9. DETAILED FINDINGS REPORT – HUBBELL PROCESSING AREA

This Section summarizes the results and the subsequent findings derived from implementation of the sampling and analysis plan (SAP) in the Hubbell Processing Area. The narrative follows the systematic investigative approach outlined in **Section 3**, while providing specific details about the study area and the potential human health and ecological risks associated with the historical mining operations in the area.

9.1 SITE INSPECTION AND INVESTIGATION RESULTS

The implementation of the site inspection and investigation activities provides critical lines of evidence that link the historical documentation and the current environmental conditions in and around Torch Lake. The following subsections present the findings of the inspection and investigation activities and provide correlation of mining era operations and their potential impacts on the nearshore and offshore environment of Torch Lake.

9.1.1 Site Inspection

The site inspection at the Hubbell Processing Area included the inventory and locating of historical structures and similar surficial artifacts associated with the former industrial operations in the area. The study area was also inspected for potential physical and health hazards which were documented, photographed, and located with a global positioning system (GPS) unit. The inventoried hazards were then qualitatively assessed for potential human health and environmental risks to determine if analytical sampling was warranted during the targeted inspection phase of the work.

Between 6 and 7 October 2014 and on 20 August 2015, a field team comprised of Weston Solutions of Michigan, Inc. (WESTON®) and Michigan Department of Environmental Quality (MDEQ) personnel performed reconnaissance activities at the majority of the properties in the Hubbell Processing Area. The former smelter property was inspected on 19 August 2014 during intrusive investigative work to minimize access disturbances at the secured facility. In the cases where access was not requested based on historic operational and investigative findings, property

conditions were evaluated from a neighboring property or public right of way where access was permitted.

Sixteen properties or grouped parcels were visually inspected and observations were recorded. The following provides a summary of the findings associated with the reconnaissance activities.

Hubbell Processing Area – Reconnaissance Summary	
Potential Chemical or Physical Hazards	**Recorded Observations**
Suspect Asbestos Containing Material (SACM)	Multiple pieces of SACM in various sizes and quantities, including asphaltic roofing material, transite, cementitious material, fibrous debris, fire brick, pipe wrap, and similar materials were observed on the mineral building and coal dock properties.
Residual Process Materials (RPM)	Residual process materials (RPM), including suspect cable and wire wrap, burnt debris, coal, solidified wastes, and stack sludge were observed on the coal dock and mineral building properties within the Hubbell Processing Area. An approximate 30 cubic yard pile of suspect limestone was observed on the coal dock property.
Potentially Abandoned Containers	Multiple abandoned containers, generally consisting of steel intact and dilapidated drums suspected to be associated with mining era operations were observed on the coal dock property and along the shoreline near the smelter property.
Soil Staining/Stressed Vegetation	Although specific areas of stained soil were not observed, the majority of the coal dock, mineral building, and smelter properties are non-vegetated, featuring either, gravel, coal, or burnt debris covering the ground surface. The residential properties in the area generally feature vegetation as a primary cover. Some properties feature imported sand beaches.
Potential Polychlorinated Biphenyl (PCB) or Mercury Containing Equipment	One suspect mercury containing piece of equipment was observed. Although, no potential PCB containing equipment was observed, suspect PCB containing wire wrap and sheathing was observed on the coal dock and mineral building properties.
Other: Household Waste and Structural Voids	Household waste, including building materials, insulating materials, and similar wastes were observed on the coal dock and mineral building properties. Multiple debris piles, suspected to be comprised of mining era debris and building materials, SACM, soil, asphalt, and other wastes are located on the mineral building property. Voids were noted under foundations located on the smelter property, mineral building, and coal dock properties.

Numerous significant hazards were identified in the Hubbell Processing Area during the reconnaissance activities. The smelter property is an operating facility that has incorporated mining era buildings into their operations. The majority of the property has been capped during previous remedial activities and/or property improvements, including both capped and vegetated areas, primarily along the shoreline as well as graded areas with gravel cover. The mineral building and

coal dock properties, however, are generally unimproved and feature widespread disposition of coal, debris piles, and what appears to be burnt debris and residues from salvage/copper recovery operations. The source of the debris piles is unclear, many included debris and materials that appear to be mining era; however, other piles include more modern household debris and building wastes. Other items of concern on the mineral building and coal dock properties include abandoned drums, some of which are partially buried. Others are rusting carcasses, some filled with solidified or granular waste, that are distributed across the properties. Further, these debris piles and abandoned containers are exposed to weathering and potential migration via storm water runoff and wind dispersion. Several erosion channels observed across the coal dock property, discharge to Torch Lake via eroded portions of the former coal dock bulkhead. In addition, several locations on all of the properties feature structural voids in foundations and floors at or above grade in mining era building footprints. Abandoned drums and carcasses are also prevalent along the shoreline, partially submerged at the shoreline, and protruding from beneath the U.S. Environmental Protection Agency (EPA)-capped and vegetated area on the smelter property. Field logs documenting reconnaissance observations are included in **Appendix D** of the Site Investigation (SI) Report.

9.1.1.1 Targeted Inspection

The qualitative assessment of the reconnaissance findings in the Hubbell Processing Area warranted the performance of targeted inspection activities. Between 20 and 21 October 2014, and on 20 August 2015 a WESTON field team conducted targeted inspection activities at the Hubbell Processing Area that included the collection of bulk material samples, waste piles samples, residual process material samples, and soil samples. The following subsections summarize the findings of these sampling efforts.

9.1.1.1.1 Bulk Material Sampling

Based on the SACM hazards noted during the reconnaissance activities a limited asbestos survey was conducted as part of the SI to identify suspect potentially friable asbestos containing materials (ACMs) located on the mineral building and coal dock properties. The asbestos survey was limited to SACMs in open areas of the property, including the outside of buildings, within debris piles, and atop the foundations and floors of demolished mining era structures. The sampling approach

used when conducting a traditional asbestos survey is based upon the building's functional spaces and homogeneous areas of intact building materials. These regulatory criteria determine the quantity and location of bulk samples to be collected. Since the asbestos survey at the mineral building and coal dock properties was limited to non-intact debris, the traditional asbestos sampling approach could not be directly applied. Although the SACMs were not intact, the quantity of bulk samples collected per similar types of building materials were consistent with the sampling requirements defined in 40 Code of Federal Regulations (CFR) 763.83 "Sampling".

Between 14 and 15 October 2014, a total of 68 bulk samples were collected from 31 different SACMs. Six bulk samples were collected by the EPA during a visit to the Hubbell Processing Area from six different SACMs on 31 July 2014. ACM identified on properties within the Hubbell Processing Area are summarized as follows:

- Whitish gray transite fragments (CHLL-ASBBLK05) that are damaged and friable, located on the surface of a debris pile southwest of the mineral building on the mineral building property;
- Black asphaltic roofing material (CHLL-ASBBLK06) that is damaged and friable, commingled with stack debris on the south side of the mineral building on the mineral building property;
- Two types of gray transite (CHLL-ASBBLK07 and CHLL-ASBBLK09) and asphaltic roofing materials (CHLL-ASBBLK08) that are damaged and friable, located on the former substation foundation on the coal dock property;
- Transite fragments (CHLL-ASBBLK19) that are damaged and friable, located near a former structure foundation in the south central portion of the coal dock property;
- White, oily, fibrous rope like material (CHLL-ASBBLK22), suspected to be wire or cable wrap located in south central portion of the coal dock property;
- Black mesh wire or cable wrap (CHLL-ASBBLK24) of a different composition and located approximately 250 ft east of the sample in the preceding bullet. The material is friable and damaged;
- Transite fragments (CHLL-ASBBLK26) that are damaged and friable, located on the surface of debris piles in the north central portion of the coal dock property;
- Black tar-like coating on concrete stack components (CHLL-ASBBLK31) that is damaged and friable, located on the south side of the mineral building on the mineral building property;

- Black asphaltic roofing material (CHLL-ASBBLK32) that is damaged and friable, located on the east side of the mineral building on the mineral building property; and,
- A white fibrous mat material, coated with a dense black exterior (CHLL-ASBBLK37), suspected to be wire or cable wrap located in south central portion of the coal dock property, that is friable and damaged.

The samples were analyzed in accordance with EPA Method 600/R-93/116, "Method for the Determination of Asbestos in Bulk Building Materials" using Polarized Light Microscopy (PLM). This laboratory analytical method identifies the presence and estimated concentration of asbestos fibers in sampled building materials. A detailed summary of bulk asbestos sample analytical results collected from the Hubbell Processing Area during the targeted inspection are provided in **Table 9-1**.

9.1.1.1.2 Soil and Waste Sampling

In addition to the collection of bulk material samples, several samples from soil and waste deposits in the Hubbell Processing Area were also collected during the targeted inspection activities. On 21 October 2014 and 20 August 2015, a WESTON sampling team collected samples from the following locations to assess whether damaged SACM, identified waste deposits, and debris piles contained contaminants of concern (COCs) that may be migrating to surface soils and Torch Lake.

The following soil and waste material samples were collected during the targeted inspection in the Hubbell Processing Area:

- Surface soil samples (CHLL-SS01 through CHLL-SS03) were collected from eroded areas along the eastern limits of the coal dock property. Several locations along the west side of the coal dock bulkhead had observed eroded surface area where surface water runoff appeared to pool and become channelized and diverted under or around the bulkhead. Surface soil samples were collected from the channels to ascertain whether COCs in surface soils at the properties were being transported by stormwater runoff to Torch Lake.
- Surface soil samples (CHLL-SS04 through CHLL-SS09) were collected from the vicinity of SACM to determine whether suspect damaged and friable bulk materials were being transported by wind and surface water erosion on the properties. Asbestos fibers were not detected in any of the samples.

- Surface soil samples (CHLL-SS14 through CHLL-SS15) were collected from the vicinity of abandoned drums protruding from the Torch Lake shoreline near the smelter property to ascertain whether COCs in surface soils at the property were being transported by stormwater runoff to Torch Lake.

- Residual process materials, wastes and byproducts believed to have been discarded in-place following facility operations, were sampled to assess whether these materials contained COCS at concentrations that could leach or migrate to surface water or groundwater at the properties. Residual process material samples (CHLL-RPM01 through CHLL-RPM04) contained concentrations of Total PCBs and other COCs that exceeded applicable regulatory criteria.

- Similar to the aforementioned residual process materials, five-point composite soil samples were collected from debris piles located on the properties. Composite soil samples were collected to ensure that a representative sample of similar debris piles was collected. Debris pile samples (CHLL-WP01 through CHLL-WP03) were collected from the mineral building property. The samples contained COCs that exceeded applicable regulatory criteria. Cyanide, volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in samples collected from waste pile CHLL-WP03 contained concentrations that exceeded applicable regulatory criteria. Total PCBs detected in two waste pile samples (CHLL-WP01 and CHLL-WP03) contained PCBs that exceeded applicable regulatory criteria.

- Three samples, two grab samples (CHLL-DM01 and CHLL-DM02) and one composite sample (CHLL-DMWC) were collected from the contents of two dilapidated drums located on the coal dock property. The grab samples were collected in August 2014 and analyzed for a variety of COCs. Concentrations of COCs in the grab samples prompted the collection of a composite sample in October 2014 to determine if the contents of the drums were characteristically hazardous. The contents of the drums were determined to be characteristically hazardous for lead.

- Two grab samples (CHLL-DM03 and CHLL-DM04) were collected from the contents of partially buried abandoned drums protruding from the EPA cap near the Torch Lake shoreline adjacent to the smelter property. The grab samples were analyzed for a variety of COCs. Concentrations of inorganic COCs and cyanide exceeded multiple applicable cleanup criteria, and the CHLL-DM03 sample contained Total PCBs in excess of Direct Contact Criteria (DCC) for the residential and non-residential exposure pathways.

The soil, residual process materials, and debris pile sampling locations collected during the targeted inspection activities are depicted on **Figure 9-1a**, **Figure 9-1b**, and **Figure 9-1c**. Investigative methodologies and soil sampling techniques were conducted using the procedures outlined in **Section 3**.

A detailed summary of soil, residual process material, waste pile analytical results collected from the Hubbell Processing Area during the targeted inspection are provided in **Table 9-2**. Bulk asbestos, residual process material, waste pile and container sample analytical results are depicted on **Figure 9-2**. Soil analytical results from the Hubbell Processing Area are depicted on **Figure 9-3a**, **Figure 9-3b**, and **Figure 9-3c**. Sample analytical results for the waste characterization sample (CHLL-DMWC) are summarized in **Table 9-3**.

9.1.2 Site Investigation

The SI at the Hubbell Processing Area was developed based on a variety of data and information as outlined in **Section 3**. In addition to the historical accounts and documentation, current land use and potential exposure pathways were also taken into consideration when selecting the sampling locations specific to the Hubbell Processing Area. The following subsections present the outcomes of investigative activities completed in the area by summarizing the laboratory analytical results and characterizing their impacts on the environmental media in which they were detected.

9.1.2.1 Terrestrial Investigation

Intrusive investigation activities in the Hubbell Processing Area were generally guided by the findings of historical research and field observations. From a historical standpoint, the area housed several components of the Calumet and Hecla's (C&H's) mineral processing operations, including the mineral building which was used to store ore and copper concentrate, and the smelter operations that refined the processed materials. In addition, the central repository for C&H's coal supply, including massive docks, offloading equipment, and coal storage facilities were also located within Hubbell Processing Area. Inorganic COCs in the study area were generally well understood, particularly on the former smelter property where previous investigations and remedial actions have been completed. Limited data related to the COCs on the coal dock property existed. Previous investigative activities on these properties did not fully characterize contaminants in soil and groundwater, specifically as they relate to PCBs. The following subsections present a summary of the field observations and analytical results derived from the terrestrial sampling activities.

9.1.2.1.1 Field Observations – Soil and Groundwater

Borings in the Hubbell Processing Area were advanced to depths between 14 and 15 feet (ft) below the ground surface (bgs). Boring locations are depicted on **Figure 9-1a**, **Figure 9-1b**, and **Figure 9-1c**. Soil observations documented on field logs indicate that the subsurface is primarily comprised of medium grained sands, ranging from brown to gray to reddish brown in color. Two boring locations (CHLL-SB36 and CHLL-SB37) also contained coal in soil intervals down to 4 ft. In addition, the upper foot of soils in borings CHLL-SB30 and CHLL-SB35 were comprised of fill material.

During groundwater sampling, temporary well points were generally established between 10 ft and 15 ft bgs. Saturated soil conditions were generally encountered between depths of 4 ft and 5 ft. Groundwater quality parameters, including temperature, conductivity, dissolved oxygen (DO) and pH, measured at the time of sample collection were generally considered normal. DO measurements were greater than 40% in five of the sample locations with a maximum concentration of 89%. Elevated DO concentrations are typically indicative of low bio-activity, indicating that oxygen is not being consumed by aerobic organisms in the subsurface. These conditions may persist in the study area due to the presence of stamp sands deposits along the shoreline of Torch Lake. Alternatively, the presence of other volatile chemicals in soil or groundwater and inconsistencies in sample collection could also cause interference within the instrument, causing inaccurate or false measurements. Additional evaluation would be required to determine if these results are indicators of variability in sample collection or the presence of chemical interference.

9.1.2.1.2 Soil Sampling Results

Terrestrial investigation activities were completed in the Hubbell Processing Area during four mobilizations. The first round of investigative work was completed between 11 and 13 June 2014, the second was completed between 19 and 20 August 2014, the third on 12 May 2015, and the fourth on 19 August 2015. Between the four mobilizations, a total of 137 soil samples and 11 duplicate soil samples were collected from 90 boring locations.

During the June 2014 mobilization 13 deep soil borings were advanced to characterize COCs in surficial and deep soils in the Hubbell Processing Area. Detections of PCBs, primarily in surficial soil samples, prompted the development of a grid-based sampling strategy to further characterize the area of PCB detections identified during the June mobilization. As a result, a 48-point sampling grid (CHLL-SB58 through CHLL-SB106), split between two properties was established during the August 2014 mobilization to further evaluate the extent of PCB-impact, but also to assess the potential for additional areas that were not identified through biased sampling activities conducted during the June mobilization. During 2015 nineteen additional borings were installed with multi-interval sampling to further evaluate the nature and extent of PCB-impacted soils.

Soil sampling locations from the mobilizations are depicted on **Figure 9-1a**, **Figure 9-1b**, and **Figure 9-1c**. Investigative methodologies and soil sampling techniques were conducted using the procedures outlined in **Section 3**.

With the exception of five sampling locations (CHLL-SB137, CHLL-SB138, CHLL-SB139, CHLL-SB140, and CHLL-SB141) where inorganic COCs were the primary concern, all shallow and subsurface soil samples collected from the Hubbell Processing Area were analyzed for PCBs. Select samples were also analyzed for other COCs including cyanide, inorganics, VOCs, and SVOCs. The selection of analytical parameters was generally based upon potential environmental impacts associated with mining era operations in the vicinity of the sampling location or field observations.

The surficial and subsurface soil analytical results for the Hubbell Processing Area contained a variety of inorganic COCs at concentrations at or above applicable regulatory criteria. VOCs and SVOCs were detected in several surface soil samples collected during the SI, but the measured concentrations of COCs did not exceed applicable regulatory criteria. Cyanide exceeded applicable regulatory criteria in two subsurface soil samples (CHLL-SB28 and SB-32). Total PCBs were detected in 49 samples collected from surficial soil and subsurface soil collected from the Hubbell Processing Area during the SI. Of those samples containing detections, 15 surficial soil samples contained PCBs that exceeded applicable regulatory criteria.

A detailed summary of soil analytical results collected from the Hubbell Processing Area are provided in **Table 9-2**. Soil analytical results from the Hubbell Processing Area are depicted on **Figure 9-3a**, **Figure 9-3b**, and **Figure 9-3c**. X-ray fluorescence (XRF) soil screening results from the Hubbell Processing Area are depicted on **Figure 9-4a** and **Figure 9-4b**. Soil boring logs are included in **Appendix G** of the SI Report.

9.1.2.1.3 Groundwater Sampling Results

During the installation of soil borings in the Hubbell Processing Area 17 temporary groundwater sampling locations were established to characterize groundwater in the area. The monitoring wells were installed and sampled using the methodologies presented in **Section 3**. The screened intervals in the groundwater sampling locations were established between 8 ft and 17 ft bgs.

In addition to temporary sampling locations, 15 permanent monitoring wells located on the smelter property were also sampled. The permanent monitoring wells were typically "nested" and included shallow, intermediate, and deep screen intervals. The permanent monitoring wells included both 5 ft and 10 ft screen intervals that were generally located between the following depths:

- Shallow – 3 ft to 15 ft bgs;
- Intermediate – 24 ft to 30 ft bgs; and,
- Deep – 49 ft to 54 ft bgs.

A total of 32 groundwater samples and four duplicate samples were collected from the Hubbell Processing Area. Temporary groundwater sampling locations and permanent monitoring well locations are depicted on **Figure 9-1a**, **Figure 9-1b**, and **Figure 9-1c**.

All groundwater samples were analyzed for PCBs. Select samples were also analyzed for other COCs including VOCs, SVOCs, inorganic, chloride, and sulfate. Total PCBs were detected in two samples collected during the SI. Only one sample (CHLL-GW23) contained Total PCBs above applicable regulatory criteria. No other COCs were detected at concentrations above applicable regulatory criteria.

A detailed summary of groundwater analytical results collected from the Hubbell Processing Area are provided in **Table 9-4**. Groundwater analytical results from the Hubbell Processing Area are depicted on **Figure 9-5**. Soil boring logs are included in **Appendix G** of the SI Report.

9.1.2.2 Offshore Investigation

Similar to the terrestrial investigation, the proposed offshore investigation activities for the Hubbell Processing Area were also guided by several factors. First, historical analytical data was evaluated to determine if adequate characterization data was available in the study area to assess the overall sediment and surface water quality in the nearshore environment. In addition, underwater surveillance of the area, as described in **Section 3**, was used to locate and assess potential offshore waste deposits. Lastly, field observations, both terrestrial and offshore, were used to position sampling locations.

The findings derived from side-scan sonar conducted along the shoreline in the Hubbell Processing Area, as well as historical documentation, identified a high concentration of potential targets along the lake bottom. Visual inspection of these anomalies using underwater surveillance confirmed that abandoned drums, metal debris, circuit board waste, and similar materials were deposited on the lake bottom. Sampling locations defined in the SAP were modified to ensure that offshore samples were collected in the vicinity of the submerged disposal areas. Offshore sediment and surface water samples were collected from the Hubbell Processing Area. The following subsections present a summary of the analytical results derived from offshore sampling activities in the Hubbell Processing Area.

9.1.2.2.1 Sediment Sampling Results

Offshore investigation activities were completed in the Hubbell Processing Area during five mobilizations. The first round of investigative work was completed on 14 June 2014, the second followed over a period of several days between 8 and 15 July 2014, the third on 1 June 2015, the fourth between 8 and 11 July 2015, and the fifth on 20 August 2015. Between the five mobilizations, a total of 69 sediment samples and nine duplicate sediment samples were collected from 26 sampling locations. Sediment sampling locations are depicted on **Figure 9-1a**,

Figure 9-1b, and **Figure 9-1c**. Investigative methodologies and sediment sampling techniques were conducted using the procedures outlined in **Section 3**.

Sediment sampling locations included 26 surficial sediment samples, ranging from 0 to 6 inches (in.). in depth. The investigation also included the collection of 43 deeper sediment samples ranging from 1 ft to 5 ft in depth. All samples were analyzed for PCBs. A subset of sediment samples were selected for inorganic, VOC, SVOC, and cyanide analyses.

The analytical results for sediment samples collected during the SI indicated multiple inorganic COCs at concentrations that exceeded applicable regulatory criteria. Total PCBs were detected in 10 surficial sediment samples collected from the Hubbell Processing Area that exceeded applicable regulatory criteria.

A detailed summary of sediment analytical results collected from the Hubbell Processing Area are provided in **Table 9-5**. Sediment analytical results from the Hubbell Processing Area are depicted on **Figure 9-6a**, **Figure 9-6b**, and **Figure 9-6c**. Sediment core logs are included in **Appendix H** of the SI Report.

9.1.2.2.2 Surface Water Sampling Results

Surface water sampling activities were also completed on 1 June 2015, between 8 and 9 July 2015, and on 20 August 2015. A total of six surface water samples plus one duplicate sample, ranging from 4 to 76 ft in depth, were collected from six sampling locations. Investigative methodologies and surface water sampling techniques were conducted using the procedures outlined in **Section 3**. All samples were analyzed for PCBs, and a subset of the samples was analyzed for VOCs, SVOCs, and inorganics.

Total PCBs and inorganics were detected in surface water sample CHLL-SW12 which was collected near a partially submerged drum at the shoreline adjacent to the smelter property. No other COCs were detected in surface water samples collected from the Hubbell Processing Area during the SI.

Two previous surface water sampling locations (SW-04 and SW-05) were located in the area. The surface water samples were analyzed for Total PCBs, VOCs, and SVOCs. One sample (SW-04) was also analyzed for inorganic constituents. Total PCBs were not detected in the surface water samples; however, VOCs, SVOCs, and inorganic COCs were detected. Only one SVOC constituent exceeded applicable regulatory criteria.

Surface water sampling locations located in the Hubbell Processing Area are depicted on **Figure 9-1a**, **Figure 9-1b**, and **Figure 9-1c**. Analytical results for the surface water sampling locations in the Hubbell Processing Area are presented in **Table 9-6**. Surface water analytical results for the Hubbell Processing Area are depicted on **Figure 9-6a** and **Figure 9-6c**. Surface water field information is included on the corresponding sediment core logs in **Appendix H** of the SI Report.

9.2 NATURE AND EXTENT OF CONTAMINATION

Utilizing the established regulatory criteria presented in **Section 4** for various land use categories and exposure pathways, the laboratory analytical results summarized in the preceding section for the Hubbell Processing Area were reviewed and compared to the following regulatory criteria as applicable for the sampled environmental media:

- MDEQ Cleanup Criteria Requirements for Response Activity;
- MDEQ – Rule 57 Water Quality Values;
- EPA Ecological Screening Levels (ESLs); and,
- Sediment Quality Guidelines, Threshold Effect Concentrations (TECs) and Probable Effect Concentrations (PECs), MacDonald, et al, 2000.

9.2.1 Comprehensive Exposure Assessment

The comparison was completed to determine which ecological and human exposure pathways, risks, and conditions are relevant in the Hubbell Processing Area. Although not inclusive of relevant pathways where regulatory criteria were not exceeded, the following exposure pathways were determined to be relevant in the Hubbell Processing Area:

- Risks due to hazardous substances when considering acute toxic effects, physical hazards, and other hazards not accounted for in the development of generic cleanup regulatory criteria.

- Risks posed by hazardous substances in waste, residual process materials, and abandoned containers that may result from the direct transport or runoff of hazardous substances into soil, groundwater, and surface water.

- Risks posed by hazardous substances in debris piles.

- Risks posed by hazardous substances inside buildings or former building substrates.

- Risks posed by hazardous substances that are covered or capped with soil and or a vegetative cover.

- Risks posed by hazardous substances in surface soil that may result from the direct transport or runoff of hazardous substances in soil into surface water.

- Risks posed by hazardous substances in soil and the potential for the substances to leach to groundwater that could be used as a drinking water source in both residential and nonresidential settings.

- Risks posed by hazardous substances in soil and the potential for the substances to leach to groundwater that could vent to surface water.

- Risks posed by hazardous substances in soil and the potential for the substances to be inhaled if they are emitted as particulates and dispersed in ambient air in in both residential and nonresidential settings.

- Risks posed by hazardous substances in soil and the potential for direct contact with these soils in both residential and nonresidential settings.

- Risks posed by hazardous substances in soil that may result in the volatilization of contaminants to ambient air in both residential and nonresidential settings.

- Risks posed by hazardous substances in groundwater and the potential for that groundwater to be used as a drinking water source in both residential and nonresidential settings.

- Risks posed by hazardous substances in groundwater and the potential for that groundwater to vent to surface water.

- Risks posed by hazardous substances in sediments that have the potential to have toxic effects on aquatic biota and/or enter the food chain.

As discussed in **Section 4.2.5, t**he MDEQ drinking water/surface water pathway criteria exceedances for metals were excluded from the soil and groundwater evaluation. The rationale for this exclusion is twofold:

- The Project investigation and anticipated response actions are being undertaken pursuant to Part 201 of Michigan's Natural Resources and Environmental Protection Act (NREPA), being Public Act (PA) 451 of 1994, as amended. The concentrations of metals in excess of the MDEQ drinking water/surface water pathway criteria are ubiquitous in the study area and are predominantly the result of the presence of stamp sands. Stamp sands are not defined as a hazardous substance nor are subject to regulation under Part 201 unless the property otherwise contains hazardous substances in excess of concentrations that satisfy the cleanup criteria for unrestricted residential use; and,

- The study area is part of Operable Unit (OU) 2 for which the EPA Record of Decision (ROD) remedy called for No Action. The EPA's ROD OU 2 includes groundwater, surface water, submerged tailings and sediments in Torch Lake, Portage Lake, the Portage Canal, and other area water bodies. Note that EPA's No Action determination relies on the following to mitigate the effects of stamp sand to the extent practicable:

  – The reduction of stamp sand loading to surface water bodies expected as a result of the remedial action taken at OU 1 and OU 3.

  – Ongoing natural sedimentation and detoxification.

  – Institutional programs and practices controlling potential future exposure to site-affected drinking water which were intended to be administered at the county and state level.

  – The long-term monitoring and the five year review process monitoring requirements of the remedy selected for OU 1 and OU 3 under the 1992 ROD.

Note that metals criteria for other relevant pathways, and cyanide and organic contaminants for all pathways were included in the evaluation.

9.2.1.1 Building Materials, Containers, and Wastes

During the targeted inspection activities completed in the Hubbell Processing Area, eleven different ACMs were identified in samples collected from damaged and friable building materials. In addition, representative samples of residual process materials, drum contents, and waste piles were also analyzed to evaluate potential human health and environmental risks posed by these wastes and abandoned containers.

