylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 2-Methylnaphthalene | -- | **5.0** | 4.9 U | **47** | **34** | **7.8** | 5.0 U | **19** | 4.8 U | **230** | **300** |
| | 2-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 4-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Acenaphthene | -- | 5.0 U | 4.9 U | **82** | **30** | 4.8 U | 5.0 U | **6.9** | 4.8 U | 37 U | **45** |
| | Acenaphthylene | -- | 5.0 U | 4.9 U | **14** | **5.4** | 4.8 U | 5.0 U | **14** | 4.8 U | **880** | **1700** |
| | Anthracene | -- | 5.0 U | 4.9 U | **87** | **19** | **11** | 5.0 U | **18** | 4.8 U | **290** | **450** |
| | Benzo(a)anthracene | -- | **12** | 4.9 U | **160** | **27** | **18** | 5.0 U | **54** | 4.8 U | **1800** | **3600** |
| | Benzo(a)pyrene | 2000 | **12** | 4.9 U | **180** | **23** | **15** | 5.0 U | **61** | 4.8 U | **3000** | **7900** |
| | Benzo(b)fluoranthene | -- | **18** | 4.9 U | **240** | **35** | **20** | 5.0 U | **73** | 4.8 U | **1700** | **3400** |
| | Benzo(g,h,i)perylene | -- | **8.4** | 4.9 U | **110** | **9.9** | **6.3** | 5.0 U | **37** | 4.8 U | **1300** | **2900** |
| | Benzo(k)fluoranthene | -- | **13** | 4.9 U | **230** | **26** | **18** | 5.0 U | **67** | 4.8 U | **2100** | **5600** |
| | Benzoic acid | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Benzyl alcohol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | bis(2-Ethylhexyl)phthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Butylbenzylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Chrysene | -- | **22** | 4.9 U | **280** | **54** | **23** | 5.0 U | **87** | 4.8 U | **3000** | **7500** |
| | Dibenzo(a,h)anthracene | -- | 5.0 U | 4.9 U | **38** | 5.0 U | 4.8 U | 5.0 U | **8.4** | 4.8 U | **390** | **900** |
| | Dibenzofuran | -- | 5.0 U | 4.9 U | **32** | **18** | **6.8** | 5.0 U | **7.9** | 4.8 U | 37 U | 38 U |
| | Diethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Dimethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Di-n-butylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Di-n-octylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Fluoranthene | -- | **37** | 4.9 U | **480** | **91** | **61** | 5.0 U | **120** | 4.8 U | **2500** | **6000** |
| | Fluorene | -- | 5.0 U | 4.9 U | **88** | **35** | **7.3** | 5.0 U | **7.9** | 4.8 U | **67** | **53** |
| | Hexachlorobenzene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | Hexachlorobutadiene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| | Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Indeno(1,2,3-cd)pyrene | -- | **7.4** | 4.9 U | **110** | **9.4** | **6.3** | 5.0 U | **35** | 4.8 U | **1200** | **2700** |
| | Naphthalene | 5000 | 5.0 U | 4.9 U | **74** | **58** | **7.3** | 5.0 U | **24** | 4.8 U | **340** | **470** |
| | n-Nitrosodiphenylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Phenanthrene | -- | **26** | 4.9 U | **370** | **140** | **27** | 5.0 U | **54** | 4.8 U | **510** | **640** |
| | Phenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Pyrene | -- | **32** | 4.9 U | **400** | **110** | **51** | 5.0 U | **120** | 4.8 U | **4000** | **10000** |
| | Total PAHs (U=1/2) | -- | **203** | 39.2 U | **2943** | **675** | **278** | 40 U | **787** | 38.4 U | **23096** | **53858** |
| **Volatiles (µg/kg)** | | | | | | | | | | | | |
| | 1,1,1,2-Tetrachloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,1,1-Trichloroethane | 2000 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,1,2,2-Tetrachloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,1,2-Trichloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,1-Dichloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,1-Dichloroethene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |

**Table 3**
**Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| | Location ID | | DSI-08 | DSI-08 | DSI-09 | DSI-09 | DSI-10 | DSI-10 | DSI-11 | DSI-11 | DSI-12 | DSI-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample ID | | DSI08-SO-A | DSI08-SO-B | DSI09-SO-A | DSI09-SO-B | DSI10-SO-A | DSI10-SO-B | DSI11-SO-A | DSI11-SO-B | DSI12-SO-A | DSI12-SO-B |
| | Sample Date | | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 |
| | Depth Interval | | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft |
| | Sample Matrix | | SO | SO | SO | SO | SO | SO | SO | SO | SO | SO |
| | Sample Type | MTCA A Industrial | N | N | N | N | N | N | N | N | N | N |
| | 1,1-Dichloropropene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,2,3-Trichloropropane | -- | 2.6 U | 2.3 U | 2.1 U | 2.0 UJ- | 2.4 U | 2.0 U | 2.2 U | 2.1 U | 2.0 U | 2.2 U |
| | 1,2-Dibromo-3-chloropropane | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| | 1,2-Dibromoethane | 5 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,2-Dichloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,2-Dichloropropane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 1,3-Dichloropropane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 2,2-Dichloropropane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 2-Butanone | -- | **6.6** | 5.7 U | **10** | 5.0 U | **6.5** | 5.1 U | **12** | **9.4** | **5.6** | 5.4 U |
| | 2-Chlorotoluene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 2-Hexanone | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| | 4-Chlorotoluene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 4-Isopropyltoluene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | 4-Methyl-2-pentanone | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 U | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| | Acetone | -- | **62** | **49** | **100** | **55** | **55** | 35 U | **96** | **70** | **57** | **45** |
| | Benzene | 30 | 1.3 U | 1.2 U | **1.0** | **1.3** | 1.2 U | 1.0 U | **2.3** | 1.1 U | **1.4** | **3.0** |
| | Bromobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Bromochloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Bromodichloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Bromoform | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Bromomethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Carbon disulfide | -- | 1.3 U | 1.2 U | 1.0 U | **1.6** | 1.2 U | **1.0** | **1.9** | **15** | 1.0 U | 1.1 U |
| | Carbon tetrachloride | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Chloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Chloroform | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Chloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | cis-1,2-Dichloroethene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | cis-1,3-Dichloropropene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Dibromochloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Dibromomethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Dichlorodifluoromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Dichloromethane | 20 | **2.8** | 2.3 U | 2.1 U | 2.0 U | 2.4 U | **2.3** | 2.2 U | 2.1 U | 2.0 U | 2.2 U |
| | Ethylbenzene | 6000 | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Isopropylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | n-Butylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | n-Propylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | sec-Butylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Styrene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | tert-Butylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | tert-Butylmethylether | 100 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Tetrachloroethene | 50 | **3.6** | **1.4** | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Toluene | 7000 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | **3.4** |
| | trans-1,2-Dichloroethene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | trans-1,3-Dichloropropene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Trichloroethene | 30 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Trichlorofluoromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | Vinyl chloride | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | m,p-Xylenes | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| | o-Xylene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |

**Table 3**
**Notes**

Qualifiers:

| | |
|---|---|
| N | normal field sample |
| FD | field duplicate |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| U | The analyte was analyzed for, but not detected above the sample reporting limit. |
| | Denotes criteria exceedance |
| **Bold** | Denotes detections |

Notes:

| | |
|---|---|
| -- | No numerical criterion of this type for this chemical |
| MTCA | Model Toxics Control Act (WAC 173-340) |
| HPAH | High molecular weight polycyclic aromatic hydrocarbon |
| LPAH | Low molecular weight polycyclic aromatic hydrocarbon |
| mg/kg | milligrams per kilogram |
| µg/kg | micrograms per kilogram |
| (1) | If benzene is present, the cleanup level is 30 mg/kg. If benzene is not present, the cleanup level is 100 mg/kg |

**Table 4**
**Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Sample Matrix<br>Sample Type | MTCA A Industrial | DSI-01<br>DSI01-GW<br>9/27/2006<br>WG<br>N | DSI-02<br>DSI02-GW<br>9/27/2006<br>WG<br>N | DSI-03<br>DSI03-GW<br>9/27/2006<br>WG<br>N | DSI-04<br>DSI04-GW<br>9/27/2006<br>WG<br>N | DSI-05<br>DSI05-GW<br>9/27/2006<br>WG<br>N | DSI-06<br>DSI06-GW<br>9/27/2006<br>WG<br>N | DSI-07<br>DSI07-GW<br>9/28/2006<br>WG<br>N | DSI-07<br>DSI57-GW<br>9/28/2006<br>WG<br>FD | DSI-08<br>DSI08-GW<br>9/28/2006<br>WG<br>N | DSI-09<br>DSI09-GW<br>9/28/2006<br>WG<br>N | DSI-10<br>DSI10-GW<br>9/28/2006<br>WG<br>N | DSI-11<br>DSI11-GW<br>9/28/2006<br>WG<br>N | DSI-12<br>DSI12-GW<br>9/28/2006<br>WG<br>N | MW-4<br>MW-4-GW-060929<br>9/29/2006<br>WG<br>N | MW-5<br>MW-5-GW-060929<br>9/29/2006<br>WG<br>N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TPH (mg/L)** | | | | | | | | | | | | | | | | |
| TPH - Gasoline Range | 800/1000[(1)] | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | **2.0** | **2.2** | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| TPH - Diesel Range | 500 | 0.25 U | 0.25 U | **0.93** | 0.25 U | 0.25 U | 0.25 U | **1.9** | **1.9** | 0.25 U | 0.25 U | 0.25 U | **3.2** | **0.63** | **0.35** | 0.25 U |
| TPH - Motor Oil Range | 500 | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **Metals-dissolved (µg/L)** | | | | | | | | | | | | | | | | |
| Arsenic | -- | **68.4** | **2.4** | **1.5** | **2.2** | **0.6** | **1.8** | **3.8** | **4.2** | **1.4** | **1.6** | **0.8** | **0.8** | **5.0** | **1.0** | **3.4** |
| Cadmium | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chromium | -- | 0.5 UJ | 0.5 U | 2 U | 2 U | 2 U | 0.5 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 0.5 U | 1 U | **42** |
| Copper | -- | 0.5 U | 0.5 U | **0.8** | **0.7** | 0.5 U | 0.5 U | **0.6** | **1.1** | **0.7** | **0.9** | 0.5 U | 0.5 U | 0.5 U | 0.5 U | **14.3** |
| Lead | -- | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Mercury | -- | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Silver | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.4** |
| Zinc | -- | **5** | 4 U | **13** | 4 U | **7** | **5** | **6** | **7** | 4 U | **44** | **7** | **8** | 4 U | **4** | **8** |
| **Metals-total (µg/L)** | | | | | | | | | | | | | | | | |
| Arsenic | 5 | **84.4** | **16.4** | **9.5** | **11.2** | **2** | **2.3** | **9.5** | **7.2** | **11.8** | **2.6** | **2.4** | **6.7** | **32.5** | **1.0** | **4.9** |
| Cadmium | 5 | **0.3** | **0.3** | **0.2** | **0.2** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | **0.3** | **1.6** | **0.3** | 0.2 U | 0.2 U |
| Chromium | 50 | **7** | **49** | **38** | **29** | **6** | 2 U | **21** | **14** | **37** | 5 U | **5** | **34** | **20** | 1 U | **54** |
| Copper | -- | **18.5** | **86.7** | **53** | **55.6** | **15.2** | **7.5** | **39.1** | **24** | **70.4** | **34.4** | **26.1** | **49.2** | **126** | 0.5 U | **29** |
| Lead | 15 | **3** | **11** | **8** | **13** | **6** | **2** | **6** | **5** | **12** | **55** | **14** | **10** | **27** | 1 U | **2** |
| Mercury | 2 | 0.1 U | **0.1** | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.10 U | 0.10 U | **0.12** | 0.10 U | 0.10 U | 0.10 U | **0.12** | 0.10 U | 0.10 U |
| Silver | -- | 0.2 UJ | **0.3** | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.4** | **0.2** | 0.2 U | 0.2 U | **0.2** | 0.2 U | **0.8** |
| Zinc | -- | **33** | **137** | **147** | **92** | **25** | **9** | **61** | **42** | **103** | **98** | **19** | **154** | **109** | **4** | **14** |
| **Pesticides (µg/L)** | | | | | | | | | | | | | | | | |
| 4,4'-DDD | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDE | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDT | 0.3 | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Total DDT (U=1/2) | -- | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U |
| Aldrin | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| alpha-BHC | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| beta-BHC | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| delta-BHC | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-BHC (Lindane) | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.018 U | 0.0050 U | 0.0050 U |
| alpha-Chlordane | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-Chlordane | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Dieldrin | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan I | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Endosulfan II | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan Sulfate | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin aldehyde | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin ketone | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Heptachlor | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Heptachlor Epoxide | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Methoxychlor | -- | 0.054 U | 0.056 U | 0.055 U | 0.054 U | 0.053 U | 0.055 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Toxaphene | -- | 0.54 U | 0.56 U | 0.55 U | 0.54 U | 0.53 U | 0.55 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |

**Table 4**
**Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Sample Matrix<br>Sample Type | MTCA A Industrial | DSI-01<br>DSI01-GW<br>9/27/2006<br>WG<br>N | DSI-02<br>DSI02-GW<br>9/27/2006<br>WG<br>N | DSI-03<br>DSI03-GW<br>9/27/2006<br>WG<br>N | DSI-04<br>DSI04-GW<br>9/27/2006<br>WG<br>N | DSI-05<br>DSI05-GW<br>9/27/2006<br>WG<br>N | DSI-06<br>DSI06-GW<br>9/27/2006<br>WG<br>N | DSI-07<br>DSI07-GW<br>9/28/2006<br>WG<br>N | DSI-07<br>DSI57-GW<br>9/28/2006<br>WG<br>FD | DSI-08<br>DSI08-GW<br>9/28/2006<br>WG<br>N | DSI-09<br>DSI09-GW<br>9/28/2006<br>WG<br>N | DSI-10<br>DSI10-GW<br>9/28/2006<br>WG<br>N | DSI-11<br>DSI11-GW<br>9/28/2006<br>WG<br>N | DSI-12<br>DSI12-GW<br>9/28/2006<br>WG<br>N | MW-4<br>MW-4-GW-060929<br>9/29/2006<br>WG<br>N | MW-5<br>MW-5-GW-060929<br>9/29/2006<br>WG<br>N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PCBs (µg/L)** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1221 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.080 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1232 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.040 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1242 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1248 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1254 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1260 | -- | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 U | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 U | 0.020 UJ |
| Total PCBs (U=1/2) | 0.1 | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.11 U | 0.13 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U |
| **SVOCs (µg/L)** | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2,4-Trichlorobenzene | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2,4-Trimethylbenzene | -- | 0.2 U | **0.4** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **24** | **26** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2-Dichlorobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,3,5-Trimethylbenzene | -- | 0.2 U | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **10** | **12** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,3-Dichlorobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,4-Dichlorobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2-Methylnaphthalene | -- | 0.10 U | 0.07 U | **0.11** | 0.02 U | **0.12** | 0.06 U | **32** | **28** | 0.06 U | 0.08 U | 0.06 U | 0.07 U | **0.47** | **1.3** | 0.01 U |
| Acenaphthene | -- | **0.07** | **0.03** | **0.01** | 0.01 U | **0.06** | **0.09** | **0.54** | **0.53** | **0.01 J** | **0.05** | **0.11** | **0.22** | **2.2** | **2.9** | 0.01 U |
| Acenaphthylene | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.06** | **0.06** | 0.01 U | 0.01 U | 0.01 U | **0.02** | **1.8** | **0.08** | 0.01 U |
| Anthracene | -- | **0.02** | **0.01 J** | **0.02** | 0.01 U | **0.01 J** | **0.01 J** | **0.03** | **0.03** | **0.01 J** | **0.02** | 0.01 U | **0.01** | **2.6** | **0.14** | 0.01 U |
| Benzo(a)anthracene | -- | **0.01 J** | 0.01 U | **0.03** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01** | 0.01 U | 0.01 U | **3.4** | 0.01 U | 0.01 U |
| Benzo(a)pyrene | 0.1 | 0.01 U | 0.01 U | **0.02** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | **3.5** | 0.01 U | 0.01 U |
| Benzo(b)fluoranthene | -- | 0.01 U | 0.01 U | **0.02** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.0** | 0.01 U | 0.01 U |
| Benzo(g,h,i)perylene | -- | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **0.01 J** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **1.9** | 0.01 U | 0.01 U |
| Benzo(k)fluoranthene | -- | 0.01 U | 0.01 U | **0.03** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.2** | 0.01 U | 0.01 U |
| Chrysene | -- | **0.01** | **0.01 J** | **0.06** | 0.01 U | **0.02** | **0.01 J** | **0.01 J** | **0.01 J** | **0.01 J** | **0.02** | **0.02** | **0.01 J** | **5.0** | 0.01 U | 0.01 U |
| Dibenzo(a,h)anthracene | -- | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.65** | 0.01 U | 0.01 U |
| Dibenzofuran | -- | **0.03** | **0.01** | **0.01** | 0.01 U | **0.01 J** | **0.01 J** | **0.14** | **0.14** | **0.01 J** | **0.01 J** | 0.01 U | **0.03** | **0.44** | **0.13** | 0.01 U |
| Fluoranthene | -- | **0.05** | **0.02** | **0.02** | **0.01** | **0.02** | **0.03** | **0.02** | **0.02** | **0.02** | **0.04** | **0.01 J** | **0.03** | **8.5** | **0.13** | **0.01 J** |
| Fluorene | -- | **0.06** | **0.03** | **0.02** | 0.01 U | **0.01** | **0.03** | **0.57** | **0.54** | **0.01 J** | **0.03** | **0.01 J** | **0.16** | **3.3** | **2.0** | **0.01 J** |
| Hexachlorobenzene | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Hexachlorobutadiene | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **1.5** | 0.01 U | 0.01 U |
| Naphthalene | 160 | **0.12** | **0.12** | **0.13** | **0.07** | **0.16** | **0.15** | **4.7** | **4.2** | **0.08** | **0.10** | **0.10** | **0.20** | **1.2** | **8.7** | **0.01 J** |
| Phenanthrene | -- | **0.14** | **0.05** | **0.06** | **0.01** | **0.04** | **0.04** | **0.31** | **0.31** | **0.03** | **0.13** | **0.02** | **0.04** | **5.6** | **0.15** | **0.02** |
| Pyrene | -- | **0.04** | **0.02** | **0.01** | **0.01 J** | **0.02** | **0.05** | **0.02** | **0.02** | **0.01** | **0.05** | **0.01** | **0.02** | **11** | **0.07** | **0.01 J** |
| Total PAHs (U=1/2) | -- | **0.55** | **0.33** | **0.46** | **0.16** | **0.41** | **0.45** | **6.3** | **5.75** | **0.22** | **0.5** | **0.34** | **0.74** | **56.4** | **14.2** | **0.11** |
| **Volatiles (µg/L)** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1,1-Trichloroethane | 200 | **1.0** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1,2,2-Tetrachloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1,2-Trichloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1-Dichloroethane | -- | **0.2** | 0.2 U | 0.2 U | 0.2 U | **0.2** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.4** | 0.6 U |
| 1,1-Dichloroethene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1-Dichloropropene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2,3-Trichloropropane | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2-Dibromo-3-chloropropane | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2-Dibromoethane | 0.01 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2-Dichloroethane | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2-Dichloropropane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,3-Dichloropropane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2,2-Dichloropropane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2-Butanone | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 3.0 U |
| 2-Chlorotoluene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2-Hexanone | -- | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 9.0 U |
| 4-Chlorotoluene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |

**Table 4**
**Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Sample Matrix<br>Sample Type | MTCA A Industrial | DSI-01<br>DSI01-GW<br>9/27/2006<br>WG<br>N | DSI-02<br>DSI02-GW<br>9/27/2006<br>WG<br>N | DSI-03<br>DSI03-GW<br>9/27/2006<br>WG<br>N | DSI-04<br>DSI04-GW<br>9/27/2006<br>WG<br>N | DSI-05<br>DSI05-GW<br>9/27/2006<br>WG<br>N | DSI-06<br>DSI06-GW<br>9/27/2006<br>WG<br>N | DSI-07<br>DSI07-GW<br>9/28/2006<br>WG<br>N | DSI-07<br>DSI57-GW<br>9/28/2006<br>WG<br>FD | DSI-08<br>DSI08-GW<br>9/28/2006<br>WG<br>N | DSI-09<br>DSI09-GW<br>9/28/2006<br>WG<br>N | DSI-10<br>DSI10-GW<br>9/28/2006<br>WG<br>N | DSI-11<br>DSI11-GW<br>9/28/2006<br>WG<br>N | DSI-12<br>DSI12-GW<br>9/28/2006<br>WG<br>N | MW-4<br>MW-4-GW-060929<br>9/29/2006<br>WG<br>N | MW-5<br>MW-5-GW-060929<br>9/29/2006<br>WG<br>N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-Isopropyltoluene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 4-Methyl-2-pentanone | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 3.0 U |
| Acetone | -- | **5.4** | **8.0** | **6.3** | **3.8** | 3.0 U | **3.8** | 3.0 U | 3.0 U | **5.5** | **4.7** | **4.7** | **6.3** | **6.3** | **4.1** | 9.0 U |
| Benzene | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.2** | **0.6** | **180** | **210** | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromochloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromodichloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromoform | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromomethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Carbon disulfide | -- | **0.2** | **0.6** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Carbon tetrachloride | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Chloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Chloroform | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Chloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| cis-1,2-Dichloroethene | -- | **0.5** | 0.2 U | **0.2** | **0.6** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| cis-1,3-Dichloropropene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dibromochloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dibromomethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dichlorodifluoromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dichloromethane | 5 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | **0.3** | 0.9 U |
| Ethylbenzene | 700 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **10** | **11** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Isopropylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **25** | **28** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** | 0.2 U | 0.6 U |
| n-Butylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **14** | **13** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| n-Propylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **94** | **110** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** | 0.2 U | 0.6 U |
| sec-Butylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **8.2** | **8.5** | 0.2 U | 0.2 U | 0.2 U | **0.2** | **0.2** | 0.2 U | 0.6 U |
| Styrene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| tert-Butylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.5** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| tert-Butylmethylether | 20 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Tetrachloroethene | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Toluene | 1000 | **0.5** | **0.7** | **0.6** | **0.5** | **0.4** | **0.4** | **4.4** | **4.6** | **0.4** | **0.4** | **0.7** | **0.5** | **0.4** | 0.2 U | 0.6 U |
| trans-1,2-Dichloroethene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| trans-1,3-Dichloropropene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Trichloroethene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Trichlorofluoromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Vinyl chloride | 0.2 | 0.2 U | 0.2 U | 0.2 U | **0.6** | **0.3** | 0.2 U | 0.2 U | 0.2 U | **0.4** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| m,p-Xylenes | 1000 | 0.4 U | **0.5** | **0.5** | 0.4 U | 0.4 U | **0.4** | **6.4** | **7.1** | 0.4 U | 0.4 U | 0.4 U | **0.5** | **0.5** | 0.4 U | 1.2 U |
| o-Xylene | -- | 0.2 U | **0.2** | **0.2** | 0.2 U | 0.2 U | **0.2** | 0.2 U | **0.9** | 0.2 U | 0.2 U | 0.2 U | **0.3** | **0.3** | 0.2 U | 0.6 U |

Qualifiers:

| | |
|---|---|
| N | Normal field sample |
| FD | Field duplicate |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| U | The analyte was analyzed for, but not detected above the sample reporting limit. |
| | Denotes criteria exceedance |
| **Bold** | Denotes detections |

Notes:

| | |
|---|---|
| -- | No numerical criterion of this type for this chemical |
| MTCA | Model Toxics Control Act (WAC 173-340) |
| HPAH | High molecular weight polycyclic aromatic hydrocarbon |
| LPAH | Low molecular weight polycyclic aromatic hydrocarbon |
| mg/L | milligrams per liter |
| µg/L | micrograms per liter |
| 1 | If benzene is present, the cleanup level is 800 mg/L. If benzene is not present, the cleanup level is 1,000 mg/L. |

**Table 5**
**Summary of Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards**

| | Location ID | | | DSI-09 | DSI-09 | DSI-10 | DSI-10 | DSI-11 | DSI-11 | DSI-12 | DSI-12 | DSI-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample ID | | | DSI09-SO-A | DSI09-SO-B | DSI10-SO-A | DSI10-SO-B | DSI11-SO-A | DSI11-SO-B | DSI12-SO-A | DSI12-SO-B | DSI22-CB-060929 |
| | Sample Date | | | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/29/2006 |
| | Depth Interval | | | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | |
| | Sample Matrix | SMS | SMS | SO | SO | SO | SO | SO | SO | SO | SO | SE |
| | Sample Type | SQS | CSL | N | N | N | N | N | N | N | N | N |
| **Conventionals (%)** | | | | | | | | | | | | |
| | Total solids | -- | -- | **92.60** | **89.60** | **69.70** | **95.30** | **76.10** | **93.70** | **87.70** | **86.70** | **67.00** |
| | Total Organic Carbon | -- | -- | **0.939** | **2.35** | **1.30** | **0.147** | **1.34** | **0.099** | **1.25** | **1.12** | **3.28** |
| **Metals (mg/kg)** | | | | | | | | | | | | |
| | Arsenic | 57 | 93 | **3.7** | **20.2** | **6.2** | **1.9** | **4.4** | **1.4** | **17.1** | **3.3** | **29.7 J** |
| | Cadmium | 5.1 | 6.7 | **0.3** | **8.5 * #** | 0.3 U | 0.2 U | **0.3** | 0.2 U | **0.2** | 0.2 U | **2** |
| | Chromium | 260 | 270 | **17.4** | **36** | **20.2** | **14.2** | **17.1** | **11.4** | **20.1** | **15.5** | **87** |
| | Chromium VI | | | 0.117 UJ | 0.124 UJ | 0.157 UJ | 0.117 UJ | **2.05 J** | 0.120 UJ | 0.125 UJ | 0.123 UJ | -- |
| | Copper | 390 | 390 | **65.9** | **3310 * #** | **29.0** | **8.8** | **49.0** | **8.4** | **34.2** | **18.1** | **2450 * #** |
| | Lead | 450 | 530 | **118** | **4940 * #** | **8** | **11** | **92** | 2 U | **20** | **6** | **350 J** |
| | Mercury | 0.41 | 0.59 | **0.31** | **0.18** | **0.11** | 0.04 U | **0.76 * #** | 0.04 U | **0.08** | 0.05 U | **1.05 * #** |
| | Silver | 6.1 | 6.1 | 0.3 U | **1.2** | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.3 U | 0.3 U | 2 U |
| | Zinc | 410 | 960 | **115** | **5840 * #** | **43.7** | **25.2** | **78.3** | **23.0** | **77.4** | **36.8** | **2600 * #** |
| **PCBs (mg/kg-OC)** | | | | | | | | | | | | |
| | Total PCBs (SMS) | 12 | 65 | 1.02 U | 0.417 U | 0.754 U | 6.39 U | **2.61** | 10 U | 2.32 U | 2.59 U | 11.9 U |
| **LPAH (mg/kg-OC)** | | | | | | | | | | | | |
| | Naphthalene | 99 | 170 | **7.88** | **2.47** | **0.562** | 3.4 U | **1.79** | 4.85 U | **27.2** | **42** | **12.5** |
| | Acenaphthylene | 66 | 66 | **1.49** | **0.23** | 0.369 U | 3.4 U | **1.04** | 4.85 U | **70.4 * #** | **152 * #** | 1.8 U |
| | Acenaphthene | 16 | 57 | **8.73** | **1.28** | 0.369 U | 3.4 U | **0.515** | 4.85 U | 2.96 U | **4.02** | **22.6 J *** |
| | Fluorene | 23 | 79 | **9.37** | **1.49** | **0.562** | 3.4 U | **0.59** | 4.85 U | **5.36** | **4.73** | **17.7** |
| | Phenanthrene | 100 | 480 | **39.4** | **5.96** | **2.08** | 3.4 U | **4.03** | 4.85 U | **40.8** | **57.1** | **67.1** |
| | Anthracene | 220 | 1200 | **9.27** | **0.809** | **0.846** | 3.4 U | **1.34** | 4.85 U | **23.2** | **40.2** | **13.4** |
| | 2-Methylnaphthalene | 38 | 64 | **5.01** | **1.45** | **0.6** | 3.4 U | **1.42** | 4.85 U | **18.4** | **26.8** | **4.88** |
| | Total LPAH (SMS) | 370 | 780 | **76.1** | **12.2** | **4.05** | 3.4 U | **9.33** | 4.85 U | **167** | **300** | **133** |
| **HPAH (mg/kg-OC)** | | | | | | | | | | | | |
| | Fluoranthene | 160 | 1200 | **51.1** | **3.87** | **4.69** | 3.4 U | **8.96** | 4.85 U | **200 *** | **536 *** | **97.6** |
| | Pyrene | 1000 | 1400 | **42.6** | **4.68** | **3.92** | 3.4 U | **8.96** | 4.85 U | **320** | **893** | **79.3 J** |
| | Benzo(a)anthracene | 110 | 270 | **17** | **1.15** | **1.38** | 3.4 U | **4.03** | 4.85 U | **144 *** | **321 * #** | **14.6** |
| | Chrysene | 110 | 460 | **29.8** | **2.3** | **1.77** | 3.4 U | **6.49** | 4.85 U | **240 *** | **670 * #** | **39.6** |
| | Benzo(a)pyrene | 99 | 210 | **19.2** | **0.979** | **1.15** | 3.4 U | **4.55** | 4.85 U | **240 * #** | **705 * #** | **21** |
| | Indeno(1,2,3-cd)pyrene | 34 | 88 | **11.7** | **0.4** | **0.485** | 3.4 U | **2.61** | 4.85 U | **96 * #** | **241 * #** | **8.54** |
| | Dibenzo(a,h)anthracene | 12 | 33 | **4.05** | 0.213 U | 0.369 U | 3.4 U | **0.627** | 4.85 U | **31.2 *** | **80.4 * #** | **2.44** |
| | Benzo(g,h,i)perylene | 31 | 78 | **11.7** | **0.421** | **0.485** | 3.4 U | **2.76** | 4.85 U | **104 * #** | **259 * #** | **9.76** |
| | Total benzofluoranthenes (SMS) | 230 | 450 | **50.1** | **2.6** | **2.92** | 3.4 U | **10.4** | 4.85 U | **304 *** | **804 * #** | **50.9** |
| | Total HPAH (SMS) | 960 | 5300 | **237** | **16.4** | **16.8** | 3.4 U | **49.4** | 4.85 U | **1679 *** | **4509 *** | **324** |
| **Chlorinated Hydrocarbons (mg/kg-OC)** | | | | | | | | | | | | |
| | 1,4-Dichlorobenzene | 3.1 | 9 | 0.106 U | 0.0426 UJ- | 0.0923 U | 0.68 U | 0.0821 U | 1.11 U | 0.08 U | 0.0982 U | 1.8 U |
| | 1,2-Dichlorobenzene | 2.3 | 2.3 | 0.106 U | 0.0426 UJ- | 0.0923 U | 0.68 U | 0.0821 U | 1.11 U | 0.08 U | 0.0982 U | 1.8 U |
| | 1,2,4-Trichlorobenzene | 0.81 | 1.8 | 0.554 U | 0.213 UJ- | 0.462 U | 3.47 U | 0.418 U | 5.35 U | 0.392 U | 0.482 U | 1.8 U |
| | Hexachlorobenzene | 0.38 | 2.3 | 0.17 U | 0.0681 U | 0.123 U | 1.16 U | 0.119 U | 1.62 UJ | 0.128 U | 0.143 U | 1.8 U |
| **Phthalates (mg/kg-OC)** | | | | | | | | | | | | |
| | Dimethylphthalate | 53 | 53 | NA | NA | NA | NA | NA | NA | NA | NA | 1.8 U |
| | Diethylphthalate | 61 | 110 | NA | NA | NA | NA | NA | NA | NA | NA | 1.8 U |
| | Di-n-butylphthalate | 220 | 1700 | NA | NA | NA | NA | NA | NA | NA | NA | **5.49** |
| | Butylbenzylphthalate | 4.9 | 64 | NA | NA | NA | NA | NA | NA | NA | NA | **14.3 *** |
| | bis(2-Ethylhexyl)phthalate | 47 | 78 | NA | NA | NA | NA | NA | NA | NA | NA | **488 * #** |
| | Di-n-octylphthalate | 58 | 4500 | NA | NA | NA | NA | NA | NA | NA | NA | **24.4** |
| **Misc Extractables (mg/kg-OC)** | | | | | | | | | | | | |
| | Dibenzofuran | 15 | 58 | **3.41** | **0.766** | **0.523** | 3.4 U | **0.59** | 4.85 U | 2.96 U | 3.39 U | **14.6** |
| | Hexachlorobutadiene | 3.9 | 6.2 | 0.17 U | 0.0681 U | 0.123 U | 1.16 U | 0.119 U | 1.62 UJ | 0.128 U | 0.143 U | 1.8 U |
| | n-Nitrosodiphenylamine | 11 | 11 | NA | NA | NA | NA | NA | NA | NA | NA | 3.96 UJ |