The following tables provide an aggregate summary of the sample locations with respect to the total number of samples and how they compare to applicable regulatory criteria. The tables are based solely on the total number of samples, inclusive of historical samples, collected from the Hubbell Processing Area. They list only the number of samples for a specific analytical suite that contained one or more exceedance of a given criterion. Samples collected from residual process materials, drum contents, and waste piles were compared to applicable soil criteria, while bulk asbestos samples were compared to applicable National Emissions Standard for Hazardous Air Pollutants (NESHAP) standards.

Building Materials, Containers, Residual Process Materials, and Waste Pile Soil Analytical Result Summary	**Cleanup Criteria Requirements for Response Activity – Residential**											
	Analytical Summary			Groundwater Protection		Indoor Air	Ambient Air (Y) (C)				Contact	Csat
	Total Number of Samples	Detected Analytes	Total Exceedances	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Inorganics	7	84	21	0	0	0	0	0	0	**3**	**7**	0
Cyanide	7	2	2	0	**2**	0	0	0	0	0	0	0
VOCs	5	19	4	**1**	**1**	0	0	0	0	0	0	0
SVOCs	7	23	3	0	**2**	0	0	0	0	0	0	0
Asbestos	4	1	0	0	0	0	0	0	0	0	0	0
Total PCBs	11	11	6	0	0	0	**1**	0	0	0	**6**	0
COCs exceeding applicable regulatory criteria in one or more samples	Antimony, Arsenic, Copper, Cyanide, Iron, Lead, 1,2,4-Trimethylbenzene, Benzene, Naphthalene, Total Xylenes, Fluoranthene, Phenanthrene, Total PCBs											

Building Materials, Containers, Residual Process Materials, and Waste Pile Soil Analytical Result Summary	Analytical Summary			**Cleanup Criteria Requirements for Response Activity – Nonresidential**								
				Groundwater Protection		Indoor Air	Ambient Air (Y) (C)				Contact	Csat
	Total Number of Samples	Detected Analytes	Total Exceedances	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Inorganics	7	84	16	0	0	0	0	0	0	**3**	**7**	0
Cyanide	7	2	2	0	**2**	0	0	0	0	0	0	0
VOCs	5	19	4	**1**	**1**	0	0	0	0	0	0	0
SVOCs	7	23	3	0	**2**	0	0	0	0	0	0	0
Asbestos	4	1	0	0	0	0	0	0	0	0	0	0
Total PCBs	11	11	6	0	0	0	**1**	0	0	0	**6**	0
COCs exceeding applicable regulatory criteria in one or more sample				Antimony, Arsenic, Copper, Cyanide, Lead, 1,2,4-Trimethylbenzene, Benzene, Naphthalene, Total Xylenes, Fluoranthene, Phenanthrene, Total PCBs								

Building Materials, Containers, and Wastes Analytical Result Summary	Analytical Summary			EPA	National Emissions Standard for Hazardous Air Pollutants			
	Total Number of Samples	Detected Analytes	Total Exceedances	Identification and Listing of Hazardous Waste Criteria (40 Code of Federal Regulations, Part 261, Subpart C)	Friable Asbestos Material	Category I Nonfriable ACM	Category II Nonfriable ACM	Asbestos-Containing Waste Materials
Asbestos (Bulk)	74	27	26	0	**26**	0	0	0
Waste Disposal Characterization	1	7	1	**1**	0	0	0	0
COCs exceeding applicable regulatory criteria in one or more sample				Asbestos				

9.2.1.2 Soil Exposure Pathway Assessment

Soil analytical results from the Hubbell Processing Area included COC concentrations in soil that were at or above concentrations that trigger a "facility" designation as defined in Section 20101(1)(s) of the NREPA.

The following tables provide an aggregate summary of the soil sample locations with respect to the total number of samples and how they compare to the applicable MDEQ's Cleanup Criteria for Response Activity under both Residential and Nonresidential exposure scenarios. The tables are based solely on the total number of samples, inclusive of historical samples, collected from the Hubbell Processing Area. They list only the number of samples for a specific analytical suite that contained one or more exceedance of a given criterion.

				Cleanup Criteria Requirements for Response Activity – Residential								
	Analytical Summary			Groundwater Protection		Indoor Air	Ambient Air (Y) (C)				Contact	Csat
Soil Analytical Result Summary Table	Total Number of Samples	Detected Analytes	Total Exceedances	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Inorganics	49	668	59	0	0	0	0	0	0	**4**	**35**	0
Cyanide	47	9	9	0	**9**	0	0	0	0	0	0	0
VOCs	8	8	0	0	0	0	0	0	0	0	0	0
SVOCs	23	111	6	0	**4**	0	0	0	0	0	**1**	0
Asbestos	8	0	0	0	0	0	0	0	0	0	0	0
Total PCBs	165	61	16	0	0	0	0	0	0	0	**16**	0
COCs exceeding applicable regulatory criteria in one or more samples				Arsenic, Copper, Cyanide, Lead, Benzo(a)Pyrene, Fluoranthene, Hexachlorobenzene, Phenanthrene, Total PCBs								

Soil Analytical Result Summary Table	Analytical Summary			Cleanup Criteria Requirements for Response Activity – Nonresidential								
				Groundwater Protection		Indoor Air	Ambient Air (Y) (C)				Contact	Csat
	Total Number of Samples	Detected Analytes	Total Exceedances	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Particulate Soil Inhalation Criteria	Direct Contact Criteria	Soil Saturation Concentration Screening Levels
Inorganics	49	668	28	0	0	0	0	0	0	**4**	**18**	0
Cyanide	47	9	9	0	**9**	0	0	0	0	0	0	0
VOCs	8	8	0	0	0	0	0	0	0	0	0	0
SVOCs	23	111	5	0	**4**	0	0	0	0	0	0	0
Asbestos	8	0	0	0	0	0	0	0	0	0	0	0
Total PCBs	165	61	16	0	0	0	0	0	0	0	**16**	0
COCs exceeding applicable regulatory criteria in one or more sample				Arsenic, Copper, Cyanide, Lead, Fluoranthene, Hexachlorobenzene, Phenanthrene, Total PCBs								

9.2.1.3 Groundwater Exposure Pathway Assessment

Groundwater analytical results from the Hubbell Processing Area included COC concentrations in groundwater that were at or above concentrations that trigger a facility designation as defined in Section 20101(1) (s) of the NREPA.

Groundwater analytical results from the Hubbell Processing Area included COC concentrations that were at or above concentrations that pose potential risks to human health and the environment. Similar to the preceding soil tables, the following table provides summary of the aforementioned sample locations with respect to the total number of samples and how they compare to the applicable MDEQ's Cleanup Criteria for Response Activity under both Residential and Nonresidential exposure scenarios.

Groundwater Analytical Result Summary Table	Analytical Summary			**Cleanup Criteria Requirements for Response Activity – Residential and Nonresidential**						
	Total Number of Samples	Total Number of Detected Analytes	Total Exceedances	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria	Water Solubility	Flammability and Explosivity Screening Levels
Inorganics	12	119	0	**0**	**0**	**0**	0	0	0	0
Cyanide	4	1	0	0	0	0	0	0	0	0
VOCs	4	1	0	0	0	0	0	0	0	0
SVOCs	13	1	0	0	0	0	0	0	0	0
Total PCBs	36	3	1	**1**	**1**	**1**	0	0	0	0
Other – General Chemistry	2	10	0	0	0	0	0	0	0	0
COCs exceeding applicable regulatory criteria in one or more sample				Total PCBs						

9.2.1.4 Sediment Exposure Pathway Assessment

Sediment analytical results from the Hubbell Processing Area included COC concentrations that were at or above concentrations that pose potential risks to sediment dwelling species, and consequently the food chain. The following table provides a summary of the sample locations located in the Hubbell Processing Area. The table lists only the number of samples for a specific analytical suite that contained one or more exceedance of a given criterion.

Sediment Analytical Result Summary	Analytical Summary			EPA, Region 5, Resource Conservation and Recovery Act	Consensus Based Sediment Quality Guidelines	
	Total Number of Samples	Detected Analytes	Total Exceedances	Ecological Screening Levels	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)
Inorganics	51	556	332	**51**	**51**	**50**
Cyanide	8	2	2	**2**	0	0
VOCs	2	0	0	0	0	0
SVOCs	14	22	18	**2**	**2**	**1**
Total PCBs	132	24	23	**23**	**23**	**7**
COCs exceeding applicable regulatory criteria in one or more sample				Arsenic, Cadmium, Chromium, Cobalt, Copper, Cyanide, Lead, Mercury, Nickel, Silver, Zinc, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(g,h,i)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)Pyrene, Naphthalene, Phenanthrene, Pyrene, Total PCBs		

9.2.1.5 Surface Water Exposure Pathway Assessment

The surface water analytical results from the Hubbell Processing Area included COC concentrations that were at or above concentrations that pose potential risks to sediment and water column dwelling species, the food chain, and consequently human health through fish consumption. The following table provides a summary of the sample locations located in the Hubbell Processing Area. The table lists only the number of samples for a specific analytical suite that contained one or more exceedance of a given criterion.

Surface Water Analytical Result Summary	Analytical Summary			EPA, Region 5, Resource Conservation and Recovery Act	Surface Water - Rule 57		
	Total Number of Samples	Detected Analytes	Total Exceedances	Ecological Screening Levels	Human Non-Cancer Value	Human Cancer Value	Wildlife Value
Inorganics	2	19	11	**1**	**1**	**1**	**1**
Cyanide	0	0	0	0	0	0	0
VOCs	3	1	0	0	0	0	0
SVOCs	4	1	1	**1**	0	0	0
Total PCBs	8	1	1	**1**	0	**1**	**1**
COCs exceeding applicable regulatory criteria in one or more sample				Antimony, Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Silver, Zinc, Bis(2-EthlyHexyl)Phthalate, Total PCBs			

9.2.2 Extent of Contamination

The comparison of analytical results to applicable regulatory criteria indicates that potential human health and ecological risks are present in building materials, containers, wastes, soil, groundwater, sediment, and surface water in the Hubbell Processing Area. Recalling that the goals and objectives of the SI, the following subsections describe the extent of contamination in environmental media in the study area.

9.2.2.1 Building Materials, Containers, and Wastes Extent of Contamination

Analytical results for various building materials, including but, not limited to asphaltic roofing material, transite, and cable wrap indicted ACM are present in the Hubbell Processing Area. These materials are widely distributed across the study area and are subject to migration via wind and

water erosion. Asbestos concentrations in 11 bulk material samples contained asbestos fibers at concentrations greater than 1 percent (%). The damaged and friable nature of these materials poses a potential risk to human health as it relates to the inhalation pathway. Although, asbestos fibers were not detected in a limited number of soil samples collected from the study area, the exposed nature of these material, makes them subject to further degradation that could potentially impact surface soils in the Hubbell Processing Area.

Two dilapidated drums that were sampled in the Hubbell Processing Area contained inorganic contaminants that exceeded Groundwater Surface Water Interface Protection Criteria (GSIPC) and Particulate Soil Inhalation Criteria (PSIC), and Direct Contact Criteria (DCC) in both of the residential and nonresidential exposure scenarios. In addition, Toxicity Characteristic Leaching Procedure (TCLP) analytical results indicated that the sampled drum contents are characteristically hazardous for lead. In addition, two grab samples were collected from the contents of partially buried abandoned drums protruding from the EPA cap near the Torch Lake shoreline adjacent to the smelter property. One or both samples contained concentrations of inorganic COCs, cyanide and SVOCs that exceeded GSIPC, and PSIC and DCC in both of the residential and nonresidential exposure scenarios. One of the samples contained Total PCBs in excess of DCC for the residential and non-residential exposure pathways.

Residual process materials that were sampled in the Hubbell Processing Area contained concentrations of Total PCBs that exceeded Infinite Source VSIC and DCC for both residential and nonresidential exposure scenarios. The sampled media, generally assumed to be discarded mining era wire or cable wrap materials, are strewn across the ground surface in the central portion of the study area, generally extending from the centerline of the study area to the shoreline of Torch Lake, or an area of an area of approximately 8 acres. These waste deposits are in contact with stormwater that flows through eroded channels in the study area that discharge directly to Torch Lake.

Sampled waste piles in the study area contained similar contaminant concentrations. Of the three sampled piles, all contained concentrations of inorganic contaminants that exceeded GSIPC, Drinking Water Protection Criteria (DWPC), and DCC for both residential and nonresidential

exposure scenarios. Analytical results from two of the waste piles contained Total PCB concentrations that exceeded DCC for both residential and nonresidential exposure scenarios. One waste pile, located approximately 200 ft from the shoreline of Torch Lake contained cyanide at a concentration that exceeded GSIPC. Lastly, one waste pile located approximately 700 ft from the shoreline of Torch Lake also contained SVOCs that exceeded GSIPC and VOCs that exceeded GSIPC and DWPC for both residential and nonresidential exposure scenarios. The waste piles which are located on the mineral building property cover approximately 5 acres, extending from the east side of the mineral building to approximately 200 ft from the shoreline of Torch Lake.

Identified ACMs in the Hubbell Processing Area present a potential health risk, particularly as it relates to the potential for these materials to degrade and migrate via wind and water erosion. The distribution of ACM in the study area is widespread and poses exposure risks via the inhalation pathway. COCs identified in residual process materials, waste piles, and abandoned containers pose similar exposure risks to the dermal contact leaching to groundwater pathways. These risks are further exacerbated by the uncontrolled nature of the debris and stockpiles, making them susceptible to direct migration to Torch Lake via identified stormwater erosion channels.

The identified risks summarized in the preceding paragraphs, pose potential threats to human and ecological receptors and are a significant factor when evaluating the extent of contamination in the Hubbell Processing Area as well as the overall health of Torch Lake.

9.2.2.2 Soil Extent of Contamination

Soil analytical results exceeded PSIC and DCC in both of the residential and nonresidential exposure scenarios for inorganic contaminants. Similarly, historical surface soil screening results also included measured inorganic contaminant concentrations that exceeded DCC and PSIC in both residential and non-residential exposure scenarios. In addition, a limited number of samples analyzed for cyanide and SVOCs exceeded GSIPC. Lastly, Total PCB concentrations in 16 samples collected from the Hubbell Processing Area exceed DCC for both residential and nonresidential exposure scenarios, including sample CHLL-SS01 collected from one of the identified stormwater erosion channels that discharge directly to Torch Lake. Detectable Total

PCB concentrations were also present in samples CHLL-SS02 and CHLL-SS03 in the identified stormwater erosion channels that discharge directly to Torch Lake.

All samples were collected from surface and subsurface soil intervals generally located within a few feet to 1,000 ft of the shoreline of Torch Lake. The samples were collected from private properties, some of which are unsecured and may be accessible by trespassers.

Soils with elevated levels of inorganic COCs are ubiquitous in the area, which becomes a limiting factor when evaluating potential exposure pathways. In the case of the Hubbell Processing Area, elevated concentrations of inorganic contaminants include exposure risks related to inhalation and dermal contact pathways, which must be a consideration when evaluating land use, property accessibility, and the extent of contamination in surface and near surface soils. These risks are further exacerbated by the potential erosion and transport of these contaminants directly to Torch Lake via identified stormwater erosion channels in the study area.

The remaining exposure risks are generally related to the leaching of contaminants to groundwater and their potential impacts on surface water. These risks pose a long-term threat to the overall environmental health of the watershed, the widespread distribution of inorganic COCs throughout the region limit determinations related to the extent of contamination in the Hubbell Processing Area. Nevertheless, risks posed to groundwater and surface water are significant and are a factor when evaluating the extent of soil contamination in the Hubbell Processing Area.

9.2.2.3 Groundwater Extent of Contamination

Groundwater analytical results for Total PCBs exceeded Drinking Water Criteria (DWC) for both residential and nonresidential exposure scenarios, and Groundwater/Surface Water Criteria (GSIC) in one groundwater sample, screened between a depth of 10 ft to 15 ft bgs and located approximately 200 ft from the shoreline of Torch Lake.

The temporary groundwater sampling locations were established in a zone roughly 100 ft to 1,000 ft to the shoreline of Torch Lake at depths of approximately 10 ft to 15 ft below the ground surface. Permanent monitoring wells in the Hubbell Processing Area are screened at varying intervals, were only analyzed for PCBs. PCB congeners were detected in two permanent monitoring wells in the

Hubbell Processing Area, but the Total PCB concentrations were below applicable regulatory criteria.

Total PCBs exceeded regulatory criteria in one groundwater sample from a temporary sampling location in the Hubbell Processing Area. The horizontal and vertical location of the groundwater sampling location suggests that PCBs in groundwater have the potential to vent to Torch Lake. It should be noted that the aforementioned permanent monitoring wells that contained PCB congener detections are located within 300 ft and side/downgradient of this temporary sampling location. The presence of PCB congeners in these groundwater sampling locations suggests that an upland source of PCBs may be present in the vicinity of the boring. A surface soil sample from the same boring did not contain detected PCB congeners.

The potential risks associated with using groundwater as a drinking water source as well as it's connectivity to nearby surface water bodies should be a consideration in determinations related to the extent of contamination in the Hubbell Processing Area.

9.2.2.4 Sediment Extent of Contamination

Sediment analytical results exceeded ESLs, TECs, and PECs for inorganic contaminants, SVOCs, and Total PCBs. Concentrations of cyanide exceeded ESLs in one sample. Sediment samples were generally collected from a zone within 100 ft to 1,500 ft of the shoreline of Torch Lake.

The potential risks associated with inorganic constituents, though prevalent in the region, should be considered when evaluating the extent of sediment contamination in the Hubbell Processing Area. The detection of SVOCs that exceed applicable regulatory criteria in two sediment samples from within 100 ft of the shoreline present a greater concern as it relates to human and ecological receptors. The SVOC exceedances were measured in sampling locations that also contained Total PCB concentrations that exceeded applicable regulatory criteria. The presence of these contaminants in the same sample may be an indicator of hydrocarbon-based contaminant source located in the nearshore environment.

The detection of Total PCBs above applicable regulatory criteria in up to 21 samples, however, present a more significant exposure risk both to benthic organisms and human health due to their

proximity to the shoreline and their potential effect on the food chain. In addition, the detection of Total PCBs in surficial sediment indicates that a substantial source of PCBs may be present in the nearshore or terrestrial environment.

9.2.2.5 Surface Water Extent of Contamination

Surface water analytical results exceeded ESLs for one SVOC constituent. The surface water sample was collected from a zone within 100 ft of the shoreline from a depth of approximately 0 to 6 in. The collocated sediment sample also contained SVOCs that exceeded applicable regulatory criteria. Total PCBs and inorganics were detected in a surface water sample collected near a partially submerged drum at the shoreline adjacent to the smelter property in concentrations that exceeded the ESL and/or the Surface Water Rule 57 drinking water and wildlife values.

The presence of SVOCs, inorganics, and Total PCBs in surface water may be an indicator of submerged or near shore source of contaminants. Similarly, surface water runoff and discharge may be negatively impacting the nearshore environment. The measured concentration of SVOCs, inorganics, and Total PCBs in surface water may be potentially detrimental to aquatic biota and human health due to its close proximity to the shoreline and should be considered when evaluating the extent of surface water contamination in the Hubbell Processing Area.

9.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results and interpretation summarized in the preceding subsections document potential human health and ecological risks that are present in the Hubbell Processing Area. The following subsections provide a synopsis of these findings and a recommended path forward for mitigating these risks in the Hubbell Processing Area.

9.3.1 Conclusions

Environmental impacts in the Hubbell Processing Area are generally characterized by detections of organic and inorganic contaminants in soil, groundwater, sediment, and surface water; repercussions of mining era operations in the region. Although, specific sources of these contaminants may not be fully understood, historical research related to the operations, closing, and eventual abandonment/scrapping of mining company operations provided substantive

evidence for assessing specific operational areas and selecting target analytes anticipated to be present within the study area. The findings of these investigative activities are summarized as follows:

- Asbestos analytical results for various building materials including, but not limited to asphaltic roofing material, transite, and cable wrap indicted ACM are present in the study area. These materials are widely distributed across the study area and are subject to migration via wind and water erosion. Asbestos concentrations in 11 bulk material samples contained asbestos fibers at concentrations greater than 1 %. The damaged and friable nature of these materials poses a potential risk to human health as it relates to the inhalation pathway.

- Two dilapidated drums were sampled in the study area and contained inorganic contaminants that exceeded GSIPC and PSIC and DCC in both of the residential and nonresidential exposure scenarios. In addition, TCLP analytical results indicated that the sampled drum contents are characteristically hazardous for lead.

- Contents of partially buried abandoned drums protruding from the EPA cap near the Torch Lake shoreline adjacent to the smelter property contained concentrations of inorganic COCs, cyanide, and SVOCs that exceeded GSIPC, and PSIC and DCC in both of the residential and nonresidential exposure scenarios. One of the samples contained Total PCBs in excess of DCC for the residential and non-residential exposure pathways.

- Residual process materials that were sampled in the study area contained concentrations of Total PCBs that exceeded VSIC and DCC for both residential and nonresidential exposure scenarios.

- Sampled waste piles in the study area contained concentrations of inorganic contaminants that exceeded GSIPC and DCC for both residential and nonresidential exposure scenarios. Analytical results from two of the waste piles contained Total PCB concentrations that exceeded DCC for both residential and nonresidential exposure scenarios. One waste pile, contained cyanide at a concentration that exceeded GSIPC. Lastly, one waste pile also contained SVOCs that exceeded GSIPC and VOCs that exceeded DWPC for both residential and nonresidential exposure scenarios and GSIPC.

- Soil analytical results exceeded PSIC and DCC in both of the residential and nonresidential exposure scenarios for inorganic contaminants. In addition, a limited number of samples analyzed for cyanide and SVOCs exceeded GSIPC. Lastly, Total PCB concentrations in 16 samples collected from the study area exceed DCC for both residential and nonresidential exposure scenarios.

- Surface soil screening results screening results included measured inorganic contaminant concentrations that exceeded DCC and PSIC in both residential and non-residential exposure scenarios.

- Groundwater analytical results for one groundwater sample exceeded DWC for both residential and nonresidential exposure scenarios and GSIC for Total PCBs.
- Sediment analytical results exceeded ESLs, TECs, and PECs for inorganic contaminants, SVOCs, and Total PCBs. Concentrations of cyanide exceeded ESLs in one sample.
- Surface water analytical results exceeded ESLs for one SVOC constituent. Surface water analytical results exceeded the ESL and the Surface Water Rule 57 values for Total PCBs and inorganics in a sample collected near a partially submerged drum at the shoreline adjacent to the smelter property.

The analytical results summarized above provide sufficient analytical data and lines of evidence to conclude that the study area is a facility as defined in Section 20101(1) (s) of the NREPA. The following table provides a summary of the affected environmental media, applicable regulatory criteria, and potential receptors within the Hubbell Processing Area.

Hubbell Processing Area – Media, Criteria, Potential Receptor Summary

Media	Soil			Groundwater			Air		Sediment	Surface Water		Building Materials, Asbestos, and Abandoned Containers			
Criteria / Potential Receptor	Drinking Water Protection	Groundwater Surface Water Interface	Direct Contact	Drinking Water Protection	Groundwater Surface Water Interface	Flammability and Explosivity	Volatilization	Particulate Inhalation	Ecological	Ecological	Human Health	Particulate Inhalation	Flammability and Explosivity	Environmental	Human Health
Residential Human	✓	✓	✓	✓	✓		✓	✓			✓	✓		✓	✓
Nonresidential Human	✓	✓	✓	✓	✓		✓	✓			✓	✓		✓	✓
Water Column Organism									✓	✓					
Benthic Organism									✓	✓					
COCs exceeding applicable regulatory criteria in one or more sample	Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Cyanide, Iron, Lead, Mercury, Nickel, Silver, Zinc, Bis(2-EthylHexyl)Phthalate, Benzene, 1,2,4 Trimethylbenzene, Naphthalene, Total Xylenes, Fluoranthene, Hexachlorobenzene, Phenanthrene, Total PCBs, Asbestos, Benzo(a)pyrene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Benzo(a)anthracene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluorene, Pyrene, Indeno(1,2,3-cd)pyrene													

In addition to the evaluation of analytical results collected from the study area, the following provides a summary of findings derived from the assessment of the Hubbell Processing Area with respect to the goals and objectives for the Project:

- Significant in-lake and terrestrial sources of contamination are present in the form of inorganic COCs, cyanide, VOCs, SVOCs, PCBs, and asbestos in the study area. Reconnaissance documented that the majority of the terrestrial portions of the study area are covered by acres of uncontrolled deposits of coal, PCB-laden debris, and charred residual process materials. Further, debris and waste piles, apparently placed in the study area after mining era operations ceased contain multiple COCs that exceed applicable regulatory criteria. Offshore sampling in the vicinity of drums and waste deposits confirmed that multiple COCs are present in the surficial sediments in the nearshore environment of the study area;

- In-lake and terrestrial uncharacterized waste deposits were identified in the study area. Multiple abandoned drums in various stages of degradation are present in the study area, the contents some of which have been determined to be characteristically hazardous and/or PCB-containing. Debris and waste piles located in the study area are laden with COCs that exceed applicable regulatory criteria. Further, these waste deposits are subject to erosion and migration to Torch Lake via eroded channels on the ground surface that discharge through voids and openings in the former coal dock bulkhead. Offshore sediment sampling confirmed that COCs are present in sediment adjacent to the former smelter and coal dock operations;

- Bulk disposal areas, including the charred PCB-laden remnants of copper recovery operations cover acres of the ground surface in the study area. Similarly, the ground surface in the northern portion of the study area is covered with coal and numerous coal piles are interspersed throughout the property. Waste and debris piles containing COCs above regulatory criteria were also observed. Offshore side-scan sonar and underwater video surveillance confirmed that large deposits of drums, circuit board waste, and other materials are present in the nearshore sediment; and,

- Industrial ruins, including buildings, foundations, and building floors associated with the smelter, mineral building, and coal dock complex are present at the ground surface. In addition, a stack related to the former smelter operations was razed and the associated debris and structural components left in-place on the ground surface. The deteriorated conditions of the buildings on the property have resulted in the widespread distribution of roofing materials across the study area. The unsecured buildings and foundations also feature physical hazards, including voids and pits ranging from 6 ft to 20 ft deep. Mining era ACM, containers, and building materials were all observed in the study area.

9.3.2 Recommendations

The conclusions outlined in the preceding subsection establish that the Hubbell Processing Area is a Part 201 Facility. Section 20107a of Part 201 of NREPA describes the duties of owners or operators of a Facility, regardless of their liability, including: prevent unacceptable exposures, prevent exacerbation, and take reasonable precautions against the foreseeable actions of third

parties. Some exceptions may apply; in any case, owners and operators of contaminated properties should become familiar with Section 20107a and the associated Rules.

Limited actions have been taken through the implementation of remedial measures, such as the placement of a soil and vegetative cap on portions of the former smelter property, to address these environmental issues. This remedy however, does not address the presence of PCBs in groundwater at the property, nor is it clear whether these actions were implemented as part of a remedial action or if they were routine maintenance activities (grading gravel in a parking lot). Furthermore, partially buried abandoned drums are protruding from the EPA cap near the Torch Lake shoreline adjacent to the smelter property. Drum samples in that area contain multiple COCs in excess of applicable criteria. The identified abandoned containers and contaminants, and their uncontrolled nature merit immediate response actions to control and prevent continued migration of contaminants from the terrestrial portions of the study area.

To date, no documented remedial actions are known to have been implemented at the mineral building or coal dock properties; however, remedial actions at the properties were previously considered. In a memorandum entitled *No Action at the Coal Dock Property Located at the Hubbell/Tamarack portion of the Torch Lake Superfund Site (the Site), Houghton County, Michigan* prepared by the EPA dated 22 November 2002 the EPA concluded that "given the limited volume of waste material on the coal dock property and the fact that no significant contamination was detected in the two soil samples collected by the MDEQ, EPA, at this time, will not be pursuing institutional controls on the property." These determinations were made based on inspections and sampling activities completed during July and October 2002, the result of which are documented in the previously mentioned memorandum.

The preceding determinations made by the EPA were based on observations and analytical results that did not include PCB analyses of surface soils and sediment. The analytical results from the SI indicate that COCs, and specifically PCBs, in waste piles, residual process materials, surface soils, and ACM materials located on the mineral building and coal dock properties may be subject to erosion via wind and stormwater that discharges directly to Torch Lake. The identified contaminants and their uncontrolled nature merit immediate response

actions to control and prevent continued migration of contaminants from the terrestrial portions of the study area. Once these uncontrolled conditions have been stabilized and exposure risks have been evaluated, long-term remedial objectives can be evaluated.

Based on the results of the SI and to ensure compliance with regulatory statutes, human health and ecological risks should minimally be qualitatively evaluated with property-specific data to determine if risks to the public health, safety, or welfare or to the environment are likely within the study area. The performance of a risk assessment on select properties or groups of properties, based on current and anticipated future land-use will help identify remedial goals for properties where potential human health and ecological hazards have been identified. Assessment, based on current and future land-use, contributes to the beneficial and safe re-use and potential redevelopment of any given property by clarifying applicability of regulatory statutes, as traditional property zoning (residential versus nonresidential) is generally undefined in the study area.

MDEQ should continue to provide new study data to the Remediation and Redevelopment Division Superfund Section (RRD SFS), which is responsible for monitoring EPA's remedy for the terrestrial and lake portion of the Torch Lake Superfund Site. RRD SFS should evaluate whether any remedy modifications are necessary. The EPA and RRD SFS should verify that administrative controls for areas that have been previously remediated by the EPA have been employed to ensure that the selected remedy is performing as designed and those institutional controls, where required, have been recorded and are being enforced.

Additionally, MDEQ should continue to provide pertinent data to the Michigan Department of Health and Human Services (MDHHS) where evaluation of specific potential public health risks is warranted.

Terrestrial and offshore investigative findings derived from the Hubbell Processing Area confirm that PCBs are present in environmental media. Further, the analytical results from the SI conclude that the Hubbell Processing Area provides for an upland source of PCBs to Torch Lake through airborne, groundwater, surface water, and soil erosion pathways. For summary reference, **Figure 9-7** depicts all PCB detections identified in the Hubbell Processing Area in all sampled environmental media.

SECTION 9

DETAILED FINDINGS REPORT – HUBBELL PROCESSING AREA TABLES

TABLE 9-1
Sample Analytical Summary - Bulk Asbestos
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Sample Location	Field Sample ID	Sample Date	Asbestos	Note
CHLL-ASBBLK01	CHLL-ASBBLK01-073114	7/31/2014	ND	
CHLL-ASBBLK02	CHLL-ASBBLK02-073114	7/31/2014	ND	
CHLL-ASBBLK03	CHLL-ASBBLK03-073114	7/31/2014	ND	
CHLL-ASBBLK04	CHLL-ASBBLK04-073114	7/31/2014	ND	
CHLL-ASBBLK05	**CHLL-ASBBLK05-073114**	**7/31/2014**	**15 %**	**chrysotile**
CHLL-ASBBLK06	**CHLL-ASBBLK06-073114**	**7/31/2014**	**70 %**	**chrysotile**
CHLL-ASBBLK07	**CHLL-ASBBLK07A-101414**	**10/14/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK07B-101414	**10/14/2014**	**2 %**	**chrysotile**
	CHLL-ASBBLK07C-101414	**10/14/2014**	**8 %**	**chrysotile**
CHLL-ASBBLK08	**CHLL-ASBBLK08A-101414**	**10/14/2014**	**8 %**	**chrysotile**
	CHLL-ASBBLK08B-101414	10/14/2014	ND	
	CHLL-ASBBLK08C-101414	**10/14/2014**	**20 %**	**chrysotile**
CHLL-ASBBLK09	**CHLL-ASBBLK09A-101414**	**10/14/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK09B-101414	**10/14/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK09C-101414	**10/14/2014**	**20 %**	**chrysotile**
CHLL-ASBBLK10	CHLL-ASBBLK10A-101414	10/14/2014	ND	
	CHLL-ASBBLK10B-101414	10/14/2014	ND	
	CHLL-ASBBLK10C-101414	10/14/2014	ND	
CHLL-ASBBLK11	CHLL-ASBBLK11A-101414	10/14/2014	ND	
CHLL-ASBBLK12	CHLL-ASBBLK12A-101414	10/14/2014	ND	
CHLL-ASBBLK13	CHLL-ASBBLK13A-101414	10/14/2014	<1 %	chrysotile
CHLL-ASBBLK14	CHLL-ASBBLK14A-101414	10/14/2014	ND	
CHLL-ASBBLK15	CHLL-ASBBLK15A-101414	10/14/2014	ND	
CHLL-ASBBLK16	CHLL-ASBBLK16A-101414	10/14/2014	ND	
CHLL-ASBBLK17	CHLL-ASBBLK17A-101414	10/14/2014	ND	
CHLL-ASBBLK18	CHLL-ASBBLK18A-101414	10/14/2014	ND	
CHLL-ASBBLK19	**CHLL-ASBBLK19A-101414**	**10/14/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK19B-101414	**10/14/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK19C-101414	**10/14/2014**	**20 %**	**chrysotile**
CHLL-ASBBLK20	CHLL-ASBBLK20A-101414	10/14/2014	ND	
	CHLL-ASBBLK20B-101414	10/14/2014	ND	
	CHLL-ASBBLK20C-101414	10/14/2014	ND	
CHLL-ASBBLK21	CHLL-ASBBLK21A-101414	10/14/2014	ND	
	CHLL-ASBBLK21B-101414	10/14/2014	ND	
	CHLL-ASBBLK21C-101414	10/14/2014	ND	
CHLL-ASBBLK22	**CHLL-ASBBLK22A-101414**	**10/14/2014**	**90 %**	**chrysotile**
	CHLL-ASBBLK22B-101414	**10/14/2014**	**90 %**	**chrysotile**
	CHLL-ASBBLK22C-101414	**10/14/2014**	**90 %**	**chrysotile**
CHLL-ASBBLK23	CHLL-ASBBLK23A-101414	10/14/2014	ND	
	CHLL-ASBBLK23B-101414	10/14/2014	ND	
	CHLL-ASBBLK23C-101414	10/14/2014	ND	
CHLL-ASBBLK24	**CHLL-ASBBLK24A-101414**	**10/14/2014**	**90 %**	**chrysotile**
CHLL-ASBBLK25	CHLL-ASBBLK25A-101414	10/14/2014	ND	
	CHLL-ASBBLK25B-101414	10/14/2014	ND	
	CHLL-ASBBLK25C-101414	10/14/2014	ND	
CHLL-ASBBLK26	**CHLL-ASBBLK26A-101514**	**10/15/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK26B-101514	**10/15/2014**	**20 %**	**chrysotile**
	CHLL-ASBBLK26C-101514	**10/15/2014**	**20 %**	**chrysotile**
CHLL-ASBBLK27	CHLL-ASBBLK27A-101514	10/15/2014	ND	
CHLL-ASBBLK28	CHLL-ASBBLK28A-101514	10/15/2014	ND	
	CHLL-ASBBLK28B-101514	10/15/2014	ND	
	CHLL-ASBBLK28C-101514	10/15/2014	ND	

TABLE 9-1
Sample Analytical Summary - Bulk Asbestos
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Sample Location	Field Sample ID	Sample Date	Asbestos	Note
CHLL-ASBBLK29	CHLL-ASBBLK29A-101514	10/15/2014	ND	
	CHLL-ASBBLK29B-101514	10/15/2014	ND	
	CHLL-ASBBLK29C-101514	10/15/2014	ND	
CHLL-ASBBLK30	CHLL-ASBBLK30A-101514	10/15/2014	ND	
	CHLL-ASBBLK30B-101514	10/15/2014	ND	
	CHLL-ASBBLK30C-101514	10/15/2014	ND	
CHLL-ASBBLK31	**CHLL-ASBBLK31A-101514**	**10/15/2014**	**15 %**	**chrysotile**
	CHLL-ASBBLK31B-101514	**10/15/2014**	**15 %**	**chrysotile**
	CHLL-ASBBLK31C-101514	**10/15/2014**	**15 %**	**chrysotile**
CHLL-ASBBLK32	**CHLL-ASBBLK32A-101514**	**10/15/2014**	**60 %**	**chrysotile**
	CHLL-ASBBLK32B-101514	10/15/2014	ND	
	CHLL-ASBBLK32C-101514	10/15/2014	ND	
CHLL-ASBBLK33	CHLL-ASBBLK33A-101514	10/15/2014	ND	
	CHLL-ASBBLK33B-101514	10/15/2014	ND	
	CHLL-ASBBLK33C-101514	10/15/2014	ND	
CHLL-ASBBLK34	CHLL-ASBBLK34A-101514	10/15/2014	ND	
	CHLL-ASBBLK34B-101514	10/15/2014	ND	
CHLL-ASBBLK35	CHLL-ASBBLK35A-101514	10/15/2014	ND	
CHLL-ASBBLK36	CHLL-ASBBLK36A-101514	10/15/2014	ND	
CHLL-ASBBLK37	**CHLL-ASBBLK37A-101514**	**10/15/2014**	**90 %**	**chrysotile**
	CHLL-ASBBLK37B-101514	**10/15/2014**	**45 %**	**chrysotile**
	CHLL-ASBBLK37C-101514	10/15/2014	ND	

ND = Not detected

Results greater than the National Emissions Standard for Hazardous Air Pollutants (NESHAP) and MDEQ Particulate Soil Inhalation Criteria of 1% are highlighted yellow

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-DM01	CHLL-DM02	CHLL-DM03	CHLL-DM04	CHLL-RPM-01	CHLL-RPM-02	CHLL-RPM-03	CHLL-RPM-04
Field Sample ID:									CHLL-DM01	CHLL-DM02	CHLL - DM - 03	CHLL - DM - 04	CHLL-RPM01-101514	CHLL-RPM02-101514	CHLL-RPM03-101514	CHLL-RPM04-101514
Sample Date:									8/20/2014	8/20/2014	8/20/2015	8/20/2015	10/15/2014	10/15/2014	10/15/2014	10/15/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	--	--	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									Weathered,Yellowish gray granular drum contents, Half-full	Weathered, Brownish gray granular drum contents, Half-full	Drum contents	Drum contents	White with brown and black oily staining, Rope-like, Suspect wire wrap, Damaged	Black, Plastic-like wrap exterior, Whitish gray fibrous mat interior, Suspect wire wrap, Damaged	Black, Appears burnt, Plastic-like wrap exterior, Whitish gray fibrous mat interior, Suspect wire wrap, Damaged	Greenish gray, Sludge, Eroding from stack debris
Inorganics - Metals (mg/kg)																
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	460	5500	**12000**	**7400**	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	**1900**	**590**	**60**	**22**	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	**51**	**65**	**230**	**520**	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	**10000**	**3800**	**1600 J**	**4200 J**	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	**6.6**	<2.0 U	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	**50 J**	**14**	**17**	**5.0**	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	32	47	190	200	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	**11**	**9.9**	**15**	**16**	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	**10000**	**23000**	**220000**	**17000**	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	**160000**	**67000**	**53000 J**	**240000 J**	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	**230000**	**110000**	**13000**	**1200**	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	5.5	4.6	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	6500	3100	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	**500**	350	**550**	**620**	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	**1.1**	**0.6**	**2.3**	**0.5**	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	**140**	**91**	**100**	**200**	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	**8.1**	**5.4**	**5.8**	**2.1**	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	**370**	**34**	**38**	**6.2**	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	**2200**	**3000**	**6800**	**2300**	--	--	--	--
Inorganics - Chromium, Hexavalent																
									--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	<0.12 U	<0.11 U	<0.13 U	**0.19**	--	--	--	--
Organics - PCBs (ug/kg)																
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<120 UJ	<200 UJ	<1300 UJ	<270 U	<4000 U	<200000 U	<58000 U	<180 UJ
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	470 J	400 J	<1300 UJ	720	11000 J	<200000 U	200000 J	220 J
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	170 J	<530 UJ	<1700 UJ	<270 U	<7400 U	<870000 U	<32000 U	150 J
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<180 UJ	520 J	1500 J	<270 U	7300 J	860000	30000 J	<160 UJ
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<120 UJ	<110 UJ	<1300 UJ	<270 U	<2200 U	<260000 U	<34000 U	<180 UJ
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	640 J	920 J	**1500 J**	720	**18300 J**	**860000**	**230000 J**	370 J

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-DM01	CHLL-DM02	CHLL-DM03	CHLL-DM04	CHLL-RPM-01	CHLL-RPM-02	CHLL-RPM-03	CHLL-RPM-04
Field Sample ID:									CHLL-DM01	CHLL-DM02	CHLL - DM - 03	CHLL - DM - 04	CHLL-RPM01-101514	CHLL-RPM02-101514	CHLL-RPM03-101514	CHLL-RPM04-101514
Sample Date:									8/20/2014	8/20/2014	8/20/2015	8/20/2015	10/15/2014	10/15/2014	10/15/2014	10/15/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	--	--	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									Weathered,Yellowish gray granular drum contents, Half-full	Weathered, Brownish gray granular drum contents, Half-full	Drum contents	Drum contents	White with brown and black oily staining, Rope-like, Suspect wire wrap, Damaged	Black, Plastic-like wrap exterior, Whitish gray fibrous mat interior, Suspect wire wrap, Damaged	Black, Appears burnt, Plastic-like wrap exterior, Whitish gray fibrous mat interior, Suspect wire wrap, Damaged	Greenish gray, Sludge, Eroding from stack debris
Organics - SVOCs (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08			--	--				
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	<600 U	<570 U	<6400 U	<34000 U	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	<240 U	<230 U	<2600 U	<13000 U	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	<240 U	<230 U	<2600 U	<13000 U	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	<240 U	<230 U	<2600 U	<13000 U	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	<240 U	350	<2600 U	<13000 U	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	<480 U	<450 U	<5100 U	<27000 U	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	<480 U	560	<5100 U	<27000 U	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	<480 U	<450 U	<5100 U	<27000 U	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	<480 U	<450 U	<5100 U	<27000 U	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	<240 U	460	<2600 U	<13000 U	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	<480 U	<450 U	<5100 U	<27000 U	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	<240 U	810	3000	<13000 U	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	<240 U	<230 U	<2600 U	<13000 U	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	<480 U	<450 U	<5100 U	<27000 U	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	<240 U	<230 U	<2600 U	<13000 U	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	<240 U	570	**2700**	<13000 U	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	<240 U	670	2600	<13000 U	--	--	--	--
Organics - VOCs (ug/kg)																
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	<78 U	<84 U	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	79	<84 U	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	<78 U	<84 U	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	<390 U	<420 U	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	<78 U	<84 U	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	<390 U	<420 U	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	<78 U	<84 U	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	<78 U	<84 U	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	<160 U	<170 U	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	<390 U	<420 U	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	<78 U	<84 U	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	<78 U	<84 U	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	<78 U	<84 U	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	<78 U	<84 U	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	ND	ND	--	--	--	--
Asbestos (%)																
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	ND

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB26		CHLL-SB27		CHLL-SB28			CHLL-SB29		CHLL-SB30	
Field Sample ID:									CHLL-SB 26 0''-6''	CHLL-SB 26 6''-30''	CHLL-SB 27 0''-6''	CHLL-SB 27 24''-30''	CHLL-SB 28 0-6''	CHLL-SB 28 6''-4'	CHLL-SB 28 6''-4' Dup	CHLL-SB 29 0-6''	CHLL-SB 29 6''-4'	CHLL-SB 30 0-6''	CHLL-SB 30 6''-12''
Sample Date:									6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014
Sample Interval (bgs):									0 - 0.5 ft	3 - 2.5 ft	0 - 0.5 ft	2 - 2.5 ft	0 - 0.5 ft	0.5 - 4 ft	0.5 - 4 ft	0 - 0.5 ft	0.5 - 4 ft	0 - 0.5 ft	0.5 - 1 ft
Sample Description:									TOPSOIL, Sandy, Fine grained, Gray	SAND, Fine grained, Brown	SAND, Medium to fine grained, Gray	SAND, Medium grained, Brown	SAND, Medum grained, Gray	SAND, Medium grained, Reddish brown	Field Duplicate	SAND, Fine grained, Gray	SAND, Medium to fine grained, Reddish brown	FILL, Sand and Gravel	FILL, Sand and Gravel
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	3300	3800	4400	680	10000	4400	4400	5000	3900	22000	36000
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	0.6	0.5	0.8	<0.3 U	<0.3 U	<0.3 U	<0.3 U	1.1 J	<0.3 U	<0.3 U	<0.3 U
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	12	2.1	6.4	<0.5 U	4.4	0.8	0.9	11	0.6	32	28
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	55	44	59	17	100	23	24	74	21	26	710
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	0.5	0.3	0.4	<0.2 U	0.7	0.3	0.3	0.5	0.3	0.4	2.4
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	0.4	<0.2 U	<0.2 U	<0.2 U	0.3	<0.2 U	<0.2 U	0.2	<0.2 U	0.5	<0.2 U
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	8.8	8.0	14	<2.0 U	15	7.4	7.7	11	7.2	46	130
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	3.7	3.3	6.7	<0.5 U	8.4	3.4	3.2	4.4	2.7	22	24
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	2100	1100	1000	130	960	36	41	1600	12	100	6200
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	8000	7900	10000	2700	13000	8600	7700	9300	7100	46000	110000
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	400	30	70	2.3	260	2.1	2.4	75	1.7	34	<10 U
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	100	150	120	23	150	83	87	180	64	430	890
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	0.08	0.07	0.06	<0.06 U	0.09	<0.06 U	<0.06 U	<0.06 U	<0.06 U	<0.06 U	<0.05 U
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	9.0	7.7	13	<1.0 U	24	8.3	7.8	11	6.4	77	69
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	1.2	<0.2 U	<2.0 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.5	<0.2 U	2	2.6
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	1.2	1.4	0.5	<0.1 U	0.4	<0.1 U	<0.1 U	0.3	<0.1 U	2.9	1.0
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	73	79	92	8.1	250	13	13	150	13	48	240
Inorganics - Chromium, Hexavalent																			
									--	ND	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	<0.12 U	<0.12 U	<0.12 U	<0.11 U	<0.12 U	0.29	0.37	<0.13 U	<0.11 U	<0.11 U	<0.11 U
Organics - PCBs (ug/kg)																			
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<1200 U	<120 U	<1200 U	<110 U	<120 U	<120 U	<120 U	<630 U	<110 U	<110 U	<110 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<1200 U	<120 U	<1200 U	<110 U	<120 U	<120 U	<120 U	<630 U	<110 U	<110 U	<110 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<1200 U	<120 U	<1200 U	<110 U	<120 U	<120 U	<120 U	<630 U	<110 U	<110 U	<110 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<1200 U	<120 U	<1200 U	<110 U	<120 U	<120 U	<120 U	<630 U	<110 U	<110 U	<110 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<1200 U	<120 U	<1200 U	<110 U	<120 U	<120 U	<120 U	<630 U	<110 U	<110 U	<110 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB26		CHLL-SB27		CHLL-SB28			CHLL-SB29		CHLL-SB30	
Field Sample ID:									CHLL-SB 26 0''-6''	CHLL-SB 26 6''-30''	CHLL-SB 27 0''-6''	CHLL-SB 27 24''-30''	CHLL-SB 28 0-6''	CHLL-SB 28 6''-4'	CHLL-SB 28 6''-4' Dup	CHLL-SB 29 0-6''	CHLL-SB 29 6''-4'	CHLL-SB 30 0-6''	CHLL-SB 30 6''-12''
Sample Date:									6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/13/2014
Sample Interval (bgs):									0 - 0.5 ft	3 - 2.5 ft	0 - 0.5 ft	2 - 2.5 ft	0 - 0.5 ft	0.5 - 4 ft	0.5 - 4 ft	0 - 0.5 ft	0.5 - 4 ft	0 - 0.5 ft	0.5 - 1 ft
Sample Description:									TOPSOIL, Sandy, Fine grained, Gray	SAND, Fine grained, Brown	SAND, Medium to fine grained, Gray	SAND, Medium grained, Brown	SAND, Medum grained, Gray	SAND, Medium grained, Reddish brown	Field Duplicate	SAND, Fine grained, Gray	SAND, Medium to fine grained, Reddish brown	FILL, Sand and Gravel	FILL, Sand and Gravel
Organics - SVOCs (ug/kg)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	<610 U	<580 U	<590 U	**740**	<570 U	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	<240 U	<230 U	<240 U	<250 U	<230 U	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	<240 U	<230 U	<240 U	<250 U	<230 U	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	<240 U	<230 U	<240 U	<250 U	<230 U	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	**250**	<230 U	<240 U	**890**	<230 U	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	<490 U	<460 U	<470 U	**730**	<460 U	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	<490 U	<460 U	<470 U	**1200**	<460 U	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	<490 U	<460 U	<470 U	<500 U	<460 U	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	<490 U	<460 U	<470 U	<500 U	<460 U	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	**390**	<230 U	<240 U	**1000**	<230 U	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	<490 U	<460 U	<470 U	<500 U	<460 U	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	**390**	<230 U	<240 U	**1900**	<230 U	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	<240 U	<230 U	<240 U	<250 U	<230 U	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	<490 U	<460 U	<470 U	<500 U	<460 U	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	**250**	<230 U	<240 U	**460**	<230 U	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	**450**	<230 U	<240 U	**1700**	<230 U	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	**410**	<230 U	<240 U	**1500**	<230 U	--	--
Organics - VOCs (ug/kg)																			
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																			
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB31		CHLL-SB32	CHLL-SB32	CHLL-SB33		CHLL-SB34			CHLL-SB35	CHLL-SB36	
Field Sample ID:									CHLL-SB31 0-6''	CHLL-SB31 6''-4'	CHLL-SB32 0-6''	CHLL-SB32 6''-4'	CHLL-SB 33 6''-12''	CHLL-SB 33 1'-4'	CHLL-SB34 6''-12''	CHLL-SB 34 1'-4'	CHLL-SB 34 1'-4' DUP	CHLL-SB35 1'-4'	CHLL-SB36 6''-12''	CHLL-SB 36 1'-4'
Sample Date:									6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 4 ft	0 - 0.5 ft	0.5 - 4 ft	0.5 - 1 ft	1 - 4 ft	0.5 - 1 ft	1 - 4 ft	1 - 4 ft	1 - 4 ft	0.5 - 1 ft	1 - 4 ft
Sample Description:									SAND, Coarse to medium grained, Gray	SAND, Medium to fine grained, Reddish brown	SAND, Coarse to medium grained, Gray	SAND, Coarse to fine grained, Reddish brown	SAND, Coarse to fine grained, Gray	SAND, Medium grained, Reddish brown	SAND, Medium to fine grained, Gray	SAND, Medium to fine grained, Gray to reddish brown	Field Duplicate	SAND, Medium to fine grained, Gray	COAL, Coarse to fine grained, Black to 2 ft	COAL, Coarse to fine grained, Black to 2 ft; SAND, Medium to fine grained, Dark gray
Inorganics - Metals (mg/kg)																				
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	**1400**	**650**	**7500**	**2000**	**22000**	--	**13000**	--	--	**3100**	**33000**	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	**2.9**	**0.4**	**46**	**1.1**	<0.3 U	--	**56**	--	--	<0.3 U	**0.5**	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	**48**	**64**	**39**	**10**	**15**	--	**1600**	--	--	**1.9**	**5.5**	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	**380**	**86**	**950**	**60**	**40**	--	**340**	--	--	**14**	**1400**	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	**0.3**	<0.2 U	**0.5**	**0.3**	**0.9**	--	**0.7**	--	--	<0.2 U	**1.4**	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	--	**7.3**	--	--	<0.2 U	<0.2 U	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	**14**	**3.4**	**22**	**7.2**	**39**	--	**200**	--	--	**15**	**130**	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	**1.7**	**0.7**	**6.5**	**2.9**	**24**	--	**13**	--	--	**2.6**	**11**	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	**1100**	**180**	**33000**	**480**	**5300**	--	**63000**	--	--	**21**	**13000**	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	**26000 J**	**41000 J**	**30000 J**	**15000 J**	**30000 J**	--	**47000 J**	--	--	**6800 J**	**140000 J**	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	**440**	**44**	**8800**	**41**	**17**	--	**660**	--	--	**1.4**	**29**	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	**64**	**20**	**300**	**78**	**740**	--	**440**	--	--	**54**	**690**	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	**0.06**	<0.06 U	**0.2**	**0.5**	**0.06**	--	**0.4**	--	--	<0.05 U	<0.05 U	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	**8.6**	**2.1**	**27**	**6.4**	**79**	--	**76**	--	--	**7.1**	**13**	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	**1.9**	**1.2**	**2.5**	**0.4**	**0.3**	--	**0.8**	--	--	<0.2 U	**0.2**	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	**2.9**	**0.5**	**6.9**	**1.3**	**1.8**	--	**13**	--	--	<0.1 U	**1.9**	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	**120**	**14**	**4700**	**38**	**170**	--	**3000**	--	--	**13**	**140**	--
Inorganics - Chromium, Hexavalent																				
									--	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																				
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	<0.11 U	<0.11 U	<0.12 U	**0.17**	<0.11 U	--	<0.11 U	--	--	<0.11 U	<0.10 U	--
Organics - PCBs (ug/kg)																				
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<550 U	<110 U	<1200 UJ	<1200 U	<110 U	<110 U	<110 UJ	<110 U	<110 U	<110 U	<100 U	<100 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<550 U	<110 U	**1400 J**	<1200 U	<110 U	<110 U	**660 J**	<110 U	<110 U	<110 U	<100 U	<100 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<550 U	<110 U	**1900 J**	<2000 U	<110 U	<110 U	**250 J**	<110 U	<110 U	<110 U	<100 U	<100 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<550 U	<110 U	<2000 UJ	<2000 U	<110 U	<110 U	<260 UJ	<110 U	<110 U	<110 U	<100 U	<100 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<550 U	<110 U	<1200 UJ	<1200 U	<110 U	<110 U	<110 UJ	<110 U	<110 U	<110 U	<100 U	<100 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	ND	**3300 J**	ND	ND	ND	**910 J**	ND	ND	ND	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB31		CHLL-SB32	CHLL-SB32	CHLL-SB33		CHLL-SB34			CHLL-SB35	CHLL-SB36	
Field Sample ID:									CHLL-SB31 0-6''	CHLL-SB31 6''-4'	CHLL-SB32 0-6''	CHLL-SB32 6''-4'	CHLL-SB 33 6''-12''	CHLL-SB 33 1'-4'	CHLL-SB34 6''-12''	CHLL-SB 34 1'-4'	CHLL-SB 34 1'-4' DUP	CHLL-SB35 1'-4'	CHLL-SB36 6''-12''	CHLL-SB 36 1'-4'
Sample Date:									6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 4 ft	0 - 0.5 ft	0.5 - 4 ft	0.5 - 1 ft	1 - 4 ft	0.5 - 1 ft	1 - 4 ft	1 - 4 ft	1 - 4 ft	0.5 - 1 ft	1 - 4 ft
Sample Description:									SAND, Coarse to medium grained, Gray	SAND, Medium to fine grained, Reddish brown	SAND, Coarse to medium grained, Gray	SAND, Coarse to fine grained, Reddish brown	SAND, Coarse to fine grained, Gray	SAND, Medium grained, Reddish brown	SAND, Medium to fine grained, Gray	SAND, Medium to fine grained, Gray to reddish brown	Field Duplicate	SAND, Medium to fine grained, Gray	COAL, Coarse to fine grained, Black to 2 ft	COAL, Coarse to fine grained, Black to 2 ft; SAND, Medium to fine grained, Dark gray
Organics - SVOCs (ug/kg)																				
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																				
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																				
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	ND	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB37		CHLL-SB52		CHLL-SB58	CHLL-SB59	CHLL-SB60	CHLL-SB61	CHLL-SB62	CHLL-SB63	CHLL-SB64
Field Sample ID:									CHLL-SB37 6''-12''	CHLL-SB 37 1'-4'	CHLL-SB52 0-6''	CHLL-SB52 6''-4'	CHLL-SB58-3''-9''	CHLL-SB59-3''-9''	CHLL-SB60-6''-12''	CHLL-SB61-3''-9''	CHLL-SB62-3''-9''	CHLL-SB63-6''-12''	CHLL-SB64-3''-9''
Sample Date:									6/11/2014	6/11/2014	6/11/2014	6/11/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
Sample Interval (bgs):									0.5 - 1 ft	1 - 4 ft	0 - 0.5 ft	0.5 - 4 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0.5 - 1.0 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0.5 - 1 ft	0.25 - 0.75 ft
Sample Description:									COAL, Coarse to fine grained, Black	COAL, Coarse to fine grained, Black	SAND, Fine grained, Gray to 1 ft	SAND, Fine grained, Gray to 1 ft; SAND, Medium to fine grained, Reddish Brown	SAND and GRAVEL, Coarse to medium grained, Some metal debris, Black	SAND and GRAVEL, Coarse to medium grained, Black	SAND, Coarse to fine grained, some pebbles, Brown to dark brown	SAND and GRAVEL, Coarse to medium grained, Black	SAND and GRAVEL, Coarse to medium grained, Black	SAND, Coarse to fine grained, some pebbles, Brown to dark brown	SAND and GRAVEL, Coarse to medium grained, Black
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	**25000**	--	**8000**	**3300**	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	**5.9 J**	--	**9.8**	**0.4**	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	**27**	--	**120**	**3.4**	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	**1000**	--	**180**	**29**	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	**1.6**	--	**0.6**	**0.3**	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	**10**	--	**1.2**	<0.2 U	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	**88**	--	**34**	**8.0**	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	**9.2**	--	**7.1**	**2.6**	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	**10000**	--	**26000**	**1500**	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	**90000 J**	--	**19000 J**	**6100 J**	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	**210 J**	--	**1700**	**28**	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	**580**	--	**320**	**87**	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	**0.06**	--	**0.1**	<0.06 U	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	**17**	--	**21**	**7.5**	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	**0.4**	--	**1.0**	<0.2 U	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	**3.4**	--	**10**	**0.6**	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	**690**	--	<1000 U	**23**	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																			
									ND	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	<1.0 U	--	<0.12 U	<0.11 U	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																			
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<100 UJ	<100 U	<120 U	<110 U	<120 U	<110 U	<130 U	<110 U	<180 UJ	<180 UJ	<2100 UJ
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	**98 J**	<100 U	<330 U	<110 U	**140**	**430**	**150**	<110 U	**360 J**	**460 J**	**9900 J**
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<100 UJ	<100 U	<210 U	<110 U	<110 U	<110 U	<130 U	<110 U	<180 UJ	<550 UJ	**1500 J**
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<100 UJ	<100 U	<210 U	<110 U	<110 U	<110 U	<130 U	<110 U	**170 J**	**540 J**	<1600 UJ
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<100 UJ	<100 U	<120 U	<110 U	<110 U	<110 U	<130 U	<110 U	<110 UJ	<110 UJ	<1100 UJ
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**98 J**	ND	ND	ND	**140**	**430**	**150**	ND	**530 J**	**1000 J**	**11400 J**