**Table 5**
**Summary of Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards**

| Location ID | | | | DSI-09 | DSI-09 | DSI-10 | DSI-10 | DSI-11 | DSI-11 | DSI-12 | DSI-12 | DSI-22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | | | DSI09-SO-A | DSI09-SO-B | DSI10-SO-A | DSI10-SO-B | DSI11-SO-A | DSI11-SO-B | DSI12-SO-A | DSI12-SO-B | DSI22-CB-060929 |
| Sample Date | | | | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/29/2006 |
| Depth Interval | | | | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | |
| Sample Matrix | | SMS | SMS | SO | SO | SO | SO | SO | SO | SO | SO | SE |
| Sample Type | | SQS | CSL | N | N | N | N | N | N | N | N | N |
| **Phenols (µg/kg)** | | | | | | | | | | | | |
| | Phenol | 420 | 1200 | NA | NA | NA | NA | NA | NA | NA | NA | **140 J** |
| | 2-Methylphenol | 63 | 63 | NA | NA | NA | NA | NA | NA | NA | NA | 59 U |
| | 4-Methylphenol | 670 | 670 | NA | NA | NA | NA | NA | NA | NA | NA | **96** |
| | 2,4-Dimethylphenol | 29 | 29 | NA | NA | NA | NA | NA | NA | NA | NA | 59 U |
| | Pentachlorophenol | 360 | 690 | NA | NA | NA | NA | NA | NA | NA | NA | 290 UJ |
| **Misc Extractables (µg/kg)** | | | | | | | | | | | | |
| | Benzyl alcohol | 57 | 73 | NA | NA | NA | NA | NA | NA | NA | NA | 240 U |
| | Benzoic acid | 650 | 650 | NA | NA | NA | NA | NA | NA | NA | NA | 590 U |
| | Dibenzofuran | -- | -- | **32** | **18** | **6.8** | 5.0 U | **7.9** | 4.8 U | 37 U | 38 U | **480** |
| | Hexachloroethane | -- | -- | NA | NA | NA | NA | NA | NA | NA | NA | 59 U |
| | Hexachlorobutadiene | -- | -- | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U | 59 U |
| | n-Nitrosodiphenylamine | -- | -- | NA | NA | NA | NA | NA | NA | NA | NA | 130 UJ |

Qualifiers:

| | |
|---|---|
| N | normal field sample |
| FD | field duplicate |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| U | The analyte was analyzed for, but not detected above the sample reporting limit. |
| | Denotes criteria exceedance |
| * | Exceeds SQS criteria |
| # | Exceeds CSL criteria |
| **Bold** | Denotes detections |

Notes:

| | |
|---|---|
| -- | No numerical criterion of this type for this chemical |
| NA | Sample not analyzed for this chemical |
| HPAH | High molecular weight polycyclic aromatic hydrocarbon |
| LPAH | Low molecular weight polycyclic aromatic hydrocarbon |
| SMS | Sediment Management Standards (WAC 173-204) |
| SQS | Sediment Quality Standards (WAC 173-204-320) |
| CSL | Cleanup Screening Level (WAC 173-204-520) |
| mg/kg | miligrams per kilogram |
| µg/kg | micrograms per kilogram |
| OC | organic carbon normalized |

Where laboratory analysis indicates a chemical is not detected in a sediment sample, the detection limit will be reported, except as noted. Where chemical criteria in this table represent the sums of individual compounds (e.g., total LPAHs and total HPAHs), isomers (e.g., total benzofluoranthenes), or groups of aroclors/congeners (e.g., total PCBs), and a chemical analysis identifies an undetected value for one or more individual compounds, isomers, or groups of congeners, the SMS require that the sum of the detected values should be used as the sum of the respective compounds or groups of isomers or aroclors/congeners. If all values are undetected, then the highest detection limit should be used as the sum of the respective compounds or groups of isomers or aroclors/congeners.