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB37		CHLL-SB52		CHLL-SB58	CHLL-SB59	CHLL-SB60	CHLL-SB61	CHLL-SB62	CHLL-SB63	CHLL-SB64
Field Sample ID:									CHLL-SB37 6''-12''	CHLL-SB 37 1'-4'	CHLL-SB52 0-6''	CHLL-SB52 6''-4'	CHLL-SB58-3''-9''	CHLL-SB59-3''-9''	CHLL-SB60-6''-12''	CHLL-SB61-3''-9''	CHLL-SB62-3''-9''	CHLL-SB63-6''-12''	CHLL-SB64-3''-9''
Sample Date:									6/11/2014	6/11/2014	6/11/2014	6/11/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
Sample Interval (bgs):									0.5 - 1 ft	1 - 4 ft	0 - 0.5 ft	0.5 - 4 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0.5 - 1.0 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0.5 - 1 ft	0.25 - 0.75 ft
Sample Description:									COAL, Coarse to fine grained, Black	COAL, Coarse to fine grained, Black	SAND, Fine grained, Gray to 1 ft	SAND, Fine grained, Gray to 1 ft; SAND, Medium to fine grained, Reddish Brown	SAND and GRAVEL, Coarse to medium grained, Some metal debris, Black	SAND and GRAVEL, Coarse to medium grained, Black	SAND, Coarse to fine grained, some pebbles, Brown to dark brown	SAND and GRAVEL, Coarse to medium grained, Black	SAND and GRAVEL, Coarse to medium grained, Black	SAND, Coarse to fine grained, some pebbles, Brown to dark brown	SAND and GRAVEL, Coarse to medium grained, Black
Organics - SVOCs (ug/kg)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	<3000 UJ	<560 UJ	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	<2400 U	<450 U	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	<2400 U	<450 U	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	<2400 U	<450 U	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	<2400 U	<450 U	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	<2400 U	<450 U	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	<2400 U	<450 U	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	<1200 UJ	<230 UJ	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	<1200 U	<230 U	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																			
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	**110 J**	<61 UJ	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	<350 UJ	<310 UJ	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	<350 UJ	<310 UJ	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	**210 J**	<120 UJ	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	<350 UJ	<310 UJ	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	<70 UJ	<61 UJ	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	**150 J**	<61 UJ	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	**190 J**	<61 UJ	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	**360 J**	ND	--	--	--	--	--	--	--
Asbestos (%)																			
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	ND	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB65	CHLL-SB66	CHLL-SB67	CHLL-SB68	CHLL-SB69	CHLL-SB71	CHLL-SB72	CHLL-SB73	CHLL-SB74	
Field Sample ID:									CHLL-SB65-3''-9''	CHLL-SB66-6''-12''	CHLL-SB67-3''-9''	CHLL-SB68-3''-9''	CHLL-SB69-0-6''	CHLL-SB71 6-12''	CHLL-SB72 3-9''	CHLL-SB73 3-9''	CHLL-SB74-0-6''	CHLL-SB74R-0-6''
Sample Date:									8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/21/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/21/2014
Sample Interval (bgs):									0.25 - 0.75 ft	0.5 - 1 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0 - 0.5 ft	0.5 - 1 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND and GRAVEL, Coarse to medium grained, Black	SAND, Coarse to fine grained, Brown	SAND and GRAVEL, Coarse to medium grained, Black	SAND and GRAVEL, Coarse to medium grained, Some metal debris, Black	SAND, Coarse to fine grained, Brown	SAND and GRAVEL, Coarse to medium grained, Black	SAND and GRAVEL, Coarse to medium grained, Black to dark brown	SAND and GRAVEL, Coarse to medium grained, Black to dark brown	SAND and GRAVEL, Coarse to medium grained, Dark brown	SAND and GRAVEL, Coarse to medium grained, Dark brown
Inorganics - Metals (mg/kg)																		
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--	**68**	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--	**60**	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--	**370000**	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--	**540**	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--	**130**	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																		
									--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																		
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--	<0.12 U	--
Organics - PCBs (ug/kg)																		
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<110 UJ	<110 UJ	<110 U	<110 UJ	<150 UJ	<110 U	<110 UJ	<110 U	<120 U	<280 UJ
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	**67 J**	**280 J**	<110 U	**100 J**	**360 J**	<110 U	**93 J**	<110 U	<120 U	**510 J**
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<110 UJ	<230 UJ	<110 U	<110 UJ	<240 UJ	<110 U	<110 UJ	<110 U	<120 U	<320 UJ
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<110 UJ	**220 J**	<110 U	**81 J**	**240 J**	<110 U	**69 J**	<110 U	<120 U	**310 J**
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 UJ	<110 UJ	<110 U	<110 UJ	<120 UJ	<110 U	<110 UJ	<110 U	<120 U	<130 UJ
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**67 J**	**500 J**	ND	**181 J**	**600 J**	ND	**162 J**	ND	ND	**820 J**

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB65	CHLL-SB66	CHLL-SB67	CHLL-SB68	CHLL-SB69	CHLL-SB71	CHLL-SB72	CHLL-SB73	CHLL-SB74	
Field Sample ID:									CHLL-SB65-3''-9''	CHLL-SB66-6''-12''	CHLL-SB67-3''-9''	CHLL-SB68-3''-9''	CHLL-SB69-0-6''	CHLL-SB71 6-12''	CHLL-SB72 3-9''	CHLL-SB73 3-9''	CHLL-SB74-0-6''	CHLL-SB74R-0-6''
Sample Date:									8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/21/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/21/2014
Sample Interval (bgs):									0.25 - 0.75 ft	0.5 - 1 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0 - 0.5 ft	0.5 - 1 ft	0.25 - 0.75 ft	0.25 - 0.75 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND and GRAVEL, Coarse to medium grained, Black	SAND, Coarse to fine grained, Brown	SAND and GRAVEL, Coarse to medium grained, Black	SAND and GRAVEL, Coarse to medium grained, Some metal debris, Black	SAND, Coarse to fine grained, Brown	SAND and GRAVEL, Coarse to medium grained, Black	SAND and GRAVEL, Coarse to medium grained, Black to dark brown	SAND and GRAVEL, Coarse to medium grained, Black to dark brown	SAND and GRAVEL, Coarse to medium grained, Dark brown	SAND and GRAVEL, Coarse to medium grained, Dark brown
Organics - SVOCs (ug/kg)																		
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	<1500 U	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	<580 U	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	<580 U	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	<580 U	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	<580 U	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	<1200 U	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	<1200 U	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	<1200 U	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	<1200 U	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	<580 U	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	<1200 U	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	<580 U	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	<580 U	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	<1200 U	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	<580 U	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	<580 U	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	<580 U	--
Organics - VOCs (ug/kg)																		
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																		
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB75		CHLL-SB76	CHLL-SB77	CHLL-SB78	CHLL-SB79	CHLL-SB80		CHLL-SB81
Field Sample ID:									CHLL-SB75-0-6"	CHLL-SB75-0-6"-DUP	CHLL-SB76-0-6"	CHLL-SB77-0-6"	CHLL-SB78-6"-12"'	CHLL-SB79-0-6"	CHLL-SB80-0-6"	CHLL-SB80-0-6"-DUP	CHLL-SB81-0-6"
Sample Date:									8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 1 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate	SAND AND GRAVEL, Black
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	**45**	**37**	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	**130**	**83**	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	**0.9**	**1.1**	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	**33**	**28**	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	**17000**	**11000**	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	**330**	**230**	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	**310**	**240**	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	**0.1**	**0.1**	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	**0.4**	<0.2 U	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	**5.7**	**2.9**	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	**310**	**270**	--
Inorganics - Chromium, Hexavalent																	
									--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	<0.13 U	<0.12 U	--
Organics - PCBs (ug/kg)																	
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<120 U	<110 U	<110 UJ	<110 U	<130 U	<120 U	<230 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<120 U	<110 U	**190 J**	**120**	<130 U	<120 U	<230 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<150 U	<200 U	<120 U	<110 U	<270 UJ	<120 U	<130 U	<120 U	<250 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	**140**	**190**	<120 U	<110 U	**270 J**	<110 U	<130 U	<120 U	**230**
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<120 U	<110 U	<110 UJ	<110 U	<130 U	<120 U	<230 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**140**	**190**	ND	ND	**460 J**	**120**	ND	ND	**230**

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB75		CHLL-SB76	CHLL-SB77	CHLL-SB78	CHLL-SB79	CHLL-SB80		CHLL-SB81
Field Sample ID:									CHLL-SB75-0-6"	CHLL-SB75-0-6"-DUP	CHLL-SB76-0-6"	CHLL-SB77-0-6"	CHLL-SB78-6"-12"'	CHLL-SB79-0-6"	CHLL-SB80-0-6"	CHLL-SB80-0-6"-DUP	CHLL-SB81-0-6"
Sample Date:									8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 1 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate	SAND AND GRAVEL, Black
Organics - SVOCs (ug/kg)																	
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	<660 U	<600 UJ	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	<260 U	<240 UJ	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	<260 U	<240 UJ	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	<260 U	<240 UJ	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	<260 U	<240 UJ	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	<530 U	<480 UJ	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	<530 U	<480 UJ	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	<530 U	<480 UJ	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	<530 U	<480 UJ	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	<260 U	<240 UJ	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	<530 U	<480 UJ	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	<260 U	<240 UJ	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	<260 U	<240 UJ	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	<530 U	<480 UJ	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	<260 U	<240 UJ	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	**260**	**220 J**	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	<260 U	<240 UJ	--
Organics - VOCs (ug/kg)																	
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--
Asbestos (%)																	
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB82		CHLL-SB83	CHLL-SB84		CHLL-SB85	CHLL-SB86	CHLL-SB87		CHLL-SB88	CHLL-SB89
Field Sample ID:									CHLL-SB 82 0-6''	CHLL-SB 82 6''-5'	CHLL-SB83-0-6''	CHLL-SB84-0-6''	CHLL-SB84-0-6''-DUP	CHLL-SB85-0-6''	CHLL-SB86-0-6''	CHLL-SB87-0-6''	CHLL-SB87-0-6''-DUP	CHLL-SB88-0-6''	CHLL-SB89-0-6''
Sample Date:									8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND, Fine to medium grained, Gray	SAND, Fine to medium grained, Reddish brown	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																			
									--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																			
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 UJ	<110 U	<120 U	<120 U	<580 UJ	<700 UJ	<120 U	<130 U	<1300 UJ	<160 UJ
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<110 U	**220 J**	<110 U	<120 U	<120 U	<660 UJ	**3200 J**	<120 U	<130 U	**7900 J**	**430 J**
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<260 UJ	<110 U	<120 U	<120 U	<2500 UJ	<2200 UJ	<120 U	<130 U	<2000 UJ	<530 UJ
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<110 U	**260 J**	<110 U	<120 U	<120 U	**2500 J**	**2100 J**	<120 U	<130 U	**2000 J**	**520 J**
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 U	<180 UJ	<110 U	<120 U	<120 U	**800 J**	**1200 J**	<120 U	<130 U	<1800 UJ	<110 UJ
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	**480 J**	ND	ND	ND	**3300 J**	**6500 J**	ND	ND	**9900 J**	**950 J**

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB82		CHLL-SB83	CHLL-SB84		CHLL-SB85	CHLL-SB86	CHLL-SB87		CHLL-SB88	CHLL-SB89
Field Sample ID:									CHLL-SB 82 0-6''	CHLL-SB 82 6''-5'	CHLL-SB83-0-6''	CHLL-SB84-0-6''	CHLL-SB84-0-6''-DUP	CHLL-SB85-0-6''	CHLL-SB86-0-6''	CHLL-SB87-0-6''	CHLL-SB87-0-6''-DUP	CHLL-SB88-0-6''	CHLL-SB89-0-6''
Sample Date:									8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND, Fine to medium grained, Gray	SAND, Fine to medium grained, Reddish brown	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black
Organics - SVOCs (ug/kg)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																			
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																			
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB90	CHLL-SB91	CHLL-SB92	CHLL-SB93	CHLL-SB94		CHLL-SB95	CHLL-SB96	CHLL-SB97	
Field Sample ID:									CHLL-SB90-0-6''	CHLL-SB91-0-6''	CHLL-SB92-0-6''	CHLL-SB93-0-6''	CHLL-SB 94 0-6''	CHLL-SB 94 6''-4'	CHLL-SB95-0-6''	CHLL-SB96-0-6''	CHLL-SB97-0-6''	CHLL-SB97-0-6''-DUP
Sample Date:									8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 4 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	GRAVEL, Black to 1 ft	GRAVEL, Black to 1 ft; SAND, Coarse grained, Greenish gray to 2 ft; GRAVEL,Gray	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate
Inorganics - Metals (mg/kg)																		
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																		
									--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																		
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																		
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<1300 UJ	<110 U	<710 UJ	<120 UJ	<110 UJ	<120 UJ	<130 U	<110 U	<120 U	<120 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	**2500 J**	<110 U	**1800 J**	**850 J**	**180 J**	**95 J**	<130 U	<110 U	<120 U	<120 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<4100 UJ	<110 U	<4300 UJ	**460 J**	<370 UJ	<120 UJ	<130 U	<110 U	<120 U	<120 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	**4100 J**	<110 U	**4200 J**	<460 UJ	**360 J**	<120 UJ	<130 U	<110 U	<120 U	<120 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	**2100 J**	<110 U	**1500 J**	<120 UJ	**230 J**	<120 UJ	<130 U	<110 U	<120 U	<120 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**8700 J**	ND	**7500 J**	**1310 J**	**770 J**	**95 J**	ND	ND	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB90	CHLL-SB91	CHLL-SB92	CHLL-SB93	CHLL-SB94		CHLL-SB95	CHLL-SB96	CHLL-SB97	
Field Sample ID:									CHLL-SB90-0-6''	CHLL-SB91-0-6''	CHLL-SB92-0-6''	CHLL-SB93-0-6''	CHLL-SB 94 0-6''	CHLL-SB 94 6''-4'	CHLL-SB95-0-6''	CHLL-SB96-0-6''	CHLL-SB97-0-6''	CHLL-SB97-0-6''-DUP
Sample Date:									8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 4 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	GRAVEL, Black to 1 ft	GRAVEL, Black to 1 ft; SAND, Coarse grained, Greenish gray to 2 ft; GRAVEL,Gray	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	Field Duplicate
Organics - SVOCs (ug/kg)																		
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																		
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																		
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB98	CHLL-SB99	CHLL-SB100	CHLL-SB101	CHLL-SB102	CHLL-SB103	CHLL-SB104	CHLL-SB105	CHLL-SB106	CHLL-SB107	
Field Sample ID:									CHLL-SB98-0-6''	CHLL-SB99-0-6''	CHLL-SB100-0-6''	CHLL-SB101-0-6''	CHLL-SB102-0-6''	CHLL-SB103-0-6''	CHLL-SB104-0-6''	CHLL-SB105-0-6''	CHLL-SB106-0-6''	CHLL-SB 107 0-6''	CHLL-SB 107 6''-3'
Sample Date:									8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/19/2014	8/19/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 3 ft
Sample Description:									SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND, Medium grained, Brown	SAND, Medium grained, Brown to 3 ft; SAND, Medium grained, Reddish brown
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																			
									--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																			
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<110 U	<130 U	<110 UJ	<130 U	<120 U	<120 U	<170 UJ	<120 U	<110 U	<240 U	<110 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<110 U	**210**	<110 UJ	<130 U	<120 U	<120 U	<170 UJ	<120 U	<110 U	<240 U	<110 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<230 U	<110 UJ	<130 U	<120 U	<120 U	<170 UJ	<120 U	<110 U	<410 U	<110 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<230 U	**44 J**	<130 U	<120 U	<120 U	**94 J**	<120 U	<110 U	<410 U	<110 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 U	<130 U	<110 UJ	<130 U	<120 U	<120 U	<170 UJ	<120 U	<110 U	<240 U	<110 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	**210**	**44 J**	ND	ND	ND	**94 J**	ND	ND	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB98	CHLL-SB99	CHLL-SB100	CHLL-SB101	CHLL-SB102	CHLL-SB103	CHLL-SB104	CHLL-SB105	CHLL-SB106	CHLL-SB107	
Field Sample ID:									CHLL-SB98-0-6''	CHLL-SB99-0-6''	CHLL-SB100-0-6''	CHLL-SB101-0-6''	CHLL-SB102-0-6''	CHLL-SB103-0-6''	CHLL-SB104-0-6''	CHLL-SB105-0-6''	CHLL-SB106-0-6''	CHLL-SB 107 0-6''	CHLL-SB 107 6''-3'
Sample Date:									8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/19/2014	8/19/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 3 ft
Sample Description:									SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND, Medium grained, Brown	SAND, Medium grained, Brown to 3 ft; SAND, Medium grained, Reddish brown
Organics - SVOCs (ug/kg)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																			
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																			
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB108		CHLL-SB126		CHLL-SB127		CHLL-SB137	CHLL-SB138	CHLL-SB139	CHLL-SB140	CHLL-SB141
Field Sample ID:									CHLL-SB 108 0-6''	CHLL-SB 108 6''-3'	CHLL-SB-126 0-6''	CHLL-SB-126 6''-5'	CHLL-SB-127 0-6	CHLL-SB-127 6''-5'	CHLL-SB137-0-6''	CHLL-SB138-0-6''	CHLL-SB139-0-6''	CHLL-SB140-0-6''	CHLL-SB141-0-6''
Sample Date:									8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 3 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND, Medium grained, Brown	SAND, Medium grained, Brown to 3 ft; SAND, Medium grained, Reddish brown	ROAD GRAVEL, Sand and gravel, Gray	SAND,Coarse grained, With gravel, Gray	FILL, Sand and gravel, Gray	SAND,Coarse grained, With gravel, Gray	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	18	92	9.3	5.8	10
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	48	160	77	79	200
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	330	570	1200	1200	2300
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	42	39	85	230	90
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	150	40	110	190	400
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																			
									--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	<0.13 U	<0.12 U	<0.12 U	<0.15 U	<0.17 U
Organics - PCBs (ug/kg)																			
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<110 U	<110 U	<110 UJ	<110 U	--	--	--	--	--
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	**220**	<110 U	**84 J**	<110 U	--	--	--	--	--
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<140 U	<110 U	<110 UJ	<110 U	--	--	--	--	--
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<140 U	<110 U	<110 UJ	<110 U	--	--	--	--	--
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<110 U	<110 U	<110 UJ	<110 U	--	--	--	--	--
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	ND	**220**	ND	**84 J**	ND	--	--	--	--	--

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB108		CHLL-SB126		CHLL-SB127		CHLL-SB137	CHLL-SB138	CHLL-SB139	CHLL-SB140	CHLL-SB141
Field Sample ID:									CHLL-SB 108 0-6''	CHLL-SB 108 6''-3'	CHLL-SB-126 0-6''	CHLL-SB-126 6''-5'	CHLL-SB-127 0-6	CHLL-SB-127 6''-5'	CHLL-SB137-0-6''	CHLL-SB138-0-6''	CHLL-SB139-0-6''	CHLL-SB140-0-6''	CHLL-SB141-0-6''
Sample Date:									8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 3 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SAND, Medium grained, Brown	SAND, Medium grained, Brown to 3 ft; SAND, Medium grained, Reddish brown	ROAD GRAVEL, Sand and gravel, Gray	SAND,Coarse grained, With gravel, Gray	FILL, Sand and gravel, Gray	SAND,Coarse grained, With gravel, Gray	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black
Organics - SVOCs (ug/kg)																			
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																			
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																			
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB146			CHLL-SB147			CHLL-SB148		
Field Sample ID:									CHLL-SB146-0-6''	CHLL-SB146-6''-2.5'	CHLL-SB146-2.5'-4'	CHLL-SB147-0-6''	CHLL-SB147-6''-2.5'	CHLL-SB147-2.5'-4'	CHLL-SB148-0-6''	CHLL-SB148-6''-2.5'	CHLL-SB148-2.5'-4'
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft
Sample Description:									SAND, Gray, Medium to fine grained	SAND, Gray, Medium to fine grained to 1 ft; SAND, Fine to medium, reddish brown	SAND, Fine to medium, reddish brown	SAND, Gray, Medium to coarse grained	SAND, Brown,Fine to medium grained	SAND, Brown,Fine to medium grained	SAND, Gray, Medium to coarse grained	SAND, gray, medium to coarse grained to 1 ft; SAND, Brown, Fine to medium grained	SAND, Brown, Fine to medium grained
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																	
									--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																	
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<390 UJ	<120 U	<120 U	<300 UJ	<120 U	<120 U	<1200 UJ	<120 U	<120 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	1000 J	<120 U	<120 U	640 J	<120 U	<120 U	2800 J	<120 U	<120 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<1400 UJ	<120 U	<120 U	<910 UJ	<120 U	<120 U	<3000 UJ	<120 U	<120 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	1300 J	<120 U	<120 U	900 J	<120 U	<120 U	2900 J	<120 U	<120 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<130 UJ	<120 U	<120 U	<130 UJ	<120 U	<120 U	<1200 UJ	<120 U	<120 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**2300 J**	ND	ND	**1540 J**	ND	ND	**5700 J**	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB146			CHLL-SB147			CHLL-SB148		
Field Sample ID:									CHLL-SB146-0-6''	CHLL-SB146-6''-2.5'	CHLL-SB146-2.5'-4'	CHLL-SB147-0-6''	CHLL-SB147-6''-2.5'	CHLL-SB147-2.5'-4'	CHLL-SB148-0-6''	CHLL-SB148-6''-2.5'	CHLL-SB148-2.5'-4'
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft
Sample Description:									SAND, Gray, Medium to fine grained	SAND, Gray, Medium to fine grained to 1 ft; SAND, Fine to medium, reddish brown	SAND, Fine to medium, reddish brown	SAND, Gray, Medium to coarse grained	SAND, Brown,Fine to medium grained	SAND, Brown,Fine to medium grained	SAND, Gray, Medium to coarse grained	SAND, gray, medium to coarse grained to 1 ft; SAND, Brown, Fine to medium grained	SAND, Brown, Fine to medium grained
Organics - SVOCs (ug/kg)																	
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																	
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--
Asbestos (%)																	
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB149				CHLL-SB150		
Field Sample ID:									CHLL-SB149-0-6''	CHLL-SB149-6''-2.5'	CHLL-SB149-6''-2.5'-DUP	CHLL-SB149-2.5'-4'	CHLL-SB150-0-6''	CHLL-SB150-6''-2.5'	CHLL-SB150-2.5'-4'
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 2.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft
Sample Description:									SAND, Gray, Medium to coarse grained	SAND, gray, medium to coarse grained to 1 ft; SAND, Brown, Fine to medium grained	Field Duplicate	SAND, Brown, Fine to medium grained	SAND, Gray, Fine grained	SAND, Gray, Fine grained to 1 ft; SAND, Gray, Medium to fine grained to 2 ft; SAND, Brown, Fine to medium grained	SAND, Brown, Fine to medium grained
Inorganics - Metals (mg/kg)															
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent															
									--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)															
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)															
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<150 UJ	<120 U	<110 U	<120 U	<220 UJ	<120 U	<120 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	270 J	<120 U	<110 U	<120 U	300 J	<120 U	<120 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<400 UJ	<120 U	<110 U	<120 U	<510 UJ	<120 U	<120 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	390 J	<120 U	<110 U	<120 U	500 J	<120 U	<120 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<120 UJ	<120 U	<110 U	<120 U	<130 UJ	<120 U	<120 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	660 J	ND	ND	ND	800 J	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB149				CHLL-SB150		
Field Sample ID:									CHLL-SB149-0-6''	CHLL-SB149-6''-2.5'	CHLL-SB149-6''-2.5'-DUP	CHLL-SB149-2.5'-4'	CHLL-SB150-0-6''	CHLL-SB150-6''-2.5'	CHLL-SB150-2.5'-4'
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 2.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft
Sample Description:									SAND, Gray, Medium to coarse grained	SAND, gray, medium to coarse grained to 1 ft; SAND, Brown, Fine to medium grained	Field Duplicate	SAND, Brown, Fine to medium grained	SAND, Gray, Fine grained	SAND, Gray, Fine grained to 1 ft; SAND, Gray, Medium to fine grained to 2 ft; SAND, Brown, Fine to medium grained	SAND, Brown, Fine to medium grained
Organics - SVOCs (ug/kg)															
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)															
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--
Asbestos (%)															
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB151		CHLL-SB151	CHLL-SB152		CHLL-SB153		CHLL-SB154
Field Sample ID:									CHLL-SB151-0-6''	CHLL-SB151-6''-2.5'	CHLL-SB151-2.5'-4'	CHLL-SB152-0-6''	CHLL-SB152-6''-2.5'	CHLL-SB153-0-6''	CHLL-SB153-6''-2.5'	CHLL-SB154-0-6''
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	0 - 0.5 ft	0.5 - 2.5 ft	0 - 0.5 ft
Sample Description:									SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse to 2 ft; SAND, Fine to medium, Brown	SAND, Fine to medium, Brown	SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse to 1 ft; FILL to 1.5 ft, SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse to 1 ft; GRAVEL, Reddish brown, to 2 ft, GRAVEL, Gray to 2.5 ft; FILL, Wood debris	GRAVEL and WOOD, Gray
Inorganics - Metals (mg/kg)																
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																
									--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<1200 UJ	<120 U	<120 UJ	<230 U	<110 U	<1300 UJ	<100 U	<1200 UJ
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	2900 J	<120 U	<120 UJ	<430 U	<110 U	3300 J	<100 U	1500 J
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<2800 UJ	<120 U	<120 UJ	<280 U	<110 U	<8600 UJ	<100 U	<2800 UJ
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	2800 J	<120 U	<120 UJ	<190 U	<110 U	8500 J	<100 U	2800 J
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	1600 J	<120 U	<120 UJ	<110 U	<110 U	4100 J	<100 U	<1200 UJ
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**7300 J**	ND	ND	ND	ND	**15900 J**	ND	**4300 J**

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB151		CHLL-SB151	CHLL-SB152		CHLL-SB153		CHLL-SB154
Field Sample ID:									CHLL-SB151-0-6''	CHLL-SB151-6''-2.5'	CHLL-SB151-2.5'-4'	CHLL-SB152-0-6''	CHLL-SB152-6''-2.5'	CHLL-SB153-0-6''	CHLL-SB153-6''-2.5'	CHLL-SB154-0-6''
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	0 - 0.5 ft	0.5 - 2.5 ft	0 - 0.5 ft
Sample Description:									SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse to 2 ft; SAND, Fine to medium, Brown	SAND, Fine to medium, Brown	SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse to 1 ft; FILL to 1.5 ft, SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse	SAND and GRAVEL, Gray, Medium to coarse to 1 ft; GRAVEL, Reddish brown, to 2 ft, GRAVEL, Gray to 2.5 ft; FILL, Wood debris	GRAVEL and WOOD, Gray
Organics - SVOCs (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--
Asbestos (%)																
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB154			CHLL-SB155			CHLL-SB156	
Field Sample ID:									CHLL-SB154-6''-2.5'	CHLL-SB154-6''-2.5'-DUP	CHLL-SB154-6''-2.5'-4'	CHLL-SB155-0-6''	CHLL-SB155-6''-2.5'	CHLL-SB155-2.5'-4'	CHLL-SB156-0-6''	CHLL-SB156-6''-2.5'
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0.5 - 2.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft
Sample Description:									SAND, Reddish brown, Medium to coarse to 2 ft; GRAVEL, gray	Field Duplicate	GRAVEL, Gray	SAND, Gray, Fine to medium grained	SAND, Gray, Fine to medium grained to 1ft; SAND, Fine to medium, reddish brown	SAND, Medium to coarse, Reddish brown	SAND, Gray, Coarse	SAND, Gray, Coarse to 1 ft; SAND, Medium to coarse, Reddish brown
Inorganics - Metals (mg/kg)																
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																
									--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<100 U	<100 U	<110 U	<190 UJ	<120 U	<120 U	<120 UJ	<120 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<100 U	<100 U	<110 U	820 J	<120 U	<120 U	260 J	<120 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<100 U	<100 U	<110 U	<750 UJ	<120 U	<120 U	<370 UJ	<120 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<100 U	<100 U	<110 U	750 J	<120 U	<120 U	370 J	<120 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<100 U	<100 U	<110 U	<110 UJ	<120 U	<120 U	<120 UJ	<120 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	ND	ND	**1570 J**	ND	ND	630 J	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB154			CHLL-SB155			CHLL-SB156	
Field Sample ID:									CHLL-SB154-6''-2.5'	CHLL-SB154-6''-2.5'-DUP	CHLL-SB154-6''-2.5'-4'	CHLL-SB155-0-6''	CHLL-SB155-6''-2.5'	CHLL-SB155-2.5'-4'	CHLL-SB156-0-6''	CHLL-SB156-6''-2.5'
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015
Sample Interval (bgs):									0.5 - 2.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft
Sample Description:									SAND, Reddish brown, Medium to coarse to 2 ft; GRAVEL, gray	Field Duplicate	GRAVEL, Gray	SAND, Gray, Fine to medium grained	SAND, Gray, Fine to medium grained to 1ft; SAND, Fine to medium, reddish brown	SAND, Medium to coarse, Reddish brown	SAND, Gray, Coarse	SAND, Gray, Coarse to 1 ft; SAND, Medium to coarse, Reddish brown
Organics - SVOCs (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--
Asbestos (%)																
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB156	CHLL-SB157				CHLL-SB165		CHLL-SB166
Field Sample ID:									CHLL-SB156-2.5'-4'	CHLL-SB157-0-6''	CHLL-SB157-6''-2.5'	CHLL-SB157-6''-2.5'-DUP	CHLL-SB157-2.5'-4'	CHLL-SB165 0''-6''	CHLL-SB165 6''-5'	CHLL-SB166 0''-6''
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	8/19/2015	8/19/2015	8/19/2015
Sample Interval (bgs):									2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft
Sample Description:									SAND, Medium to coarse, Reddish brown	SAND, Gray, Fine to medium	SAND, Brown, Fine to medium	Field Duplicate	SAND, Brown, Fine to medium	TOPSOIL	SAND, Brown, Fine to 1 ft; SAND, Reddish brown, Fine to medium	TOPSOIL
Inorganics - Metals (mg/kg)																
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																
									--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<120 U	<110 U	<120 UJ	<120 U	<110 U	<110 U	<110 U	<100 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<120 U	<370 U	<120 UJ	<120 U	<110 U	<110 U	<160 U	<120 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<120 U	<320 U	<120 UJ	<120 U	<110 U	<110 U	<250 U	<150 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<120 U	<320 U	<120 UJ	<120 U	<110 U	<110 U	240	150
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<120 U	<110 U	<120 UJ	<120 U	<110 U	<110 U	<110 U	<100 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	ND	ND	ND	ND	ND	240	150

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB156	CHLL-SB157				CHLL-SB165		CHLL-SB166
Field Sample ID:									CHLL-SB156-2.5'-4'	CHLL-SB157-0-6''	CHLL-SB157-6''-2.5'	CHLL-SB157-6''-2.5'-DUP	CHLL-SB157-2.5'-4'	CHLL-SB165 0''-6''	CHLL-SB165 6''-5'	CHLL-SB166 0''-6''
Sample Date:									5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	8/19/2015	8/19/2015	8/19/2015
Sample Interval (bgs):									2.5 - 4 ft	0 - 0.5 ft	0.5 - 2.5 ft	0.5 - 2.5 ft	2.5 - 4 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft
Sample Description:									SAND, Medium to coarse, Reddish brown	SAND, Gray, Fine to medium	SAND, Brown, Fine to medium	Field Duplicate	SAND, Brown, Fine to medium	TOPSOIL	SAND, Brown, Fine to 1 ft; SAND, Reddish brown, Fine to medium	TOPSOIL
Organics - SVOCs (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--
Asbestos (%)																
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB166		CHLL-SB167		CHLL-SB168		CHLL-SB169	
Field Sample ID:									CHLL-SB166 6''-5'	CHLL-SB166 6''-5' DUP	CHLL-SB-167 0-6''	CHLL-SB-167 6''-5'	CHLL-SB-168 0-6''	CHLL-SB-168 6''-2'	CHLL-SB-169 0-6''	CHLL-SB-169 6''-3'
Sample Date:									8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015
Sample Interval (bgs):									0.5 - 5 ft	0.5 - 5 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0.5 - 2 ft	0 - 0.5 ft	0.5 - 3 ft
Sample Description:									SAND, Light brown, Fine to 0.75 ft; SAND, Dark gray, Fine to medium; to 1 ft; SAND, Reddish brown, Fine to medium	Field Duplicate	SAND, Dark gray, Medium to coarse	SAND, Dark gray, Medium to coarse to 3 ft; SAND, light brown, fine	TOPSOIL	SAND, Dark gray, Medium to coarse to 1.5 ft; SAND, Light brown, Fine to 2 ft; SAND, Reddish brown, Fine	TOPSOIL	SAND, Dark brown, Fine to medium to 1 ft; SAND, Reddish brown, Fine to medium
Inorganics - Metals (mg/kg)																
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	--
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																
									--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<110 U	<120 U	<120 U	<130 U	<120 U	<120 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<110 U	<120 U	<120 U	<130 U	<120 U	<120 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<110 U	<120 U	<120 U	<130 U	<120 U	<120 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<110 U	<150 U	<110 U	<120 U	<120 U	<130 U	<120 U	<120 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 U	<110 U	<110 U	<120 U	<120 U	<130 U	<120 U	<120 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB166		CHLL-SB167		CHLL-SB168		CHLL-SB169	
Field Sample ID:									CHLL-SB166 6''-5'	CHLL-SB166 6''-5' DUP	CHLL-SB-167 0-6''	CHLL-SB-167 6''-5'	CHLL-SB-168 0-6''	CHLL-SB-168 6''-2'	CHLL-SB-169 0-6''	CHLL-SB-169 6''-3'
Sample Date:									8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015	8/19/2015
Sample Interval (bgs):									0.5 - 5 ft	0.5 - 5 ft	0 - 0.5 ft	0.5 - 5 ft	0 - 0.5 ft	0.5 - 2 ft	0 - 0.5 ft	0.5 - 3 ft
Sample Description:									SAND, Light brown, Fine to 0.75 ft; SAND, Dark gray, Fine to medium; to 1 ft; SAND, Reddish brown, Fine to medium	Field Duplicate	SAND, Dark gray, Medium to coarse	SAND, Dark gray, Medium to coarse to 3 ft; SAND, light brown, fine	TOPSOIL	SAND, Dark gray, Medium to coarse to 1.5 ft; SAND, Light brown, Fine to 2 ft; SAND, Reddish brown, Fine	TOPSOIL	SAND, Dark brown, Fine to medium to 1 ft; SAND, Reddish brown, Fine to medium
Organics - SVOCs (ug/kg)																
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--
Asbestos (%)																
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB170		CHLL-SB171		CHLL-SS01	CHLL-SS02	CHLL-SS03	CHLL-SS04	CHLL-SS05
Field Sample ID:									CHLL-SB-170 0-6''	CHLL-SB-170 6''-12''	CHLL-SB-171 0-6''	CHLL-SB-171 6''-12''	CHLL-SS01-101514	CHLL-SS02-101514	CHLL-SS03-101514	CHLL-SS04-101514	CHLL-SS05-101514
Sample Date:									8/19/2015	8/19/2015	8/19/2015	8/19/2015	10/15/2014	10/15/2014	10/15/2014	10/15/2014	10/15/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 1 ft	0 - 0.5 ft	0.5 - 1 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									COAL	SAND, Dark brown, Medium to 1 ft; SAND, Brown, Medium	TOPSOIL	SAND, Dark brown, Medium to coarse to 0.75 ft; SAND, Dark gray, Fine to 1 ft	SAND AND GRAVEL, Brownish black	SAND AND GRAVEL, Brownish black	SAND AND GRAVEL, Brownish black	SANDY LOAM, Black, Organics, Wet	SANDY LOAM, Black, Organics, Wet
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	--	--	--	--	--	--	--	**4.2**	**2.7**
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	--	--	--	--	--	**37**	**26**
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	--	--	--	--	--	--	--	**850**	**180**
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	--	--	--	--	--	--	--	**22**	**7.3**
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	--	--	--	--	--	--	--	**72**	**87**
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	--	--	--	--	--
Inorganics - Chromium, Hexavalent																	
									--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	--	--	--	--	--	<0.6 U	<0.55 U
Organics - PCBs (ug/kg)																	
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	61 J	<110 U	<110 U	<230 U	<1400 UJ	<260 UJ	<220 UJ	<120 U	<110 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	47 J	<110 U	<110 U	<230 U	**2200 J**	**270 J**	**210 J**	<120 U	<110 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<110 UJ	<110 U	<110 U	<230 U	**4300 J**	**300 J**	**260 J**	<120 U	<110 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<110 UJ	<110 U	<110 U	<230 U	<4400 UJ	<310 UJ	<270 UJ	<120 U	<110 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<110 UJ	<110 U	<110 U	<230 U	**2600 J**	<260 UJ	<180 UJ	<120 U	<110 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	108 J	ND	ND	ND	**9100 J**	**570 J**	**470 J**	ND	ND

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SB170		CHLL-SB171		CHLL-SS01	CHLL-SS02	CHLL-SS03	CHLL-SS04	CHLL-SS05
Field Sample ID:									CHLL-SB-170 0-6''	CHLL-SB-170 6''-12''	CHLL-SB-171 0-6''	CHLL-SB-171 6''-12''	CHLL-SS01-101514	CHLL-SS02-101514	CHLL-SS03-101514	CHLL-SS04-101514	CHLL-SS05-101514
Sample Date:									8/19/2015	8/19/2015	8/19/2015	8/19/2015	10/15/2014	10/15/2014	10/15/2014	10/15/2014	10/15/2014
Sample Interval (bgs):									0 - 0.5 ft	0.5 - 1 ft	0 - 0.5 ft	0.5 - 1 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									COAL	SAND, Dark brown, Medium to 1 ft; SAND, Brown, Medium	TOPSOIL	SAND, Dark brown, Medium to coarse to 0.75 ft; SAND, Dark gray, Fine to 1 ft	SAND AND GRAVEL, Brownish black	SAND AND GRAVEL, Brownish black	SAND AND GRAVEL, Brownish black	SANDY LOAM, Black, Organics, Wet	SANDY LOAM, Black, Organics, Wet
Organics - SVOCs (ug/kg)																	
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	--	--	--	--	--
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	--	--	--	--	--
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	--	--	--	--	--
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	--	--	--	--	--
Organics - VOCs (ug/kg)																	
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	<74 UJ	<90 UJ
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	<74 UJ	**88 J**
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	**70 J**	<90 UJ
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	<370 UJ	<450 UJ
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	<74 UJ	<90 UJ
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	<370 UJ	<450 UJ
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	<74 UJ	<90 UJ
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	**200 J**	<90 UJ
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	<150 UJ	<180 UJ
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	<370 UJ	<450 UJ
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	<74 UJ	<90 UJ
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	<74 UJ	<90 UJ
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	<74 UJ	<90 UJ
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	<74 UJ	<90 UJ
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	ND	ND
Asbestos (%)																	
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	ND	ND

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SS06	CHLL-SS07	CHLL-SS08	CHLL-SS09	CHLL-SS14	CHLL-SS15	CHLL-WP01	CHLL-WP02	CHLL-WP03
Field Sample ID:									CHLL-SS06-101514	CHLL-SS07-101514	CHLL-SS08-101514	CHLL-SS09-101514	CHLL - SS - 14 - 0-6''	CHLL - SS - 15 - 0''-6''	CHLL-WP01-101514	CHLL-WP02-101514	CHLL-WP03-101514
Sample Date:									10/15/2014	10/15/2014	10/15/2014	10/15/2014	8/20/2015	8/20/2015	10/15/2014	10/15/2014	10/15/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SANDY LOAM, Black, Organics, Wet	SANDY LOAM, Black, Organics	SANDY LOAM, With gravel, Commingled building debris	SAND AND GRAVEL, Black	Surface soil	Surface soil	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	--	--	--	--	4400	**35000**	--	--	--
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	--	--	<0.3 U	**20**	--	--	--
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	**15**	**22**	--	--	<5.0 U	**160**	**77**	**92**	**100**
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	**130**	**610**	--	--	25 J	**550 J**	**170**	**110**	**1700 J**
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	--	--	--	--	<2.0 U	3.2	--	--	--
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	--	--	<0.2 U	**3.9**	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	--	--	--	--	7.4	680	--	--	--
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	--	--	--	--	<5.0 U	**15**	--	--	--
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	**1500**	**2200**	--	--	**79**	**24000**	**7800**	**25000**	**22000**
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	--	--	6800 J	**61000 J**	--	--	--
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	**87**	**410**	--	--	13	**1400**	**1800**	**1100**	**2200**
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	--	--	--	--	5.2	8.8	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	--	--	1500	**12000**	--	--	--
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	**150**	**340**	--	--	96	**570**	**430**	**450**	**350**
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	--	--	--	--	<0.05 U	**0.2**	--	--	--
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	--	--	--	--	<10 U	**39**	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	--	--	<2.0 U	**2.8**	--	--	--
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	--	--	--	--	<0.1 U	**31**	--	--	--
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	--	--	--	--	18	**1900**	--	--	--
Inorganics - Chromium, Hexavalent																	
									--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	<0.64 U	<0.8 U	--	--	<0.11 U	<0.11 U	<0.54 U	**0.33**	<0.55 U
Organics - PCBs (ug/kg)																	
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<130 UJ	<340 UJ	--	--	<110 U	<110 UJ	<8500 UJ	<280 UJ	<920 UJ
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<130 UJ	**150 J**	--	--	400	180 J	**61000 J**	**460 J**	**730 J**
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	**120 J**	**210 J**	--	--	<110 U	<390 UJ	**8800 J**	**150 J**	**840 J**
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<130 UJ	<210 UJ	--	--	<110 U	390 J	<8900 UJ	<160 UJ	<850 UJ
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	<130 UJ	<180 UJ	--	--	<110 U	<110 UJ	**2400 J**	<130 UJ	<760 UJ
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	**120 J**	**360 J**	--	--	400	57+FU43:GQ450 J	**72200 J**	**610 J**	**1570 J**

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	CHLL-SS06	CHLL-SS07	CHLL-SS08	CHLL-SS09	CHLL-SS14	CHLL-SS15	CHLL-WP01	CHLL-WP02	CHLL-WP03
Field Sample ID:									CHLL-SS06-101514	CHLL-SS07-101514	CHLL-SS08-101514	CHLL-SS09-101514	CHLL - SS - 14 - 0-6''	CHLL - SS - 15 - 0''-6''	CHLL-WP01-101514	CHLL-WP02-101514	CHLL-WP03-101514
Sample Date:									10/15/2014	10/15/2014	10/15/2014	10/15/2014	8/20/2015	8/20/2015	10/15/2014	10/15/2014	10/15/2014
Sample Interval (bgs):									0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft	0 - 0.5 ft
Sample Description:									SANDY LOAM, Black, Organics, Wet	SANDY LOAM, Black, Organics	SANDY LOAM, With gravel, Commingled building debris	SAND AND GRAVEL, Black	Surface soil	Surface soil	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black	SAND AND GRAVEL, Black
Organics - SVOCs (ug/kg)																	
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	<530 U	<2700 U	<560 UJ	<660 UJ	<7200 UJ
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	--	--	<210 U	<1100 U	<220 U	<260 U	<2900 U
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	--	--	<210 U	<1100 U	<220 U	<260 U	<2900 U
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	--	--	<210 U	1900	<220 U	<260 U	<2900 U
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	<210 U	4300	<220 U	**690**	**3600**
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	--	--	<420 U	**3400**	<440 U	**590**	<5700 U
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	--	--	<420 U	5100	<440 U	**1100**	**6100**
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	--	--	<420 U	<2100 U	<440 U	<530 U	<5700 U
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	--	--	<420 U	<2100 U	<440 U	<530 U	<5700 U
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	--	--	<210 U	5000	<220 U	**920**	**3900**
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	--	--	<420 U	<2100 U	<440 U	<530 U	<5700 U
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	--	--	<210 U	**13000**	<220 U	**1800**	**8200**
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	--	--	<210 U	<1100 U	<220 U	<260 U	<2900 U
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	--	--	<420 U	<2100 U	<440 U	<530 U	<5700 U
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	<210 U	<1100 U	<220 UJ	**270 J**	<2900 UJ
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	--	--	<210 U	**10000**	<220 U	**1200**	**3100**
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	--	--	<210 U	7900	<220 U	**1500**	**6500**
Organics - VOCs (ug/kg)																	
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**370 J**
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**610 J**
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**110 J**
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	<470 UJ	<730 UJ	--	--	<280 U	<310 U	<310 UJ	<470 UJ	**1400 J**
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**240 J**
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	<470 UJ	<730 UJ	--	--	<280 U	<310 U	<310 UJ	<470 UJ	**580 J**
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**300 J**
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**75 J**
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	<190 UJ	<290 UJ	--	--	<110 U	<120 U	<120 UJ	<190 UJ	**1800 J**
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	<470 UJ	<730 UJ	--	--	<280 U	<310 U	<310 UJ	<470 UJ	**1500 J**
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**79 J**
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	<62 UJ	<95 UJ	**110 J**
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	<95 UJ	<150 UJ	--	--	<55 U	<62 U	**61 J**	<95 UJ	**970 J**
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	<95 UJ	<150 UJ	--	--	<55 U	<62 U	**93 J**	<95 UJ	**2500 J**
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	ND	ND	--	--	ND	ND	**61 J**	ND	**2770 J**
Asbestos (%)																	
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	ND	ND	ND	ND	--	--	ND	ND	**0.25 (CHRYSOTILE)**

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	MineralB-11	MineralB-6	SB-11	SB-12	SB-14	SS-13	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20
Field Sample ID:									Mineral XRF11	Mineral XRF6	SB-11	SB-12	SB-14	SS-13	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20
Sample Date:									9/7/2007	9/7/2007	10/11/2011	10/11/2011	10/11/2011	10/12/2011	10/12/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011
Sample Interval (bgs):									0 - 0 in	0 - 0 in	0 - 16 in	6 - 12 in	0 - 14 in	1 - 10 in	0 - 10 in	0 - 6 in	0 - 2 in	0 - 8 in	0 - 6 in	0 - 4 in	0 - 0.75 in
Sample Description:									--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Metals (mg/kg)																					
ALUMINUM	7429-90-5	6,900 (B)	NA	ID	50,000 (DD)	6,900 (B)	ID	370,000 (DD)	6200 J	3200 J	2670	2930	2010	8980 J	3700 J	11500 J	6320 J	5050 J	10600 J	8660	8260
ANTIMONY	7440-36-0	4.3	1.2 (X)	13,000	180	4.3	5,900	670	--	--	1.5 J	0.71 J	1.4 J	1.0 J	9.5	1.0 J	26	5.1	80.2	13.2	4.8 J
ARSENIC	7440-38-2	4.6	4.6	720	7.6	4.6	910	37	52	230	27.1 J-	8.6 J-	41.5 J	16	31.4	40.9	48.8	134	1220	5600 J	66.9 J
BARIUM	7440-39-3	1,300 (G)	130	330,000	37,000	1,300	150,000	130,000	--	--	43.9	69.1	33.8	21.5 J	285 J	27.9 J	4060 J	45.5 J	291 J	212	434
BERYLLIUM	7440-41-7	51	4.6 (G)	1,300	410	51	590	1,600	0.5 J	<3.2 U	0.3 J	0.37 J	0.27 J	0.44 J	1.0	0.74	0.75	0.44	1.2	3.6	1.5
CADMIUM	7440-43-9	6.0	1.6 (G,X)	1,700	550	6.0	2,200	2,100	--	--	0.73	0.66	0.8	1.3	3.9	3.0	4.9	1.5	5.8	96.3	11.4
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	1720	3620	1240	7590 J	4790 J	9970 J	12400 J	7800 J	21100 J	2220	26800
CHROMIUM	7440-47-3	1,000,000 (D,H)	1,200,000 (G,H,X)	330,000 (H)	790,000 (H)	1,000,000 (D,H)	150,000 (H)	1,000,000 (D,H)	6.9 J	56	9.3	10	14.6	30.1	22.1	38.7	20.8	23.9	244	37.7	56.6
COBALT	7440-48-4	0.8	2.0	13,000	2,600	2.0	5,900	9,000	6.9	48	2.6 J	3.8 J	<5.0 U	14.2	5.1 J	15.3	5.5	12	8.8	<5.0 U	9.0
COPPER	7440-50-8	5,800	32 (G)	130,000	20,000	5,800	59,000	73,000	17000	44000	6600	3660	14300 J	10400 J	5080 J	132 J	37300 J	24500 J	26900 J	199000 J	20300 J
IRON	7439-89-6	12,000 (B)	NA	ID	160,000	12,000 (B)	ID	580,000	--	--	8090	10300	6170	17400 J	49400 J	45100 J	23700 J	12500 J	31500 J	4380	92200
LEAD	7439-92-1	700	1,900 (G,X)	100,000	400	700	44,000	900 (DD)	280	1900	54.7	16.6	83	47.2	578	10	3680	267	715	1610	1010
LITHIUM	7439-93-2	9.8 (B)	9.8 (B)	2,300,000	4,200 (DD)	9.8 (B)	1,000,000	31,000 (DD)	4.7	<0.64 U	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	8,000	NA	6,700,000	1,000,000 (D)	22,000	2,900,000	1,000,000 (D)	--	--	1650	1590	1240	9950	2450	10600	3580	3080	5270	<500 U	6050
MANGANESE	7439-96-5	440 (B)	440 (B,G,X)	3,300	25,000	440 (B)	1,500	90,000	180	73	105	246	82.4	300 J	299 J	289 J	165 J	167 J	306 J	31.4	596
MERCURY	7439-97-6	1.7 (Z)	0.13 (B, Z)	20000 (Z)	160 (Z)	1.7 (Z)	8800 (Z)	580 (Z)	0.1	0.022	0.058 J	0.018 J	0.041 J	0.032 J-	0.38 J-	0.038 J-	0.52 J-	0.02 J-	0.21 J-	20.8	1.7
NICKEL	7440-02-0	100	29 (G)	13,000	40,000	100	16,000	150,000	24	540	8.2	7.0	9.9	54.5	26.6	57.9	27.7	102	49.4	95.3	31.5
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	<500 U	<500 U	<500 U	<500 U	585	<500 U	<500 U	<500 U	1190	1380	727
SELENIUM	7782-49-2	4.0	0.41 (B)	130,000	2,600	4.0	59,000	9,600	--	--	<3.5 U	0.33 J	0.44 J-	<3.5 U	0.98 J	1.4 J	3.1 J	0.74 J	<3.5 U	69.3	<3.5 U
SILVER	7440-22-4	4.5	1.0 (M); 0.027	6,700	2,500	13	2,900	9,000	5.0	9.0	1.7	1.0	3.9	3.2	3.2	2.8	5.7	2.6	9.5	45.5	11.8
SODIUM	7440-23-5	NA	NA	NA	NA	NA	NA	NA	--	--	198 J	165 J	132 J	207 J	446 J	257 J	381 J	846	3930	1390	887
VANADIUM	7440-62-2	72	430	ID	750 (DD)	990	ID	5,500 (DD)	--	--	18.3	25.9	10.4	28.8 J	21.9 J	51.3 J	34.9 J	16.3 J	39.7 J	30.2	31.7
ZINC	7440-66-6	2,400	62 (G)	ID	170,000	5,000	ID	630,000	490 J	5400 J	78.7	35.2	181	126 J	399 J	45.1 J	19100 J	2310 J	1310 J	14800	3050
Inorganics - Chromium, Hexavalent																					
									--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																					
CYANIDE	57-12-5	4.0 (P,R)	0.1 (P,R)	250 (P,R)	12 (P,R)	4.0 (P,R)	250 (P,R)	250 (P,R)	--	--	<0.5 UJ	0.13 J	0.15 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.36 J	1.9	0.24 J	0.14 J
Organics - PCBs (ug/kg)																					
AROCLOR-1248	12672-29-6	NA	NA	NA	NA	NA	NA	NA	<68 U	<70 U	<35 U	<38 U	<35 U	<35 U	<40 U	<36 U	<38 U	<35 U	<35 U	<57 U	<33 U
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<68 U	<70 U	23 J	<38 U	<35 U	<35 U	83 J	<36 U	330	36	490	<57 U	30 J
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<68 U	<70 U	21 J	<38 U	<35 U	<35 U	130 J	<36 U	490	25 J	540	<57 U	28 J
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	24 J	<70 U	<35 U	<38 U	<35 U	<35 U	<40 U	<36 U	<38 U	<35 U	<35 U	<57 U	<33 U
AROCLOR-1268	11100-14-4	NA	NA	NA	NA	NA	NA	NA	--	--	<35 U	<38 U	<35 U	<35 U	<40 U	<36 U	<38 U	<35 U	<35 U	<57 U	<33 U
TOTAL PCBS	TPCB	NLL	5,200,000 (J)	1,000 (J,T)	NLL	6,500,000 (J)	1,000 (J,T)	1000 (J)	24 J	ND	44	ND	ND	ND	213	ND	820	61	ND	ND	58