The listed values represent concentrations in parts per million (ppm) “normalized” on a total organic carbon (TOC) basis. To normalize to TOC, the dry-weight concentration for each parameter is divided by the decimal fraction representing the percent TOC content of the sediment.

The total LPAH criteria will be compared to the sum of the concentrations of the following LPAH compounds: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene. 2-methylnaphthalene is not included in the LPAH definition under the SMS. Inclusion of 2-methylnaphthalene in the LPAH definition under the SMS is being considered. The total LPAH criteria are not the sums of the corresponding criteria listed for the individual LPAH compounds.

The total HPAH criteria will be compared to the sum of the concentrations of the following HPAH compounds: fluoranthene, pyrene, benz[a]-anthracene, chrysene, total benzo-fluoranthenes, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenz[a,h]anthracene, and benzo-[g,h,i]-perylene. The total HPAH criteria are not the sums of the corresponding criteria listed for the individual HPAH compounds.

The total benzofluoranthenes criteria will be compared to the sums of the concentrations of the b, j, and k isomers of benzofluoranthene.

**Table 6**
**Summary of Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria**

| Location ID<br>Sample ID<br>Sample Date<br>Sample Matrix<br>Sample Type | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006<br>WG<br>N | DSI-07<br>DSI07-GW<br>9/28/2006<br>WG<br>N | DSI-07<br>DSI57-GW<br>9/28/2006<br>WG<br>FD | DSI-08<br>DSI08-GW<br>9/28/2006<br>WG<br>N | DSI-09<br>DSI09-GW<br>9/28/2006<br>WG<br>N | DSI-10<br>DSI10-GW<br>9/28/2006<br>WG<br>N | DSI-11<br>DSI11-GW<br>9/28/2006<br>WG<br>N | DSI-12<br>DSI12-GW<br>9/28/2006<br>WG<br>N |
|---|---|---|---|---|---|---|---|---|---|---|
| **TPH (mg/L)** | | | | | | | | | | |
| TPH - Gasoline Range | -- | -- | 0.25 U | **2.0** | **2.2** | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| TPH - Diesel Range | -- | -- | 0.25 U | **1.9** | **1.9** | 0.25 U | 0.25 U | 0.25 U | **3.2** | **0.63** |
| TPH - Motor Oil Range | -- | -- | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **Metals-dissolved (µg/L)** | | | | | | | | | | |
| Arsenic | 36 | 69 | **1.8** | **3.8** | **4.2** | **1.4** | **1.6** | **0.8** | **0.8** | **5.0** |
| Cadmium | 9.3 | 42 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chromium | -- | -- | 0.5 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 0.5 U |
| Copper | 3.1 | 4.8 | 0.5 U | **0.6** | **1.1** | **0.7** | **0.9** | 0.5 U | 0.5 U | 0.5 U |
| Lead | 8.1 | 210 | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Mercury | 0.025 | 1.8 | 0.1 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Silver | -- | 1.9 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Zinc | 81 | 90 | **5** | **6** | **7** | 4 U | **44** | **7** | **8** | 4 U |
| **Metals-total (µg/L)** | | | | | | | | | | |
| Arsenic | -- | -- | **2.3** | **9.5** | **7.2** | **11.8** | **2.6** | **2.4** | **6.7** | **32.5** |
| Cadmium | -- | -- | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | **0.3** | **1.6** | **0.3** |
| Chromium | -- | -- | 2 U | **21** | **14** | **37** | 5 U | **5** | **34** | **20** |
| Copper | -- | -- | **7.5** | **39.1** | **24** | **70.4** | **34.4** | **26.1** | **49.2** | **126** |
| Lead | -- | -- | **2** | **6** | **5** | **12** | **55** | **14** | **10** | **27** |
| Mercury | -- | -- | 0.1 U | 0.10 U | 0.10 U | **0.12** | 0.10 U | 0.10 U | 0.10 U | **0.12** |
| Silver | -- | -- | 0.2 U | 0.2 U | 0.2 U | **0.4** | **0.2** | 0.2 U | 0.2 U | **0.2** |
| Zinc | -- | -- | **9** | **61** | **42** | **103** | **98** | **19** | **154** | **109** |
| **Pesticides (µg/L)** | | | | | | | | | | |
| 4,4'-DDD | 0.001 | 0.13 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDE | 0.001 | 0.13 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDT | 0.001 | 0.13 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Total DDT (U=1/2) | -- | -- | 0.017 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U |
| Aldrin | 0.0019 | 0.71 | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| alpha-BHC | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| beta-BHC | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| delta-BHC | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-BHC (Lindane) | -- | 0.16 | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.018 U |
| alpha-Chlordane | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-Chlordane | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Dieldrin | 0.0019 | 0.71 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan I | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Endosulfan II | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan Sulfate | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin | 0.0023 | 0.037 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin aldehyde | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin ketone | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Heptachlor | 0.0036 | 0.053 | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Heptachlor Epoxide | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Methoxychlor | -- | -- | 0.055 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Toxaphene | 0.0002 | 0.21 | 0.55 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **PCBs (µg/L)** | | | | | | | | | | |
| Aroclor 1016 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1221 | -- | -- | 0.020 U | 0.080 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1232 | -- | -- | 0.020 U | 0.040 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1242 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1248 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1254 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1260 | -- | -- | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 U | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ |
| Total PCBs (U=1/2) | 0.03 | 10 | 0.07 U | 0.11 U | 0.13 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U |
| **SVOCs (µg/L)** | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,4-Trichlorobenzene | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,4-Trimethylbenzene | -- | -- | 0.2 U | **24** | **26** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichlorobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,3,5-Trimethylbenzene | -- | -- | 0.2 U | **10** | **12** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,3-Dichlorobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,4-Dichlorobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2-Methylnaphthalene | -- | -- | 0.06 U | **32** | **28** | 0.06 U | 0.08 U | 0.06 U | 0.07 U | **0.47** |
| Acenaphthene | -- | -- | **0.09** | **0.54** | **0.53** | **0.01 J** | **0.05** | **0.11** | **0.22** | **2.2** |
| Acenaphthylene | -- | -- | **0.01 J** | **0.06** | **0.06** | 0.01 U | 0.01 U | 0.01 U | **0.02** | **1.8** |
| Anthracene | -- | -- | **0.01 J** | **0.03** | **0.03** | **0.01 J** | **0.02** | 0.01 U | **0.01** | **2.6** |
| Benzo(a)anthracene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01** | 0.01 U | 0.01 U | **3.4** |
| Benzo(a)pyrene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | **3.5** |
| Benzo(b)fluoranthene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.0** |
| Benzo(g,h,i)perylene | -- | -- | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **1.9** |
| Benzo(k)fluoranthene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.2** |
| Chrysene | -- | -- | **0.01 J** | **0.01 J** | **0.01 J** | **0.01 J** | **0.02** | **0.02** | **0.01 J** | **5.0** |
| Dibenzo(a,h)anthracene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.65** |
| Dibenzofuran | -- | -- | **0.01 J** | **0.14** | **0.14** | **0.01 J** | **0.01 J** | 0.01 U | **0.03** | **0.44** |
| Fluoranthene | -- | -- | **0.03** | **0.02** | **0.02** | **0.02** | **0.04** | **0.01 J** | **0.03** | **8.5** |
| Fluorene | -- | -- | **0.03** | **0.57** | **0.54** | **0.01 J** | **0.03** | **0.01 J** | **0.16** | **3.3** |
| Hexachlorobenzene | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Hexachlorobutadiene | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **1.5** |
| Naphthalene | -- | -- | **0.15** | **4.7** | **4.2** | **0.08** | **0.10** | **0.10** | **0.20** | **1.2** |
| Phenanthrene | -- | -- | **0.04** | **0.31** | **0.31** | **0.03** | **0.13** | **0.02** | **0.04** | **5.6** |
| Pyrene | -- | -- | **0.05** | **0.02** | **0.02** | **0.01** | **0.05** | **0.01** | **0.02** | **11** |
| Total PAHs (U=1/2) | -- | -- | **0.45** | **6.3** | **5.75** | **0.22** | **0.5** | **0.34** | **0.74** | **56.4** |
| **Volatiles (µg/L)** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,1-Trichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,2,2-Tetrachloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |