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Particulate Soil Inhalation Criteria	Residential Direct Contact Criteria	Nonresidential Drinking Water Protection Criteria	Nonresidential Particulate Soil Inhalation Criteria	Nonresidential Direct Contact Criteria	MineralB-11	MineralB-6	SB-11	SB-12	SB-14	SS-13	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20
Field Sample ID:									Mineral XRF11	Mineral XRF6	SB-11	SB-12	SB-14	SS-13	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20
Sample Date:									9/7/2007	9/7/2007	10/11/2011	10/11/2011	10/11/2011	10/12/2011	10/12/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011	10/11/2011
Sample Interval (bgs):									0 - 0 in	0 - 0 in	0 - 16 in	6 - 12 in	0 - 14 in	1 - 10 in	0 - 10 in	0 - 6 in	0 - 2 in	0 - 8 in	0 - 6 in	0 - 4 in	0 - 0.75 in
Sample Description:									--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - SVOCs (ug/kg)																					
1,2,4,5-TETRACHLOROBENZENE	95-94-3	1,500,000	3,300 (X)	6.7E+07	7.7E+07	1,500.000	2.9E+07	2.5E+08	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	<170 UJ	**330**	<170 U	<170 U	**290 J**	<170 U
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	<170 U	**250**	<170 U	<170 U	**820**	<170 UJ	<170 U	<170 U	**170 J**	<170 U	<170 U
ACENAPHTHENE	83-32-9	300,000	8,700	1.4E+10	4.1E+07	880,000	6.2E+09	1.3E+08	--	--	<170 U	<170 U	<170 U	<170 UJ	<170 U	<170 UJ	<170 U	<170 U	**380**	<170 U	<170 U
ACENAPHTHYLENE	208-96-8	5,900	ID	2.3E+09	1,600,000	17,000	1E+09	5,200,000	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	<170 UJ	<170 U	<170 U	<170 U	<170 U	**130 J**
ACETOPHENONE	98-86-2	30,000	ID	3.3E+10	4.7E+07 (C)	88,000	1.4E+10	1.5E+08 (C)	--	--	<170 U	<170 U	<170 U	<170 U	**130 J**	**450 J**	<170 U	<170 U	<170 U	<170 U	**220**
ANTHRACENE	120-12-7	41,000	ID	6.7E+10	2.3E+08	41,000	2.9E+10	7.3E+08	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	<170 UJ	<170 U	<170 U	**800**	<170 U	<170 U
BENZALDEHYDE	100-52-7	NA	NA	NA	NA	NA	NA	NA	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	**160 J**	<170 U	<170 U	<170 U	<170 U	<170 U
BENZO(A)ANTHRACENE	56-55-3	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	<170 U	<170 U	<170 U	<170 U	**140 J**	**120 J**	<170 U	**120 J**	**1500 J**	<170 UJ	**680**
BENZO(A)PYRENE	50-32-8	NLL	NLL	1,500,000 (Q)	2,000 (Q)	NLL	1,900,000 (Q)	8,000 (Q)	--	--	<170 U	<170 U	<170 U	<170 U	**120 J**	**110 J**	<170 U	**120 J**	**1300 J**	<170 UJ	**600**
BENZO(B)FLUORANTHENE	205-99-2	NLL	NLL	ID	20,000 (Q)	NLL	ID	80,000 (Q)	--	--	<170 U	<170 U	<170 U	**170 J**	**170 J**	**120 J**	<170 U	**150 J**	<170 UJ	<170 UJ	**860**
BENZO(G,H,I)PERYLENE	191-24-2	NLL	NLL	8E+08 (Q)	2,500,000 (Q)	NLL	3.5E+08 (Q)	7,000,000 (Q)	--	--	<170 U	<170 U	<170 U	<170 U	**120 J**	<170 UJ	**190 J**	<170 U	**640 J**	<170 UJ	**420**
BENZO(K)FLUORANTHENE	207-08-9	NLL	NLL	ID	200,000 (Q)	NLL	ID	800,000 (Q)	--	--	<170 U	<170 U	<170 U	**140 J**	**130 J**	<170 UJ	<170 U	**110 J**	**1300 J**	<170 UJ	**770**
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	NLL	NLL	7E+08	2,800,000	NLL	8.9E+08	1.2E+07 (C)	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	**290 J**	**200**	<170 U	**94 J**	**580**	<170 U
CARBAZOLE	86-74-8	9,400	1,100	6.2E+07	530,000	39,000	7.8E+07	2,400,000	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	<170 UJ	<170 U	<170 U	**330 J**	<170 U	**84 J**
CHRYSENE	218-01-9	NLL	NLL	ID	2,000,000 (Q)	NLL	ID	8,000,000 (Q)	--	--	<170 U	<170 U	**96 J**	**180 J**	**190 J**	**150 J**	**190 J**	**150 J**	**1700 J**	<170 UJ	**980**
DIBENZO(A,H)ANTHRACENE	53-70-3	NLL	NLL	ID	2,000 (Q)	NLL	ID	8,000 (Q)	--	--	<170 U	<170 U	<170 U	<170 U	<170 UJ	<170 UJ	<170 U	<170 U	**300 J**	<170 UJ	**160 J**
DIBENZOFURAN	132-64-9	ID	1,700	6,700,000	ID	ID	2,900,000	ID	--	--	<170 U	<170 U	<170 U	<170 U	**230**	<170 UJ	<170 U	<170 U	**220 J**	<170 U	<170 U
FLUORANTHENE	206-44-0	730,000	5,500	9.3E+09	4.6E+07	730,000	4.1E+09	1.3E+08	--	--	<170 UJ	**140 J**	<170 U	**150 J**	**270 J**	**330 J**	**160 J**	**180 J**	**5200 J**	<170 UJ	**1700 J**
FLUORENE	86-73-7	390,000	5,300	9.3E+09	2.7E+07	890,000	4.1E+09	8.7E+07	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	<170 UJ	<170 U	<170 U	**320 J**	<170 U	<170 U
HEXACHLOROBENZENE	118-74-1	1,800	350	6,800,000	8,900	1,800	8,500,000	37,000	--	--	<170 U	<170 U	<170 U	<170 U	<170 U	<170 UJ	**380**	<170 U	<170 U	**850**	<170 U
INDENO(1,2,3-CD)PYRENE	193-39-5	NLL	NLL	ID	20,000	NLL	ID	80,000	--	--	<170 U	<170 U	<170 U	<170 U	<170 UJ	<170 UJ	<170 U	<170 U	<170 UJ	<170 UJ	**420**
NAPHTHALENE (SVOC)	91-20-3S	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	<170 U	**150 J**	<170 U	<170 U	**600**	<170 UJ	**200**	<170 U	**150 J**	<170 U	<170 U
PHENANTHRENE	85-01-8	56,000	2,100	6,700,000	1,600,000	160,000	2,900,000	5,200,000	--	--	<170 U	**180 J**	<170 U	**110 J**	**420**	**210 J**	**250**	**200**	**4400**	<170 U	**280**
PYRENE	129-00-0	480,000	ID	6.7E+09	2.9E+07	480,000	2.9E+09	8.4E+07	--	--	<170 U	**130 J**	<170 UJ	**120 J**	**200 J**	**270 J**	**130 J**	**140 J**	**4000**	<170 UJ	**1300**
Organics - VOCs (ug/kg)																					
1,2,3-TRIMETHYLBENZENE	526-73-8	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	95-63-6	2,100 (I)	570 (I)	8.2E+10 (I)	3.2E+07 (C,I)	2,100 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-TRIMETHYLBENZENE	108-67-8	1,800 (I)	1,100 (I)	8.2E+10 (I)	3.2E+07 (C,I)	1,800 (I)	3.6E+10 (I)	1E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (VOC)	91-57-6V	57,000	4,200	6.7E+08	8,100,000	170,000	2.9E+08	2.6E+07	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZENE	71-43-2	100 (I)	240 (I,X)	3.8E+08 (I)	180,000 (I)	100 (I)	4.7E+08 (I)	840,000 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--	--
CYCLOHEXANE	110-82-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ETHYLBENZENE	100-41-4	1,500 (I)	360 (I)	1E+10 (I)	2.2E+07 (C,I)	1,500 (I)	1.3E+10 (I)	7.1E+07 (C, I)	--	--	--	--	--	--	--	--	--	--	--	--	--
ISOPROPYLBENZENE	98-82-8	91,000	3,200	5.8E+09	2.5E+07 (C)	260,000	2.6E+09	8E+07 (C)	--	--	--	--	--	--	--	--	--	--	--	--	--
M,P-XYLENE	1330-20-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (VOC)	91-20-3V	35,000	730	2E+08	1.6E+07	100,000	8.8E+07	5.2E+07	--	--	--	--	--	--	--	--	--	--	--	--	--
N-BUTYLBENZENE	104-51-8	1,600	ID	2E+09	2,500,000	4,600	8.8E+08	8,000,000	--	--	--	--	--	--	--	--	--	--	--	--	--
N-PROPYLBENZENE	103-65-1	1,600 (I)	ID	1.3E+09 (I)	2,500,000 (I)	4,600 (I)	5.9E+08 (I)	8,000,000 (I)	--	--	--	--	--	--	--	--	--	--	--	--	--
O-XYLENE	95-47-6	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
TOLUENE	108-88-3	16,000 (I)	5,400 (I)	2.7E+10 (I)	5E+07 (C,I)	16,000 (I)	1.2E+10 (I)	1.6E+08 (C,I)	--	--	--	--	--	--	--	--	--	--	--	--	--
XYLENE - TOTAL		5,600 (I)	820 (I)	2.9E+11 (I)	4.1E+08 (C,I)	5600 (I)	1.3E+11 (I)	1E+09 (I)	--	--	--	--	--	--	--	--	--	--	--	--	--
Asbestos (%)																					
ASBESTOS	ASB	NLL	NLL	1.0 (BB)	ID	NLL	1.0 (BB)	ID	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-2
Sample Analytical Summary - Soil
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Soil Table Footnotes:

- MDEQ Part 201 residential and non-residential generic cleanup criteria and screening levels criteria were originally promulgated December 21, 2002 within the Administrative Rules for Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. This table reflects revisions to the criteria pursuant to the December 2010 Part 201 amendments and new criteria consistent with the provisions of R299.5706a.Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Release Date: December 30, 2013.

- Only detected analytes are listed - Gray rows indicate requested analyses. If no analytes are listed below a gray row then all analytes of that group were either not analyzed or not detected. ND indicates that one or more analyte of that goup was tested and not detected and a -- indicates not analyzed.

- **Bold** values are concentrations detected above the laboratory reporting limit.

- **Shaded values indicate analyte concentration exceed applicable criteria. Color presented is the criteria with the highest value that was exceeded:**

Residential Drinking Water Protection Criteria
Groundwater Surface Water Interface Protection Criteria
Residential Particulate Soil Inhalation Criteria
Residential Direct Contact Criteria
Nonresidential Drinking Water Protection Criteria
Nonresidential Particulate Soil Inhalation Criteria
Nonresidential Direct Contact Criteria

-- = Not analyzed/Not Reported

bgs = Below ground surface

ft = Feet

in = Inches

mg/kg = Milligrams per kilogram.

PCBs = Polychlorinated biphenyls

SVOC = Semi-volatile organic compound

ug/kg = Micrograms per kilogram

VOC = Volatile organic compound

Criteria Footnotes

ID = Insufficient data to develop criterion.

NA = A criterion or value is not available

NLL = Hazardous substance is not likely to leach under most soil conditions.

NLV = Hazardous substance is not likely to volatilize under most conditions.

(B) = Background, as defined in R 299.1(b), may be substituted if higher than the calculated cleanup criterion. Background levels may be less than criteria for some inorganic compounds.

(BB) = The state drinking water standard for asbestos (fibers greater than 10 micrometers in length) is in units of a million fibers per liter of water (MFL). Soil concentrations of asbestos are determined by polarized light microscopy.

(C) = The criterion developed under R 299.20 to R 299.26 exceeds the chemical- specific soil saturation screening level (Csat). The person proposing or implementing response activity shall document whether additional response activity is required to control free-phase liquids or NAPL to protect against risks associated with free-phase liquids by using methods appropriate for the free-phase liquids present. Development of a site-specific Csat or methods presented in R 299.22, R 299.24(5), and R 299.26(8) may be conducted for the relevant exposure pathways.

(D) = Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).

(DD) = Hazardous substance causes developmental effects. Residential direct contact criteria are protective of both prenatal and postnatal exposure. Nonresidential direct contact criteria are protective for a pregnant adult receptor.

(G) = Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg CaCO3/L, use 400 mg CaCO3/L for the FCV calculation. The FCV formula provides values in units of ug/L or ppb. The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV), and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of the 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote. A spreadsheet that may be used to calculate GSI and GSI protection criteria for (G)-footnoted hazardous substances is available on the Department of Environmental Quality (DEQ) internet web site.

(H) = Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the drinking water criterion of 100 ug/L. If analytical data are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI. Cr III soil cleanup criterion for protectio

(I) = Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001), which is adopted by reference in these rules and is available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulation may be purchased, at a cost as of the time of adoption of these rules of $45, from the Superintendent of documents, Government Printing Office, Washington, DC 20401 (stock number 869-044-00155-1), or from the DEQ, Remediation and Redevelopment Division (RRD), 525 West Allegan Street, Lansing, Michigan 48933, at cost.

(J) = Hazardous substance may be present in several isomer forms. Isomer-specific concentrations shall be added together for comparison to criteria.

(M) = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

(P) = Amenable cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with all groundwater criteria. Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria.
Nonresidential direct contact criteria may not be protective of the potential for release of hydrogen cyanide gas. Additional land or resource use restrictions may be necessary to protect for the acute inhalation concerns associated with hydrogen cyanide gas.

(Q) = Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.

(R) = Hazardous substance may exhibit the characteristic of reactivity as defined in 40 C.F.R. §261.23 (revised as of July 1, 2001), which is adopted by reference in these rules and is available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulation may be purchased, at a cost as of the time of adoption of these rules of $45, from the Superintendent of Documents, Government Printing Office, Washington, DC 20401 (stock number 869-044-00155-1), or from the DEQ, RRD, 525 West Allegan Street, Lansing, Michigan 48933, at cost.

(T) = Refer to the federal Toxic Substances Control Act (TSCA), 40 C.F.R. §761, Subpart D and 40 C.F.R. §761, Subpart G, to determine the applicability of TSCA cleanup standards. Subpart D and Subpart G of 40 C.F.R. §761 (July 1, 2001) are adopted by reference in these rules and are available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulations may be purchased, at a cost as of the time of adoption of these rules of $55, from the Superintendent of Documents, Government Printing Office, Washington, DC 20401, or from the DEQ, RRD, 525 West Allegan Street, Lansing, Michigan 48933, at cost. Alternatives to compliance with the TSCA standards listed below are possible under 40 C.F.R. §761 Subpart D. New releases may be subject to the standards identified in 40 C.F.R. §761, Subpart G. Use Part 201 soil direct contact cleanup criteria in the published table if TSCA standards are not applicable.

(X) = The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source. (See R 299.49 Footnotes for generic cleanup criteria tables for additional information.)

(Z) = Mercury is typically measured as total mercury. The generic cleanup criteria, however, are based on data for different species of mercury. Specifically, data for elemental mercury, chemical abstract service (CAS) number 7439976, serve as the basis for the soil volatilization to indoor air criteria, groundwater volatilization to indoor air, and soil inhalation criteria. Data for methyl mercury, CAS number 22967926, serve as the basis for the GSI criterion; and data for mercuric chloride, CAS number 7487947, serve as the basis for the drinking water, groundwater contact, soil direct contact, and the groundwater protection criteria. Comparison to criteria shall be based on species-specific analytical data only if sufficient facility characterization has been conducted to rule out the presence of other species of mercury.

Laboratory Footnotes

J = Estimated result

ND = Not detected

U = Analyte analyzed for but not detected above the reported sample reporting limit.

TABLE 9-3
Sample Analytical Summary - Waste Characterization
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

	Location ID	**CHLL-DRUMWC**	**Hazardous Waste Toxicity Value**
	Field Sample ID	**CHLL-DRUMWC-101514**	
	Sampling Date	**10/15/2014**	
Chemical Name	**Unit**	**Result**	
Inorganics, TCLP			
Arsenic, TCLP	mg/L	0.0076 J	5.0
Barium, TCLP	mg/L	27 B	100
Cadmium, TCLP	mg/L	0.070 J	1.0
Chromium, TCLP	mg/L	0.0018 JB	5.0
Lead, TCLP	mg/L	**800**	5.0
Mercury, TCLP	mg/L	< 0.0020 U	0.2
Selenium, TCLP	mg/L	0.0077 J	1.0
Silver, TCLP	mg/L	0.0036 J	5.0
VOCs, TCLP			
1,1-Dichloroethene	mg/L	< 0.025 U	--
1,2-Dichloroethane	mg/L	< 0.025 U	--
2-Butanone (MEK)	mg/L	< 0.25 U	--
Benzene	mg/L	< 0.025 U	--
Carbon tetrachloride	mg/L	< 0.025 U	--
Chlorobenzene	mg/L	< 0.025 U	--
Chloroform	mg/L	< 0.025 U	--
Tetrachloroethene	mg/L	< 0.025 U	--
Trichloroethene	mg/L	< 0.025 U	--
Vinyl chloride	mg/L	< 0.025 U	--
General Chemistry			
Cyanide, Total	mg/kg	< 0.60 U	--
Sulfide	mg/kg	< 36 U	--
Percent Solids	%	83	--
Percent Moisture	%	17	--

Notes:

Hazardous Waste Toxicity Screening values from Title 40 of the *Code of Federal Regulations* , Chapter 1, Section 261.20-24

-- = No value listed
% = Percent
B = Compound was found in the blank and sample
ID = Identification
J = The concentration is an approximate value
mg/kg = Milligram per kilogram
mg/L = Milligram per liter
SU = Standard unit
TCLP = Toxicity Charateristic Leaching Procedure
U = Analyte analyzed for but not detected above reported sample reporting limit
VOC = Volatile organic compound

TABLE 9-4
Sample Analytical Summary - Groundwater
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria	Water Solubility	Flammability and Explosivity Screening Level	CHLL-GW15	CHLL-GW16	CHLL-GW17		CHLL-GW18	CHLL-GW19	CHLL-GW20	CHLL-GW21	CHLL-GW22
Field Sample ID									CHLL-GW 15 10'-15'	CHLL-GW 16 8'-13'	CHLL-GW 17 10-15'	CHLL-GW 17 10-15' dup	CHLL-GW 18 10-15'	CHLL-GW 19 10-15'	CHLL-GW 20 10'-15'	CHLL-GW 21 10'-15'	CHLL-GW 22 12'-17'
Sample Date									6/13/2014	6/13/2014	6/13/2014	6/13/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014	6/11/2014
Sample Interval (bgs)									10 - 15 ft	8 - 13 ft	10 - 15 ft	10 - 15 ft	10 - 15 ft	10 - 15 ft	10 - 15 ft	10 - 15 ft	12 - 17 ft
Sample Description									--	--	--	Field Duplicate	--	--	--	--	--
Inorganics - Metals (ug/L)																	
ALUMINUM	7429-90-5	50 (V)	50 (V)	NA	NLV	NLV	NA	ID	740	750	1600	1600	6000	1300	1900	600	230
ANTIMONY	7440-36-0	6.0 (A)	6.0 (A)	2.0 (M,X)	NLV	NLV	NA	ID	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	2.3	<1.0 U	<1.0 U
ARSENIC	7440-38-2	10 (A)	10 (A)	10	NLV	NLV	NA	ID	<1.0 U	<1.0 U	3.5	3.7	1.9	12	85	18	220
BARIUM	7440-39-3	2,000 (A)	2,000 (A)	200 (G)	NLV	NLV	NA	ID	41	67	58	60	89	22	75	33	280
CADMIUM	7440-43-9	5.0 (A)	5.0 (A)	1.3 (G,X)	NLV	NLV	NA	ID	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.2	<0.2 U	<0.2 U	<0.2 U
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	100 (A,H)	100 (A,H)	40 (G,H,X)	NLV	NLV	NA	ID	1.9	2.7	2.4	2.4	18	14	3.5	4.7	<1.0 U
COBALT	7440-48-4	40	100	100	NLV	NLV	NA	ID	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
COPPER	7440-50-8	1,000 (E)	1,000 (E)	4.7 (G)	NLV	NLV	NA	ID	1700	39	99	100	180	440	18	130	13
IRON	7439-89-6	300 (E)	300 (E)	NA	NLV	NLV	NA	ID	3600	3400	3100	3400	5700	27000	850	330	12000
LEAD	7439-92-1	4.0 (L)	4.0 (L)	11 (G,X)	NLV	NLV	NA	ID	<1.0 U	<1.0 U	4.8	5	34	7.9	<1.0 U	<1.0 U	<1.0 U
MAGNESIUM	7439-95-4	400,000	1,100,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	50 (E)	50 (E)	1,000 (G,X)	NLV	NLV	NA	ID	200	110	33	33	47	230	13	29	490
NICKEL	7440-02-0	100 (A)	100 (A)	28 (G)	NLV	NLV	NA	ID	8.9	9.3	3.6	3.6	12	21	5.7	5.0	4.4
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	50 (A)	50 (A)	5	NLV	NLV	NA	ID	<1.0 U	<1.0 U	1.6	1.6 J	<1.0 U	<1.0 U	2.0	<1.0 U	<1.0 U
SILVER	7440-22-4	34	98	0.2 (M)	NLV	NLV	NA	ID	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	3.0	<0.2 U	<0.2 U	<0.2 U
SODIUM	7440-23-5	230, 000 (HH)	350,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	5,000 (E)	63 (G)	NLV	NLV	NA	ID	5.1	7.9	9.6	9.9	31	60	24	140	<5.0 U
Inorganics - Cyanide (ug/L)																	
CYANIDE (P,R)	57-12-5	200 (A,P,R)	200 (A,P,R)	5.2 (P,R)	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/L)																	
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<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
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<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
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<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
TOTAL PCBS (J,T)	TPCB	0.5 (A,J,T)	0.5 (A,J,T)	0.2 (J,M,T)	45 (J,S,T)	45 (J,S,T)	44.7 (J,T)	ID	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/L)																	
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	6.0 (A)	6.0 (A)	25	NLV	NLV	340	NA	--	--	--	--	--	--	--	--	--
Other SVOCs									ND	ND	--	--	ND	--	ND	ND	ND
Organics - VOCs (ug/L)																	
1,4-DICHLOROBENZENE	106-46-7	75 (A)	75 (A)	17	16,000	74,000 (S)	73,800	NA	--	--	--	--	--	--	--	--	--
Other - General Chemistry (mg/L)																	
AMMONIA	7664-41-7	10 (N)	10 (N)	(CC)	3,200	7,100	530,000	ID	--	--	--	--	--	--	--	--	--
COD	COD	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
NITROGEN	7727-37-9	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOC	7440-44-0	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL KJELDAHL NITROGEN	TKN	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL PHOSPHORUS	7723-14-0	63	240	1 (EE)	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
CHLORIDE	16887006	250 (E)	250 (E)	(FF)	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
SULFATE	14808798	250 (E)	250 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
Field Parameters																	
Conductivity (mS/cm)	NA	NA	NA	NA	NA	NA	NA	NA	0.148	0.2	0.067	--	0.257	0.114	0.6	0.216	0.97
DO (%)	NA	NA	NA	NA	NA	NA	NA	NA	87.5	89	5.3	--	2.7	27.8	54.8	14.2	16.9
pH	NA	NA	NA	NA	NA	NA	NA	NA	7.2	7.03	6.99	--	5.96	7.66	7.53	7.06	6.95
Temperature (°C)	NA	NA	NA	NA	NA	NA	NA	NA	13.9	12.1	9.6	--	9.8	8.3	9.6	9.5	11.2

Note: Analytical and Criteria Footnotes
are included on the last page of the table.

TABLE 9-4
Sample Analytical Summary - Groundwater
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria	Water Solubility	Flammability and Explosivity Screening Level	CHLL-GW23	CHLL-GW24	CHLL-GW37	CHLL-GW40	CHLL-GW41	CHLL-GW41	CHLL-GW57	CHLL-GW58	CHLL-GW68
Field Sample ID									CHLL-GW 23 10-15'	CHLL-GW 24 10-15'	CHLL-GW 37 9'-14	CHLL-GW-40 10-15	CHLL-GW-41 8-13'	CHLL-GW-41 8-13' DUP	CHLL-GW-57 11-16'	CHLL-GW-58 11-16'	CHLL-GW68-7-12'
Sample Date									6/11/2014	6/11/2014	6/11/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014	5/12/2015
Sample Interval (bgs)									10 - 15 ft	10 - 15 ft	9 - 14 ft	10 - 15 ft	8 - 13 ft	8 - 13 ft	11 - 16 ft	11 - 16 ft	7 - 12 ft
Sample Description									--	--	--	--	--	Field Duplicate	--	--	--
Inorganics - Metals (ug/L)																	
ALUMINUM	7429-90-5	50 (V)	50 (V)	NA	NLV	NLV	NA	ID	--	--	**430**	--	--	--	--	--	--
ANTIMONY	7440-36-0	6.0 (A)	6.0 (A)	2.0 (M,X)	NLV	NLV	NA	ID	--	--	<1.0 U	--	--	--	--	--	--
ARSENIC	7440-38-2	10 (A)	10 (A)	10	NLV	NLV	NA	ID	--	--	<1.0 U	--	--	--	--	--	--
BARIUM	7440-39-3	2,000 (A)	2,000 (A)	200 (G)	NLV	NLV	NA	ID	--	--	**84**	--	--	--	--	--	--
CADMIUM	7440-43-9	5.0 (A)	5.0 (A)	1.3 (G,X)	NLV	NLV	NA	ID	--	--	<0.2 U	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	100 (A,H)	100 (A,H)	40 (G,H,X)	NLV	NLV	NA	ID	--	--	**1.4**	--	--	--	--	--	--
COBALT	7440-48-4	40	100	100	NLV	NLV	NA	ID	--	--	<5.0 U	--	--	--	--	--	--
COPPER	7440-50-8	1,000 (E)	1,000 (E)	4.7 (G)	NLV	NLV	NA	ID	--	--	**59**	--	--	--	--	--	--
IRON	7439-89-6	300 (E)	300 (E)	NA	NLV	NLV	NA	ID	--	--	**880**	--	--	--	--	--	--
LEAD	7439-92-1	4.0 (L)	4.0 (L)	11 (G,X)	NLV	NLV	NA	ID	--	--	**7.9**	--	--	--	--	--	--
MAGNESIUM	7439-95-4	400,000	1,100,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	50 (E)	50 (E)	1,000 (G,X)	NLV	NLV	NA	ID	--	--	**17**	--	--	--	--	--	--
NICKEL	7440-02-0	100 (A)	100 (A)	28 (G)	NLV	NLV	NA	ID	--	--	**5.2**	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	50 (A)	50 (A)	5	NLV	NLV	NA	ID	--	--	<1.0 U	--	--	--	--	--	--
SILVER	7440-22-4	34	98	0.2 (M)	NLV	NLV	NA	ID	--	--	<0.2 U	--	--	--	--	--	--
SODIUM	7440-23-5	230, 000 (HH)	350,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	2,400	5,000 (E)	63 (G)	NLV	NLV	NA	ID	--	--	**72**	--	--	--	--	--	--
Inorganics - Cyanide (ug/L)																	
CYANIDE (P,R)	57-12-5	200 (A,P,R)	200 (A,P,R)	5.2 (P,R)	NLV	NLV	NA	ID	--	--	--	--	--	--	<2.0 U	<2.0 U	--
Organics - PCBs (ug/L)																	
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	**0.62 J**	<0.10 UJ	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	**0.11 J**	<0.10 UJ	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<0.11 UJ	<0.10 UJ	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U
TOTAL PCBS (J,T)	TPCB	0.5 (A,J,T)	0.5 (A,J,T)	0.2 (J,M,T)	45 (J,S,T)	45 (J,S,T)	44.7 (J,T)	ID	**0.73 J**	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/L)																	
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	6.0 (A)	6.0 (A)	25	NLV	NLV	340	NA	--	--	--	--	--	--	--	--	--
Other SVOCs									ND	ND	ND	--	--	--	--	--	ND
Organics - VOCs (ug/L)																	
1,4-DICHLOROBENZENE	106-46-7	75 (A)	75 (A)	17	16,000	74,000 (S)	73,800	NA	--	--	--	--	--	--	--	--	<1.0 U
Other - General Chemistry (mg/L)																	
AMMONIA	7664-41-7	10 (N)	10 (N)	(CC)	3,200	7,100	530,000	ID	--	--	--	--	--	--	--	--	--
COD	COD	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
NITROGEN	7727-37-9	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOC	7440-44-0	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL KJELDAHL NITROGEN	TKN	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL PHOSPHORUS	7723-14-0	63	240	1 (EE)	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	--
CHLORIDE	16887006	250 (E)	250 (E)	(FF)	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	**20**
SULFATE	14808798	250 (E)	250 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--	**6.0**
Field Parameters																	
Conductivity (mS/cm)	NA	NA	NA	NA	NA	NA	NA	NA	**1.07**	**0.82**	**0.217**	**0.335**	**0.128**	--	--	--	**0.232**
DO (%)	NA	NA	NA	NA	NA	NA	NA	NA	**5.5**	**2.2**	**9.4**	**76.5**	**7.0**	--	--	--	--
pH	NA	NA	NA	NA	NA	NA	NA	NA	**7.79**	**7.57**	**7.16**	**6.73**	**7.86**	--	--	--	**7.66**
Temperature (°C)	NA	NA	NA	NA	NA	NA	NA	NA	**12.9**	**10.6**	**11.2**	**17.7**	**10.1**	--	--	--	**7.26**

Note: Analytical and Criteria Footnotes
are included on the last page of the table.