**Table 6**
**Summary of Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria**

| Location ID<br>Sample ID<br>Sample Date<br>Sample Matrix<br>Sample Type | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006<br>WG<br>N | DSI-07<br>DSI07-GW<br>9/28/2006<br>WG<br>N | DSI-07<br>DSI57-GW<br>9/28/2006<br>WG<br>FD | DSI-08<br>DSI08-GW<br>9/28/2006<br>WG<br>N | DSI-09<br>DSI09-GW<br>9/28/2006<br>WG<br>N | DSI-10<br>DSI10-GW<br>9/28/2006<br>WG<br>N | DSI-11<br>DSI11-GW<br>9/28/2006<br>WG<br>N | DSI-12<br>DSI12-GW<br>9/28/2006<br>WG<br>N |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloropropene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2,3-Trichloropropane | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dibromo-3-chloropropane | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dibromoethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichloropropane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,3-Dichloropropane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2,2-Dichloropropane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2-Butanone | -- | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 2-Chlorotoluene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2-Hexanone | -- | -- | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U |
| 4-Chlorotoluene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 4-Isopropyltoluene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 4-Methyl-2-pentanone | -- | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Acetone | -- | -- | **3.8** | 3.0 U | 3.0 U | **5.5** | **4.7** | **4.7** | **6.3** | **6.3** |
| Benzene | -- | -- | **0.6** | **180** | **210** | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromochloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromodichloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromoform | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromomethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Carbon disulfide | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | 0.2 U |
| Carbon tetrachloride | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloroform | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| cis-1,2-Dichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| cis-1,3-Dichloropropene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dibromochloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dibromomethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dichlorodifluoromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dichloromethane | -- | -- | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylbenzene | -- | -- | 0.2 U | **10** | **11** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Isopropylbenzene | -- | -- | 0.2 U | **25** | **28** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** |
| n-Butylbenzene | -- | -- | 0.2 U | **14** | **13** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| n-Propylbenzene | -- | -- | 0.2 U | **94** | **110** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** |
| sec-Butylbenzene | -- | -- | 0.2 U | **8.2** | **8.5** | 0.2 U | 0.2 U | 0.2 U | **0.2** | **0.2** |
| Styrene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| tert-Butylbenzene | -- | -- | 0.2 U | 0.2 U | **0.5** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| tert-Butylmethylether | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Tetrachloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Toluene | -- | -- | **0.4** | **4.4** | **4.6** | **0.4** | **0.4** | **0.7** | **0.5** | **0.4** |
| trans-1,2-Dichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| trans-1,3-Dichloropropene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Trichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Trichlorofluoromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Vinyl chloride | -- | -- | 0.2 U | 0.2 U | 0.2 U | **0.4** | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| m,p-Xylenes | -- | -- | **0.4** | **6.4** | **7.1** | 0.4 U | 0.4 U | 0.4 U | **0.5** | **0.5** |
| o-Xylene | -- | -- | **0.2** | 0.2 U | **0.9** | 0.2 U | 0.2 U | 0.2 U | **0.3** | **0.3** |

Qualifiers:

N normal field sample
FD field duplicate
J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but not detected above the sample reporting limit.
Denotes criteria exceedance
* Exceeds chronic criteria
# Exceeds acute criteria
**Bold** Denotes detections

Notes:

-- No numerical criterion of this type for this chemical
NA Sample not analyzed for this chemical
mg/L milligrams per liter
µg/L micrograms per liter

# ATTACHMENT 1