TABLE 9-4
Sample Analytical Summary - Groundwater
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria	Water Solubility	Flammability and Explosivity Screening Level	CHLL-GW69	CHLL-PCI-MW102A	CHLL-PCI-MW102B	CHLL-PCI-MW103A	CHLL-PCI-MW103B	CHLL-PCI-MW103C
Field Sample ID									CHLL-GW69-9-14'	CHLL-PCI-MW-102A-4.8-14.8	CHLL-PCI-MW-102B-25-30	CHLL-PCI-MW-103A-3-13	CHLL-PCI-MW-103B-24-29	CHLL-PCI-MW-103C-49-54
Sample Date									5/12/2015	8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/19/2014
Sample Interval (bgs)									9 - 14 ft	4.8 - 14.8 ft	25 - 30 ft	3 - 13 ft	24 - 29 ft	49 - 54 ft
Sample Description									--	--	--	--	--	--
Inorganics - Metals (ug/L)														
ALUMINUM	7429-90-5	50 (V)	50 (V)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
ANTIMONY	7440-36-0	6.0 (A)	6.0 (A)	2.0 (M,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
ARSENIC	7440-38-2	10 (A)	10 (A)	10	NLV	NLV	NA	ID	--	--	--	--	--	--
BARIUM	7440-39-3	2,000 (A)	2,000 (A)	200 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
CADMIUM	7440-43-9	5.0 (A)	5.0 (A)	1.3 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
CHROMIUM	7440-47-3	100 (A,H)	100 (A,H)	40 (G,H,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
COBALT	7440-48-4	40	100	100	NLV	NLV	NA	ID	--	--	--	--	--	--
COPPER	7440-50-8	1,000 (E)	1,000 (E)	4.7 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
IRON	7439-89-6	300 (E)	300 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
LEAD	7439-92-1	4.0 (L)	4.0 (L)	11 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
MAGNESIUM	7439-95-4	400,000	1,100,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
MANGANESE	7439-96-5	50 (E)	50 (E)	1,000 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
NICKEL	7440-02-0	100 (A)	100 (A)	28 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
SELENIUM	7782-49-2	50 (A)	50 (A)	5	NLV	NLV	NA	ID	--	--	--	--	--	--
SILVER	7440-22-4	34	98	0.2 (M)	NLV	NLV	NA	ID	--	--	--	--	--	--
SODIUM	7440-23-5	230, 000 (HH)	350,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
ZINC	7440-66-6	2,400	5,000 (E)	63 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
Inorganics - Cyanide (ug/L)														
CYANIDE (P,R)	57-12-5	200 (A,P,R)	200 (A,P,R)	5.2 (P,R)	NLV	NLV	NA	ID	--	--	--	--	--	--
Organics - PCBs (ug/L)														
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 UJ	<0.10 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 UJ	<0.10 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	**0.073 J**	<0.10 U
TOTAL PCBS (J,T)	TPCB	0.5 (A,J,T)	0.5 (A,J,T)	0.2 (J,M,T)	45 (J,S,T)	45 (J,S,T)	44.7 (J,T)	ID	ND	ND	ND	ND	**0.073 J**	ND
Organics - SVOCs (ug/L)														
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	6.0 (A)	6.0 (A)	25	NLV	NLV	340	NA	--	--	--	--	--	--
Other SVOCs									ND	--	--	--	--	--
Organics - VOCs (ug/L)														
1,4-DICHLOROBENZENE	106-46-7	75 (A)	75 (A)	17	16,000	74,000 (S)	73,800	NA	<1.0 U	--	--	--	--	--
Other - General Chemistry (mg/L)														
AMMONIA	7664-41-7	10 (N)	10 (N)	(CC)	3,200	7,100	530,000	ID	--	--	--	--	--	--
COD	COD	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
NITROGEN	7727-37-9	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
TOC	7440-44-0	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
TOTAL KJELDAHL NITROGEN	TKN	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
TOTAL PHOSPHORUS	7723-14-0	63	240	1 (EE)	NLV	NLV	NA	ID	--	--	--	--	--	--
CHLORIDE	16887006	250 (E)	250 (E)	(FF)	NLV	NLV	NA	ID	**24**	--	--	--	--	--
SULFATE	14808798	250 (E)	250 (E)	NA	NLV	NLV	NA	ID	**11**	--	--	--	--	--
Field Parameters														
Conductivity (mS/cm)	NA	NA	NA	NA	NA	NA	NA	NA	**0.252**	**0.399**	**0.303**	**0.352**	**0.33**	**0.254**
DO (%)	NA	NA	NA	NA	NA	NA	NA	NA	--	**0.9**	**1.9**	**0.9**	**1.4**	**1.0**
pH	NA	NA	NA	NA	NA	NA	NA	NA	**7.68**	**7.74**	**8.28**	**7.96**	**9.51**	**8.22**
Temperature (°C)	NA	NA	NA	NA	NA	NA	NA	NA	**7.0**	**11.3**	**10.8**	**13.8**	**12**	**12.1**

Note: Analytical and Criteria Footnotes
are included on the last page of the table.

TABLE 9-4
Sample Analytical Summary - Groundwater
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria	Water Solubility	Flammability and Explosivity Screening Level	CHLL-PCI-MW104A		CHLL-PCI-MW104B	CHLL-PCI-MW105A	CHLL-PCI-MW105B	CHLL-PCI-MW108A
Field Sample ID									CHLL-PCI-MW-104A-4.5-14.5	CHLL-PCI-MW-104A-4.5-14.5-DUP	CHLL-PCI-MW-104B-24-29	CHLL-PCI-MW-105A-3.7-8.7	CHLL-PCI-MW-105B-24.5-29.5	CHLL-PCI MW 108A
Sample Date									8/19/2014	8/19/2014	8/19/2014	8/21/2014	8/21/2014	6/11/2014
Sample Interval (bgs)									4.5 - 14.5 ft	4.5 - 14.5 ft	24 - 29 ft	3.7 - 8.7 ft	24.5 -29.5 ft	4 - 8.4 ft
Sample Description									--	Field Duplicate	--	--	--	--
Inorganics - Metals (ug/L)														
ALUMINUM	7429-90-5	50 (V)	50 (V)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
ANTIMONY	7440-36-0	6.0 (A)	6.0 (A)	2.0 (M,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
ARSENIC	7440-38-2	10 (A)	10 (A)	10	NLV	NLV	NA	ID	--	--	--	--	--	--
BARIUM	7440-39-3	2,000 (A)	2,000 (A)	200 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
CADMIUM	7440-43-9	5.0 (A)	5.0 (A)	1.3 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
CHROMIUM	7440-47-3	100 (A,H)	100 (A,H)	40 (G,H,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
COBALT	7440-48-4	40	100	100	NLV	NLV	NA	ID	--	--	--	--	--	--
COPPER	7440-50-8	1,000 (E)	1,000 (E)	4.7 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
IRON	7439-89-6	300 (E)	300 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
LEAD	7439-92-1	4.0 (L)	4.0 (L)	11 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
MAGNESIUM	7439-95-4	400,000	1,100,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
MANGANESE	7439-96-5	50 (E)	50 (E)	1,000 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--
NICKEL	7440-02-0	100 (A)	100 (A)	28 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
SELENIUM	7782-49-2	50 (A)	50 (A)	5	NLV	NLV	NA	ID	--	--	--	--	--	--
SILVER	7440-22-4	34	98	0.2 (M)	NLV	NLV	NA	ID	--	--	--	--	--	--
SODIUM	7440-23-5	230, 000 (HH)	350,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
ZINC	7440-66-6	2,400	5,000 (E)	63 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--
Inorganics - Cyanide (ug/L)														
CYANIDE (P,R)	57-12-5	200 (A,P,R)	200 (A,P,R)	5.2 (P,R)	NLV	NLV	NA	ID	--	--	--	--	--	--
Organics - PCBs (ug/L)														
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	**0.051 J**
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 UJ
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 UJ
TOTAL PCBS (J,T)	TPCB	0.5 (A,J,T)	0.5 (A,J,T)	0.2 (J,M,T)	45 (J,S,T)	45 (J,S,T)	44.7 (J,T)	ID	ND	ND	ND	ND	ND	**0.051 J**
Organics - SVOCs (ug/L)														
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	6.0 (A)	6.0 (A)	25	NLV	NLV	340	NA	--	--	--	--	--	--
Other SVOCs									--	--	--	--	--	--
Organics - VOCs (ug/L)														
1,4-DICHLOROBENZENE	106-46-7	75 (A)	75 (A)	17	16,000	74,000 (S)	73,800	NA	--	--	--	--	--	--
Other - General Chemistry (mg/L)														
AMMONIA	7664-41-7	10 (N)	10 (N)	(CC)	3,200	7,100	530,000	ID	--	--	--	--	--	--
COD	COD	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
NITROGEN	7727-37-9	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
TOC	7440-44-0	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
TOTAL KJELDAHL NITROGEN	TKN	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--
TOTAL PHOSPHORUS	7723-14-0	63	240	1 (EE)	NLV	NLV	NA	ID	--	--	--	--	--	--
CHLORIDE	16887006	250 (E)	250 (E)	(FF)	NLV	NLV	NA	ID	--	--	--	--	--	--
SULFATE	14808798	250 (E)	250 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--
Field Parameters														
Conductivity (mS/cm)	NA	NA	NA	NA	NA	NA	NA	NA	**0.71**	--	**0.7**	--	--	**0.66**
DO (%)	NA	NA	NA	NA	NA	NA	NA	NA	**0.9**	--	**1.3**	--	--	**1.0**
pH	NA	NA	NA	NA	NA	NA	NA	NA	**7.91**	--	**8.1**	--	--	**8.46**
Temperature (°C)	NA	NA	NA	NA	NA	NA	NA	NA	**12.6**	--	**11.2**	--	--	**11.3**

Note: Analytical and Criteria Footnotes
are included on the last page of the table.

TABLE 9-4
Sample Analytical Summary - Groundwater
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria	Water Solubility	Flammability and Explosivity Screening Level	CHLL-PCI-MW108B	CHLL-PCI-MW112A	CHLL-PCI-MW112B	CHLL-PCI-MW113		CHLL-PCI-MW118	MW-10	MW-11
Field Sample ID									CHLL-PCI MW 108B	CHLL-PCI-MW-112A-5.5-15.5	CHLL-PCI-MW-112B-24-29	CHLL-PCI MW 113	CHLL-PCI MW 113 DUP	CHLL-PCI MW 118	MW-10	MW-11
Sample Date									6/11/2014	8/19/2014	8/19/2014	6/11/2014	6/11/2014	6/11/2014	10/12/2011	10/12/2011
Sample Interval (bgs)									24 - 29 ft	5.5 - 15.5 ft	24 - 29 ft	5 - 15 ft	5 - 15 ft	8.5 - 18.5 ft	13.81 - 18.81 ft	7.57 - 12.57 ft
Sample Description									--	--	--	--	Field Duplicate	--	--	--
Inorganics - Metals (ug/L)																
ALUMINUM	7429-90-5	50 (V)	50 (V)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	**1260**	**1180**
ANTIMONY	7440-36-0	6.0 (A)	6.0 (A)	2.0 (M,X)	NLV	NLV	NA	ID	--	--	--	--	--	--	<60 U	<60 U
ARSENIC	7440-38-2	10 (A)	10 (A)	10	NLV	NLV	NA	ID	--	--	--	--	--	--	**2.6 J**	<10 U
BARIUM	7440-39-3	2,000 (A)	2,000 (A)	200 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--	<200 UJ	<200 UJ
CADMIUM	7440-43-9	5.0 (A)	5.0 (A)	1.3 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--	**0.32 J**	**0.2 J**
CALCIUM	7440-70-2	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	**16200 J+**	**45500 J**
CHROMIUM	7440-47-3	100 (A,H)	100 (A,H)	40 (G,H,X)	NLV	NLV	NA	ID	--	--	--	--	--	--	<10 U	<10 U
COBALT	7440-48-4	40	100	100	NLV	NLV	NA	ID	--	--	--	--	--	--	**0.74 J**	**0.48 J**
COPPER	7440-50-8	1,000 (E)	1,000 (E)	4.7 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--	**11.9 J**	**143**
IRON	7439-89-6	300 (E)	300 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	**5640**	**1560**
LEAD	7439-92-1	4.0 (L)	4.0 (L)	11 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--	**2.4 J**	**11.8**
MAGNESIUM	7439-95-4	400,000	1,100,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	<5000 UJ	**5610 J+**
MANGANESE	7439-96-5	50 (E)	50 (E)	1,000 (G,X)	NLV	NLV	NA	ID	--	--	--	--	--	--	**376 J**	**95.8 J**
NICKEL	7440-02-0	100 (A)	100 (A)	28 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--	**4.0 J**	**4.4 J**
POTASSIUM	7440-09-7	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	<5000 U	**5340**
SELENIUM	7782-49-2	50 (A)	50 (A)	5	NLV	NLV	NA	ID	--	--	--	--	--	--	<35 U	<35 U
SILVER	7440-22-4	34	98	0.2 (M)	NLV	NLV	NA	ID	--	--	--	--	--	--	<10 U	<10 U
SODIUM	7440-23-5	230, 000 (HH)	350,000	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	**10800 J+**	**63200**
ZINC	7440-66-6	2,400	5,000 (E)	63 (G)	NLV	NLV	NA	ID	--	--	--	--	--	--	<60 U	<60 U
Inorganics - Cyanide (ug/L)																
CYANIDE (P,R)	57-12-5	200 (A,P,R)	200 (A,P,R)	5.2 (P,R)	NLV	NLV	NA	ID	--	--	--	--	--	--	<10 UJ	**3.0 J**
Organics - PCBs (ug/L)																
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<1 U	<1 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<1 U	<1 U
AROCLOR-1262	37324-23-5	NA	NA	NA	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<1 U	<1 U
TOTAL PCBS (J,T)	TPCB	0.5 (A,J,T)	0.5 (A,J,T)	0.2 (J,M,T)	45 (J,S,T)	45 (J,S,T)	44.7 (J,T)	ID	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/L)																
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	6.0 (A)	6.0 (A)	25	NLV	NLV	340	NA	--	--	--	--	--	--	**2.0 J**	<5 U
Other SVOCs									--	--	--	--	--	--	ND	ND
Organics - VOCs (ug/L)																
1,4-DICHLOROBENZENE	106-46-7	75 (A)	75 (A)	17	16,000	74,000 (S)	73,800	NA	--	--	--	--	--	--	**0.2 J**	<5 U
Other - General Chemistry (mg/L)																
AMMONIA	7664-41-7	10 (N)	10 (N)	(CC)	3,200	7,100	530,000	ID	--	--	--	--	--	--	**0.09**	<0.01 U
COD	COD	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	**13**	**18**
NITROGEN	7727-37-9	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	**0.1**	**0.48**
TOC	7440-44-0	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	**4.2**	**6.9**
TOTAL KJELDAHL NITROGEN	TKN	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	**0.3**	**0.55**
TOTAL PHOSPHORUS	7723-14-0	63	240	1 (EE)	NLV	NLV	NA	ID	--	--	--	--	--	--	**0.13**	**0.25**
CHLORIDE	16887006	250 (E)	250 (E)	(FF)	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--
SULFATE	14808798	250 (E)	250 (E)	NA	NLV	NLV	NA	ID	--	--	--	--	--	--	--	--
Field Parameters																
Conductivity (mS/cm)	NA	NA	NA	NA	NA	NA	NA	NA	**0.74**	**0.478**	**0.53**	**0.429**	--	**0.093**	--	--
DO (%)	NA	NA	NA	NA	NA	NA	NA	NA	**0.9**	**1.3**	**1.1**	**1.2**	--	**85.5**	--	--
pH	NA	NA	NA	NA	NA	NA	NA	NA	**7.49**	**7.56**	**7.65**	**8.36**	--	**7.08**	--	--
Temperature (°C)	NA	NA	NA	NA	NA	NA	NA	NA	**12.8**	**11.8**	**11.6**	**10**	--	**10.5**	--	--

Note: Analytical and Criteria Footnotes
are included on the last page of the table.

TABLE 9-4
Sample Analytical Summary - Groundwater
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Groundwater Table Footnotes:

- MDEQ Part 201 residential and non-residential generic cleanup criteria and screening levels criteria were originally promulgated December 21, 2002 within the Administrative Rules for Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. This table reflects revisions to the criteria pursuant to the December 2010 Part 201 amendments and new criteria consistent with the provisions of R299.5706a.Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Release Date: December 30, 2013.

- Only detected analytes are listed - Gray rows indicate requested analyses. If no analytes are listed below a gray row then all analytes of that group were either not analyzed or not detected. ND indicates that one or more analyte of that goup was tested and not detected and a – indicates not analyzed.

- **Bold** values are concentrations detected above the reporting limit.

- **Shaded values indicate analyte concentration exceed applicable criteria. Color presented is the criteria below with the highest value that was exceeded:**

Residential Drinking Water Criteria
Nonresidential Drinking Water Criteria
Groundwater Surface Water Interface Criteria
Residential Groundwater Volatilization to Indoor Air Inhalation Criteria
Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria
Water Solubility
Flammability and Explosivity Screening Level

-- = Not analyzed/Not reported
bgs = Below ground surface
DO = Dissolved oxygen
ft = Feet
in = Inches
mg/L = Milligrams per liter
PCBs = Polychlorinated biphenyls
SVOC = Semi-volatile organic compound
ug/l = Micrograms per liter
VOC = Volatile organic compound
°C = Degrees Celsius
mS/cm = MilliSiemens per centimeter
% = Percent

Groundwater Table Footnotes:

ID = Insufficient data to develop criterion.
NA = A criterion or value is not available
NLL = Hazardous substance is not likely to leach under most soil conditions.
NLV = Hazardous substance is not likely to volatilize under most conditions.

(A) Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.

(BB) = The state drinking water standard for asbestos (fibers greater than 10 micrometers in length) is in units of a million fibers per liter of water (MFL). Soil concentrations of asbestos are determined by polarized light microscopy.

(D) = Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).

(E) = Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). A notice of aesthetic impact may be employed as an institutional control mechanism if groundwater concentrations exceed the aesthetic drinking water criterion, but do not exceed the applicable health-based drinking water value provided in a table available on the Department of Environmental Quality (DEQ) internet web site. (See R 299.49 Footnotes for generic cleanup criteria tables for additional information)

(G) = Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg $CaCO_3$/L, use 400 mg $CaCO_3$/L for the FCV calculation. The FCV formula provides values in units of ug/L or ppb. The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV), and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of the 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote. A spreadsheet that may be used to calculate GSI and GSI protection criteria for (G)-footnoted hazardous substances is available on the Department of Environmental Quality (DEQ) internet web site.

(H) = Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the drinking water criterion of 100 ug/L. If analytical data are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI. Cr III soil cleanu

(HH) = The residential criterion for sodium is 230,000 ug/l in accordance with the Sodium Advisory Council recommendation and revised Groundwater Discharge Standards.

(I) = Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001), which is adopted by reference in these rules and is available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulation may be purchased, at a cost as of the time of adoption of these rules of $45, from the Superintendent of documents, Government Printing Office, Washington, DC 20401 (stock number 869-044-00155-1), or from the DEQ, Remediation and Redevelopment Division (RRD), 525 West Allegan Street, Lansing, Michigan 48933, at cost.

(J) = Hazardous substance may be present in several isomer forms. Isomer-specific concentrations shall be added together for comparison to criteria.

(L) = Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(9) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules. The generic residential drinking water criterion of 4 ug/L is linked to the generic residential soil direct contact criterion of 400 mg/kg. A higher concentration in the drinking water, up to the state action level of 15 ug/L, may be allowed as a site-specific remedy and still allow for drinking water use, under Section 20120a(2) and 20120b of the NREPA if soil concentrations are appropriately lower than 400 mg/kg. If a site-specific criterion is approved based on this subdivision, a notice shall be filed on the deed for all property where the groundwater concentrations will exceed 4 ug/L to provide notice of the potential for unacceptable risk if soil or groundwater concentrations increase. Acceptable combinations of site-specific soil and drinking water concentrations are presented in a table available on the Department of Environmental Quality (DEQ) internet web site (See R 299.49 Footnotes for generic cleanup criteria tables for additional information).

(M) = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

(N) = The concentrations of all potential sources of nitrate-nitrogen (e.g., ammonia-N, nitrite-N, nitrate-N) in groundwater that is used as a source of drinking water shall not, when added together, exceed the nitrate drinking water criterion of 10,000 ug/L. Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen shall not, when added together, exceed the nitrate drinking water protection criterion of 2.0E+5 ug/kg.

(P) = Amenable cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with all groundwater criteria. Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria. Nonresidential direct contact criteria may not be protective of the potential for release of hydrogen cyanide gas. Additional land or resource use restrictions may be necessary to protect for the acute inhalation concerns associated with hydrogen cyanide gas.

(Q) = Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.

(R) = Hazardous substance may exhibit the characteristic of reactivity as defined in 40 C.F.R. §261.23 (revised as of July 1, 2001), which is adopted by reference in these rules and is available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulation may be purchased, at a cost as of the time of adoption of these rules of $45, from the Superintendent of Documents, Government Printing Office, Washington, DC 20401 (stock number 869-044-00155-1), or from the DEQ, RRD, 525 West Allegan Street, Lansing, Michigan 48933, at cost.

(S) = Criterion defaults to the hazardous substance-specific water solubility limit.

(T) = Refer to the federal Toxic Substances Control Act (TSCA), 40 C.F.R. §761, Subpart D and 40 C.F.R. §761, Subpart G, to determine the applicability of TSCA cleanup standards. Subpart D and Subpart G of 40 C.F.R. §761 (July 1, 2001) are adopted by reference in these rules and are available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulations may be purchased, at a cost as of the time of adoption of these rules of $55, from the Superintendent of Documents, Government Printing Office, Washington, DC 20401, or from the DEQ, RRD, 525 West Allegan Street, Lansing, Michigan 48933, at cost. Alternatives to compliance with the TSCA standards listed below are possible under 40 C.F.R. §761 Subpart D. New releases may be subject to the standards identified in 40 C.F.R. §761, Subpart G. Use Part 201 soil direct contact cleanup criteria in the published table if TSCA standards are not applicable.

(V) = Criterion is the aesthetic drinking water value as required by Section 20120(a)(5) of the NREPA. Concentrations up to 200 ug/L may be acceptable, and still allow for drinking water use, as part of a site-specific cleanup under Section 20120a(2) and 20120b of the NREPA.

(X) = The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source. (See R 299.49 Footnotes for generic cleanup criteria tables for additional information.)

(Z) = Mercury is typically measured as total mercury. The generic cleanup criteria, however, are based on data for different species of mercury. Specifically, data for elemental mercury, chemical abstract service (CAS) number 7439976, serve as the basis for the soil volatilization to indoor air criteria, groundwater volatilization to indoor air, and soil inhalation criteria. Data for methyl mercury, CAS number 22967926, serve as the basis for the GSI criterion; and data for mercuric chloride, CAS number 7487947, serve as the basis for the drinking water, groundwater contact, soil direct contact, and the groundwater protection criteria. Comparison to criteria shall be based on species-specific analytical data only if sufficient facility characterization has been conducted to rule out the presence of other species of mercury.

Laboratory Footnotes:

ND = Not detected
J = Estimated result
U = Analyte analyzed for but not detected above the reported sample reporting limit.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	CHLL-SD36			CHLL-SD37				CHLL-SD40			CHLL-SD41		
Field Sample ID					CHLL-SD-36-0''-6''	CHLL-SD-36-1'-3'	CHLL-SD-36-3'-5'	CHLL-SD-37-0''-6''	CHLL-SD-37-1'-3'	CHLL-SD-37-1'-3' dup	CHLL-SD-37-3'-5'	CHLL-SD-40-0''-6''	CHLL-SD-40-1'-3'	CHLL-SD-40-3'-4'	CHLL-SD-41-0''-6''	CHLL-SD-41-1'-3'	CHLL-SD-41-1'-3' DUP
Sample Date					7/11/2014	7/11/2014	7/11/2014	7/11/2014	7/11/2014	7/11/2014	7/11/2014	7/12/2014	7/12/2014	7/12/2014	7/12/2014	7/12/2014	7/12/2014
Sample Interval (bgs)					0 - 0.5 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	3 - 4 ft	0 - 0.5 ft	1 - 3 ft	1 - 3 ft
Sample Description					SILT, Dark brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Reddish brown	SILT, Reddish brown	Field Duplicate	SILT, Reddish brown	SILT, Sandy, Reddish brown	SILT, Clayey, Reddish brown	SAND, Medium to fine grained, Tan, Wood debris at 3.7 ft	SILT, Coal fragment, Light brown	SILT, Clayey, Reddish brown; SAND, Poorly sorted, Tan, pebbles at 3 ft	Field Duplicate
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**16000**	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	--	--	--	--	--	--	--	--	--	--	**17**	--	--
BARIUM	7440-39-3	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**68 J**	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**1.0**	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	--	--	--	--	--	--	--	--	--	--	<0.2 U	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	--	--	--	--	--	--	--	--	--	--	**46**	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	**27**	--	--
COPPER	7440-50-8	31.6	31.6	149	--	--	--	--	--	--	--	--	--	--	**2300**	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**31000**	--	--
LEAD	7439-92-1	35.8	35.8	128	--	--	--	--	--	--	--	--	--	--	**53**	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**550**	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	**65**	--	--
SELENIUM	7782-49-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--
SILVER	7440-22-4	0.5	NA	NA	--	--	--	--	--	--	--	--	--	--	**4.7**	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	--	--	--	--	--	--	--	--	--	--	**180**	--	--
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	<0.19 U	--	--
Organics - PCBs (ug/kg)																	
AROCLOR-1242	53469-21-9	NA	NA	NA	<440 UJ	<370 U	<310 U	<440 U	<340 U	<350 U	<320 U	<320 U	<340 U	<150 U	<370 U	<250 U	<250 U
AROCLOR-1248	12672-29-6				<440 UJ	<370 U	<310 U	<440 U	<340 U	<350 U	<320 U	<320 U	<340 U	<150 U	<370 U	<250 U	<250 U
AROCLOR-1254	11097-69-1	NA	NA	NA	<440 UJ	<370 U	<310 U	<440 U	<340 U	<350 U	<320 U	<320 U	<340 U	<150 U	<370 U	<250 U	<250 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<440 UJ	<370 U	<310 U	<440 U	<340 U	<350 U	<320 U	<320 U	<340 U	<150 U	<370 U	<250 U	<250 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<440 UJ	<370 U	<310 U	<440 U	<340 U	<350 U	<320 U	<320 U	<340 U	<150 U	<370 U	<250 U	<250 U
TOTAL PCBS	TPCB	59.8	59.8	676	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/kg)																	
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	<2800 U	--	--	--	--	--	--	--	--	--	<2300 U	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	<2200 U	--	--	--	--	--	--	--	--	--	<1900 U	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	<2200 U	--	--	--	--	--	--	--	--	--	<1900 U	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	<2200 U	--	--	--	--	--	--	--	--	--	<1900 U	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	<2200 U	--	--	--	--	--	--	--	--	--	<1900 U	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	<2200 U	--	--	--	--	--	--	--	--	--	<1900 U	--	--
FLUORANTHENE	206-44-0	423	423	2,230	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
FLUORENE	86-73-7	77.4	77.4	536	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	<2200 U	--	--	--	--	--	--	--	--	--	<1900 U	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
PHENANTHRENE	85-01-8	204	204	1,170	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
PYRENE	129-00-0	195	195	1,520	<1100 U	--	--	--	--	--	--	--	--	--	<930 U	--	--
Organics - VOCs																	
					--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	CHLL-SD42			CHLL-SD45			CHLL-SD46				CHLL-SD47		CHLL-SD48	
Field Sample ID					CHLL-SD-42-0''-6''	CHLL-SD-42-1'-3'	CHLL-SD-42-3'-3.7'	CHLL-SD-45-0''-6''	CHLL-SD-45-1'-3'	CHLL-SD-45 3-3.4'	CHLL-SD 46-0''-6''	CHLL-SD 46-1'-3'	CHLL-SD 46-1'-3' DUP	CHLL-SD 46-3'-4.5'	CHLL-SD 47-0''-6''	CHLL-SD 47-1'-2'	CHLL-SD 48-0''-6''	CHLL-SD 48-1'-3'
Sample Date					7/12/2014	7/12/2014	7/12/2014	7/11/2014	7/11/2014	7/11/2014	7/8/2014	7/8/2014	7/8/2014	7/8/2014	7/8/2014	7/8/2014	7/8/2014	7/8/2014
Sample Interval (bgs)					0 - 0.5 ft	1 - 3 ft	3 - 3.7 ft	0 - 0.5 ft	1 - 3 ft	3 - 3.4 ft	0 - 0.5 ft	1 - 3 ft	1 - 3 ft	3 - 4.5 ft	0 - 0.5 ft	1 - 2 ft	0 - 0.5 ft	1 - 3 ft
Sample Description					SILT, Sandy, Reddish brown	SAND, Medium to fine grained, Tan	SAND, Medium to fine grained, Tan	SILT, Sandy, Dark brown	SILT, Sandy, Reddish brown	SAND, Poorly sorted, Light brown to tan	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	Field Duplicate	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Dark brown; SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown
Inorganics - Metals (mg/kg)																		
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	0.5	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																		
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																		
AROCLOR-1242	53469-21-9	NA	NA	NA	<330 U	<130 U	<120 U	<440 UJ	<330 U	<120 U	<470 U	<380 U	<380 U	<360 U	<500 U	<380 U	<440 U	<370 U
AROCLOR-1248	12672-29-6				<330 U	<130 U	<120 U	<440 UJ	<330 U	<120 U	<470 U	<380 U	<380 U	<360 U	<500 U	<380 U	<440 U	<370 U
AROCLOR-1254	11097-69-1	NA	NA	NA	<330 U	<130 U	<120 U	**180 J**	<330 U	<120 U	<470 U	<380 U	<380 U	<360 U	<500 U	<380 U	<440 U	<370 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<330 U	<130 U	<120 U	**260 J**	<330 U	<120 U	<470 U	<380 U	<380 U	<360 U	<500 U	<380 U	<440 U	<370 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<330 U	<130 U	<120 U	<440 UJ	<330 U	<120 U	<470 U	<380 U	<380 U	<360 U	<500 U	<380 U	<440 U	<370 U
TOTAL PCBS	TPCB	59.8	59.8	676	ND	ND	ND	**440 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/kg)																		
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs																		
					--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	CHLL-SD48	CHLL-SD49				CHLL-SD50			CHLL-SD51			CHLL-SD52			CHLL-SD61
Field Sample ID					CHLL-SD 48-3'-5'	CHLL-SD 49-0''-6''	CHLL-SD49-1'-3'	CHLL-SD49-3'-4.5'	CHLL-SD49-3'-4.5' DUP	CHLL-SD 50-0''-6''	CHLL-SD 50-1'-3'	CHLL-SD 50-3'-5'	CHLL-SD 51-0''-6''	CHLL-SD 51-1'-3'	CHLL-SD 51-3'-5'	CHLL-SD52-0''-6''	CHLL-SD52-1'-3'	CHLL-SD-52-3'-4'	CHLL-SD61-0''-6''
Sample Date					7/8/2014	7/8/2014	7/8/2014	7/8/2014	7/8/2014	6/14/2014	6/14/2014	6/14/2014	6/14/2014	6/14/2014	6/14/2014	7/9/2014	7/9/2014	7/9/2014	7/15/2014
Sample Interval (bgs)					3 - 5 ft	0 - 0.5 ft	1 - 3 ft	3 - 4.5 ft	3 - 4.5 ft	0 - 0.5 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	3 - 4 ft	0 - 0.5 ft
Sample Description					SILT, Clayey, Reddish brown	SILT, Dark brown; SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	Field Duplicate	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown to dark brown	SILT, Clayey, Brown	SILT, Clayey, Reddish brown	SILT, Clayey, Reddish brown	SILT, Dark brown; SAND, Poorly sorted, Reddish brown, Slag fragments
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	0.5	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																			
AROCLOR-1242	53469-21-9	NA	NA	NA	<320 U	<490 U	<340 U	<440 U	<420 U	<190 U	<190 U	<180 U	<190 U	<180 U	<200 U	**2500 J**	<390 U	<330 U	<260 U
AROCLOR-1248	12672-29-6				<320 U	<490 U	<340 U	<440 U	<420 U	<190 U	<190 U	<180 U	<190 U	<180 U	<200 U	<2500 UJ	<390 U	<330 U	<260 U
AROCLOR-1254	11097-69-1	NA	NA	NA	<320 U	<490 U	<340 U	<440 U	<420 U	<190 U	<190 U	<180 U	<190 U	<180 U	<200 U	**850 J**	<390 U	<330 U	<260 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<320 U	<490 U	<340 U	<440 U	<420 U	<190 U	<190 U	<180 U	<190 U	<180 U	<200 U	<430 UJ	<390 U	<330 U	<260 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<320 U	<490 U	<340 U	<440 U	<420 U	<190 U	<190 U	<180 U	<190 U	<180 U	<200 U	<430 UJ	<390 U	<330 U	<260 U
TOTAL PCBS	TPCB	59.8	59.8	676	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3350 J**	ND	ND	ND
Organics - SVOCs (ug/kg)																			
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs																			
					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	CHLL-SD63		CHLL-SD64				CHLL-SD86				CHLL-SD87			
Field Sample ID					CHLL-SD63 0''-6''	CHLL-SD63 1'-3'	CHLL-SD64 0-6''	CHLL-SD64 1'-3'	CHLL-SD64 1'-3' DUP	CHLL-SD64 3-3.4'	CHLL-SD-86-0-6''	CHLL-SD-86-1-3'	CHLL-SD-86-1-3' dup	CHLL-SD-86-3-5'	CHLL-SD-87-0-6''	CHLL-SD-87-1-3'	CHLL-SD-87-1-3' dup	CHLL-SD-87-3-5'
Sample Date					7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015
Sample Interval (bgs)					0 - 0.5 ft	1 - 3 ft	0 - 0.5 ft	1 - 3 ft	1 - 3 ft	3 - 3.4 ft	0 - 0.5 ft	1 - 3 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	1 - 3 ft	3 - 5 ft
Sample Description					SILT, Dark brown to reddish brown	SILT, Clayey, Reddish brown; SAND, Silty, Poorly sorted, Reddish brown	SILT, Sandy, Clayey, Reddish brown	SILT, Sandy, Clayey, Reddish brown; SAND, Coarse to medium grained, Slag fragments	Field Duplicate	SILT, Clayey, Reddish brown	SILT, Dark brown	SILT, Reddish-Brown, Clayey, ~2.8' tan to rusty brown silty fine grained sand seam less than 1" thick	Field Duplicate	SILT, Reddish-Brown, Clayey	SILT, Dark brown	SILT, Reddish-Brown, Clayey	Field Duplicate	SILT, Reddish-Brown, Clayey
Inorganics - Metals (mg/kg)																		
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	0.5	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																		
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																		
AROCLOR-1242	53469-21-9	NA	NA	NA	**620 J**	<310 U	**310 J**	<300 U	<290 U	<350 U	<740 U	<410 U	<400 U	<350 U	<560 U	<400 U	<400 U	<370 U
AROCLOR-1248	12672-29-6				<750 UJ	<310 U	<500 UJ	<300 U	<290 U	<350 U	<740 U	<410 U	<400 U	<350 U	<560 U	<400 U	<400 U	<370 U
AROCLOR-1254	11097-69-1	NA	NA	NA	**810 J**	<310 U	**370 J**	<300 U	<290 U	<350 U	<740 U	<410 U	<400 U	<350 U	<560 U	<400 U	<400 U	<370 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<750 UJ	<310 U	<500 UJ	<300 U	<290 U	<350 U	<740 U	<410 U	<400 U	<350 U	<560 U	<400 U	<400 U	<370 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<750 UJ	<310 U	<500 UJ	<300 U	<290 U	<350 U	<740 U	<410 U	<400 U	<350 U	<560 U	<400 U	<400 U	<370 U
TOTAL PCBS	TPCB	59.8	59.8	676	**1430 J**	ND	**680 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/kg)																		
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs																		
					--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	CHLL-SD88			CHLL-SD89				CHLL-SD90				CHLL-SD91		
Field Sample ID					CHLL-SD-88-0-6"	CHLL-SD-88-1-3'	CHLL-SD-88-3-5'	CHLL-SD-89-0-6"	CHLL-SD-89-0.7'-0.9'	CHLL-SD-89-1'-3'	CHLL-SD-89-3'-5'	CHLL-SD-90-0-6"	CHLL-SD-90-1-3'	CHLL-SD-90-3'-5'	CHLL-SD-90-3'-5' dup	CHLL-SD-91-0-6"	CHLL-SD-91-1'-3'	CHLL-SD-91-3'-5'
Sample Date					6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015
Sample Interval (bgs)					0 - 0.5 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	0.7 - 0.9 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	3 - 5 ft	3 - 5 ft	0 - 0.5 ft	1 - 3 ft	3 - 5 ft
Sample Description					SILT, Dark brown	SILT, Reddish-Brown, Clayey	SILT, Reddish-Brown, Clayey	SILT, Dark brown	SILT, Reddish-Brown, Clayey. To 0.7 ft, SILT, Black	SILT, Reddish-Brown, Clayey	SILT, Reddish-Brown, Clayey	SILT, Dark brown	SILT, Reddish-Brown, Clayey	SILT, Reddish-Brown, Clayey	Field Duplicate	SILT, Reddish-Brown, Clayey	SILT, Reddish-Brown, Clayey	SILT, Reddish-Brown, Clayey, stained dark black stringer at 3.5'
Inorganics - Metals (mg/kg)																		
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	**1.9**	**1.0 J**	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	--	--	--	**32**	**28**	--	--	--	--	--	--	--	--	--
BARIUM	7440-39-3	NA	NA	NA	--	--	--	**120**	**75**	--	--	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	<2.0 U	<2.0 U	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	--	--	--	**1.4**	**0.7**	--	--	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	--	--	--	**96**	**95**	--	--	--	--	--	--	--	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	**55**	**63**	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	--	--	--	**2900**	**1800**	--	--	--	--	--	--	--	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	**59000**	**58000**	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	--	--	--	**180**	**100**	--	--	--	--	--	--	--	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	**1700**	**1200**	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	--	--	--	**0.4**	**0.2**	--	--	--	--	--	--	--	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	**1.7**	**2.4**	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	**110**	**130**	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	--	--	--	<2.0 U	<2.0 U	--	--	--	--	--	--	--	--	--
SILVER	7440-22-4	0.5	NA	NA	--	--	--	**3.8**	**2.2**	--	--	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	**150**	**150**	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	--	--	--	**320**	**290**	--	--	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																		
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																		
AROCLOR-1242	53469-21-9	NA	NA	NA	<750 U	<440 U	<350 U	<760 UJ	<500 U	<460 U	<400 U	<450 UJ	<410 U	<370 U	<370 U	<400 UJ	<420 U	<360 U
AROCLOR-1248	12672-29-6				<750 U	<440 U	<350 U	<760 UJ	<500 U	<460 U	<400 U	<450 UJ	<410 U	<370 U	<370 U	<400 UJ	<420 U	<360 U
AROCLOR-1254	11097-69-1	NA	NA	NA	<750 U	<440 U	<350 U	270 J	<500 U	<460 U	<400 U	190 J	<410 U	<370 U	<370 U	160 J	<420 U	<360 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<750 U	<440 U	<350 U	<760 UJ	<500 U	<460 U	<400 U	<450 UJ	<410 U	<370 U	<370 U	<400 UJ	<420 U	<360 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<750 U	<440 U	<350 U	<760 UJ	<500 U	<460 U	<400 U	<450 UJ	<410 U	<370 U	<370 U	<400 UJ	<420 U	<360 U
TOTAL PCBS	TPCB	59.8	59.8	676	ND	ND	ND	**270 J**	ND	ND	ND	**190 J**	ND	ND	ND	**160 J**	ND	ND
Organics - SVOCs (ug/kg)																		
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	<4700 U	<3200 U	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	<3800 U	<2500 U	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	<3800 U	<2500 U	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	<3800 U	<2500 U	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	<3800 U	<2500 U	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	<3800 U	<2500 U	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	<3800 U	<2500 U	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	<1900 U	<1300 U	--	--	--	--	--	--	--	--	--
Organics - VOCs																		
					--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	CHLL-SD95				CHLL-SD99		CHLL-SD103	CHLL-SD104	SD-04	SD-05	TL07-06		
Field Sample ID					CHLL-SD-95-0-6"	CHLL-SD-95-1-3'	CHLL-SD-95-1-3' dup	CHLL-SD-95-3-5'	CHLL - SD - 99 - 0"-6"	CHLL - SD - 99 - 1'-2.5'	CHLL - SD - 103 - 0-2"	CHLL - SD - 104 - 0-2"	SD-04	SD-05	TL07-06 0-6	TL07-06 6-36	TL07-06 36-72
Sample Date					7/11/2015	7/11/2015	7/11/2015	7/11/2015	7/9/2015	7/9/2015	8/20/2015	8/20/2015	10/12/2011	10/12/2011	8/7/2007	8/7/2007	8/7/2007
Sample Interval (bgs)					0 - 0.5 ft	1 - 3 ft	1 - 3 ft	3 - 5 ft	0 - 0.5 ft	1 - 2.5 ft	0 - 0.167 ft	0 - 0.167 ft	0 - 3 in	0 - 3 in	0 - 6 in	6 - 36 in	36 - 72 in
Sample Description					SILT, dark brown, wet, soft, black streaking visible	CLAY, dark brown with purple hue, wet, soft, black streaking visible	Field Duplicate	CLAY, dark brown with purple hue, wet, soft, black streaking visible	SAND, Dark brown with purple hue, wet, loose, medium to coarse, angular	SAND, Dark brown with purple hue, wet, loose, medium to coarse, angular to 1 ft; SILT WITH SAND, dark brown to purple-brown, wet, soft, angular to 1.5 ft; SILT WITH CLAY, dark brown to purple brown, wet, soft, black streaking.	Surface Sediment	Surface Sediment	--	--	--	--	--
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	NA	NA	NA	27000	31000	--	26000	37000	28000	12000	15000	13800	9540	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	1.9	<0.3 U	--	<0.3 U	8.5	0.6	19	27	2.3 J	9.7 J	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	49	19	--	6.1	44	28	91	120	27.3 J-	96.6 J-	32	15	3.1
BARIUM	7440-39-3	NA	NA	NA	220	75	--	83	250	72 J	190 J	530 J	69.2	114	96	50	87
BERYLLIUM	7440-41-7	NA	NA	NA	1.7	1.3	--	1.2	1.6	<2.0 U	<2.0 U	<2.0 U	1.6	1.2 J	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	1.5	<0.2 U	--	<0.2 U	9	0.3	3.4	13	3.2	2.8	2.4	0.25	<0.2 U
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	5820	10900	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	94	110	--	61	320 J	120 J	210	310	33.8	60.2	98	64	74
COBALT	7440-48-4	50	NA	NA	44	65	--	37	28 J	50 J	7.9	12	14.8 J	11.7 J	--	--	--
COPPER	7440-50-8	31.6	31.6	149	3100	1800	--	1600	11000	4300	16000	25000	2340	14800	4000	2700	3000
IRON	7439-89-6	NA	NA	NA	47000	52000	--	47000	64000	47000	30000 J	55000 J	45300	33700	--	--	--
LEAD	7439-92-1	35.8	35.8	128	250	19	--	8.5	820	39 J	1400	2200	223	963	160	19	8.7
LITHIUM	7439-93-2	NA	NA	NA	15	14	--	13	14	16	5.2	6.3	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	22000	36000	--	32000	26000	34000	5700	14000	7120	6040	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	2000	930	--	630	640 J	810 J	320	550	233	285	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	0.5	0.3	--	0.6	0.4	0.4	<0.06 U	0.5	0.19 J	0.28 J	0.39	0.46	0.33
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	99	140	--	85	63	100	27	77	42.1	50.5	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	<0.2 U	<0.2 U	--	<0.2 U	<0.4 U	<2.0 U	2.6	3.4	<3.5 U	<3.5 U	<0.2 U	0.2	<0.2 U
SILVER	7440-22-4	0.5	NA	NA	4.9	6.5	--	6.1	12	8.1	28	14	1.7 J	4.2	10	3.9	2.4
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	567 J	1420 J	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	52.6	52.8	--	--	--
ZINC	7440-66-6	121	121	459	350	310	--	170	1000	450	1200	2900	210	2170	430	190	220
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	0.0001	NA	NA	0.63	<0.20 U	--	<0.18 U	--	--	<0.12 U	<0.13 U	<0.5 UJ	0.57 J	--	--	--
Organics - PCBs (ug/kg)																	
AROCLOR-1242	53469-21-9	NA	NA	NA	<1100 U	<390 U	<390 U	<360 U	<300 UJ	<350 U	<250 U	<250 UJ	<130 UJ	<110 UJ	<200 U	<190 U	<170 U
AROCLOR-1248	12672-29-6				<1100 U	<390 U	<390 U	<360 U	290 J	<350 U	<370 U	<250 UJ	<130 UJ	<110 UJ	<200 U	<190 U	<170 U
AROCLOR-1254	11097-69-1	NA	NA	NA	<1100 U	<390 U	<390 U	<360 U	340 J	<350 U	1600	330 J	<130 UJ	480 J	130	<190 U	<170 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<1100 U	<390 U	<390 U	<360 U	<300 UJ	<350 U	<250 U	<250 UJ	92 J	410 J	<200 U	<190 U	<170 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<1100 U	<390 U	<390 U	<360 U	<300 UJ	<350 U	<250 U	210 J	<130 UJ	<110 UJ	<200 U	<190 U	<170 U
TOTAL PCBS	TPCB	59.8	59.8	676	ND	ND	ND	ND	630 J	ND	1600	540 J	92	890	130	ND	ND
Organics - SVOCs (ug/kg)																	
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	340 J	<170 UJ	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	<6900 U	<2500 U	<2400 U	<2200 U	<9400 U	<2200 U	<1600 U	<1600 U	<170 UJ	700 J	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	3900 J	<170 UJ	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	780 J	<170 UJ	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	<170 UJ	300 J	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	3800 J	<170 UJ	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	11000 J	<170 UJ	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	<5500 U	<2000 U	<1900 U	<1800 U	<7500 U	<1800 U	<1200 U	<1300 U	8800 J	<170 UJ	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	<5500 U	<2000 U	<1900 U	<1800 U	<7500 U	<1800 U	<1200 U	<1300 U	9500 J	<170 UJ	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	<5500 U	<2000 U	<1900 U	<1800 U	<7500 U	<1800 U	<1200 U	<1300 U	4300 J	<170 UJ	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	<5500 U	<2000 U	<1900 U	<1800 U	<7500 U	<1800 U	<1200 U	<1300 U	9100 J	<170 UJ	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	660 J	<170 UJ	--	--	--
CHRYSENE	218-01-9	166	166	1,290	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	11000 J	<170 UJ	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	<5500 U	<2000 U	<1900 U	<1800 U	<7500 U	<1800 U	<1200 U	<1300 U	1400 J	<170 UJ	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	43000 J	<170 UJ	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	1500 J	<170 UJ	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	<5500 U	<2000 U	<1900 U	<1800 U	<7500 U	<1800 U	<1200 U	<1300 U	4100 J	<170 UJ	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	1400 J	400 J	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	11000 J	630 J	--	--	--
PYRENE	129-00-0	195	195	1,520	<2800 U	<990 U	<970 U	<890 U	<3800 U	<880 U	<620 U	<640 U	30000 J	<170 UJ	--	--	--
Organics - VOCs																	
					--	--	--	--	--	--	ND	ND	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	TL07-07				TL07-08			TL07-09		TL07-09	TL07-10		
Field Sample ID					TL07-07 0-6	TL07-07 6-36	TL07-07 36-72	TL07-07 36-72 D	TL07-08 0-6	TL07-08 6-36	TL07-08 36-72	TL07-09 0-6	TL07-09 6-36	TL07-09 36-72	TL07-10 0-6	TL07-10 6-36	TL07-10 36-72
Sample Date					8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/7/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007
Sample Interval (bgs)					0 - 6 in	6 - 36 in	36 - 72 in	36 - 72 in	0 - 6 in	6 - 36 in	36 - 72 in	0 - 6 in	6 - 36 in	36 - 72 in	0 - 6 in	6 - 36 in	36 - 72 in
Sample Description					--	--	--	Field Duplicate	--	--	--	--	--	--	--	--	--
Inorganics - Metals (mg/kg)																	
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	40	13	2.7	4.0	47	18	4.0	38	12	3.3	23	7.7	4.9
BARIUM	7440-39-3	NA	NA	NA	94	58	71	81	110	70	86	83	47	85	80	74	140
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	1.3	0.23	<0.2 U	<0.2 U	0.93	<0.2 U	<0.2 U	0.52	<0.2 U	<0.2 U	0.66	0.34	0.37
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	96	92	42	51	97	77	48	79	90	77	85	84	57
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	4300	2900	1900	2700	4800	3500	2600	6300	3800	3400	3400	2600	2100
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	320	34	7.9	7.8	350	55	9.7	160	21	10	100	39	14
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	0.21	0.43	0.13	0.19	0.19	0.35	0.2	0.29	0.39	0.31	0.44	0.32	0.28
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.46
SILVER	7440-22-4	0.5	NA	NA	6.4	4.3	2.0	3.0	5.6	4.2	2.9	6.6	3.2	2.5	4.7	2.7	2.2
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	670	240	120	160	930	270	150	570	200	210	260	220	180
Inorganics - Cyanide (mg/kg)																	
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																	
AROCLOR-1242	53469-21-9	NA	NA	NA	<230 U	<200 U	<150 U	<160 U	<220 U	<180 U	<150 U	<240 U	<170 U	<170 U	<180 U	<170 U	<240 U
AROCLOR-1248	12672-29-6				<230 U	<200 U	<150 U	<160 U	<220 U	<180 U	<150 U	<240 U	<170 U	<170 U	<180 U	<170 U	<240 U
AROCLOR-1254	11097-69-1	NA	NA	NA	320	<200 U	<150 U	<160 U	210	<180 U	<150 U	<240 U	<170 U	<170 U	<180 U	<170 U	<240 U
AROCLOR-1260	11096-82-5	NA	NA	NA	<230 U	<200 U	<150 U	<160 U	<220 U	<180 U	<150 U	<240 U	<170 U	<170 U	<180 U	<170 U	<240 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<230 U	<200 U	<150 U	<160 U	110	<180 U	<150 U	<240 U	<170 U	<170 U	<180 U	<170 U	<240 U
TOTAL PCBS	TPCB	59.8	59.8	676	320	ND	ND	ND	320	ND	ND	ND	ND	ND	ND	ND	ND
Organics - SVOCs (ug/kg)																	
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs																	
					--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	TL07-12			TL07-14			TL07-17					TL07-21	TL07-22	TL07-23	
Field Sample ID					TL07-12 0-6	TL07-12 6-36	TL07-12 36-71	TL07-14 0-6	TL07-14 6-35	TL07-14 35-49	TL07-17 P	TL07-17 0-6	TL07-17 6-36	TL07-17 6-36 D	TL07-17 36-72	TL07-21	TL07-22	TL07-23	TL07-23 D
Sample Date					8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007
Sample Interval (bgs)					0 - 6 in	6 - 36 in	36 - 71 in	0 - 6 in	6 - 35 in	35 - 49 in	0 - 2 in	0 - 6 in	6 - 36 in	6 - 36 in	36 - 72 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
Sample Description					--	--	--	--	--	--	--	--	--	Field Duplicate	--	--	--	--	Field Duplicate
Inorganics - Metals (mg/kg)																			
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	93	11	1.3	12	3.5	2.7	150	37	18	17	3.4	59	310	70	79
BARIUM	7440-39-3	NA	NA	NA	73	66	26	100	48	38	110	61	53	52	58	150	210	160	160
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	3.6	<0.2 U	<0.2 U	0.46	<0.2 U	<0.2 U	1.9	0.72	<0.2 U	<0.2 U	<0.2 U	1.8	1.8	1.1	1.4
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	73	59	8.3	25	21	19	64	73	69	66	48	89	57	52	53
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	7600	4200	90	3800	8000	9800	4400	3200	3100	3200	3000	3200	2500	3800	3900
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	280	24	2.2	47	9.9	7.1	430	170	21	19	6.8	250	550	240	260
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	0.19	0.29	<0.05 U	<0.05 U	<0.05 U	<0.05 U	0.57	0.17	0.38	0.4	0.23	0.48	0.6	0.54	0.6
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	<0.2 U	<0.2 U	<0.2 U	0.45	<0.2 U	<0.2 U	0.78	0.2	<0.2 U	<0.2 U	<0.2 U	0.76	0.93	0.89	0.89
SILVER	7440-22-4	0.5	NA	NA	6.3	3.4	0.17	2.0	7.3	7.9	6.8	4.3	4.7	4.9	1.9	5.1	6.4	5.2	5.5
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	860	220	17	140	100	97	340	460	230	210	170	270	270	210	240
Inorganics - Cyanide (mg/kg)																			
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																			
AROCLOR-1242	53469-21-9	NA	NA	NA	<240 U	<170 U	<130 U	<220 U	<130 U	<140 U	<450 U	<250 U	<190 U	<190 U	<170 U	<530 U	<680 U	<720 U	<660 U
AROCLOR-1248	12672-29-6				<240 U	<170 U	<130 U	<220 U	<130 U	<140 U	<450 U	<250 U	<190 U	<190 U	<170 U	<530 U	<680 U	<720 U	<660 U
AROCLOR-1254	11097-69-1	NA	NA	NA	510	<170 U	<130 U	<220 U	<130 U	<140 U	1100	160	<190 U	<190 U	<170 U	340	450	620	730
AROCLOR-1260	11096-82-5	NA	NA	NA	<240 U	<170 U	<130 U	<220 U	<130 U	<140 U	500	<250 U	<190 U	<190 U	<170 U	<530 U	<680 U	<720 U	<660 U
AROCLOR-1262	37324-23-5	NA	NA	NA	<240 U	<170 U	<130 U	<220 U	<130 U	<140 U	500	<250 U	<190 U	<190 U	<170 U	<530 U	<680 U	<720 U	<660 U
TOTAL PCBS	TPCB	59.8	59.8	676	510	ND	ND	ND	ND	ND	1100	160	ND	ND	ND	340	450	620	730
Organics - SVOCs (ug/kg)																			
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs																			
					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	TL07-24	TL07-25	TL07-26	TL07-27	TL07-34	TL07-35		TL07-36	TL08-029	TL08-037	TL08-052	TL08-053	TL08-056	TL08-074
Field Sample ID					TL07-24	TL07-25	TL07-26	TL07-27	TL07-34	TL07-35	TL07-35D	TL07-36	TL08-029	TL08-037	TL08-052	TL08-053	TL08-056	TL08-074
Sample Date					8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/26/2008	8/27/2008	8/27/2008	8/26/2008	8/26/2008	8/28/2008
Sample Interval (bgs)					0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft
Sample Description					--	--	--	--	--	--	Field Duplicate	--	--	--	--	--	--	--
Inorganics - Metals (mg/kg)																		
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	47	42	40	30	13	14	16	19	--	--	--	--	--	--
BARIUM	7440-39-3	NA	NA	NA	140	220	170	95	78	100	110	130	--	--	--	--	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	1.3	1.0	1.2	0.77	0.25	0.39	0.39	0.47	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	56	45	46	41	17	23	25	27	--	--	--	--	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	2200	1800	1700	1600	1200	1200	1300	2200	--	--	--	--	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	180	120	120	120	38	47	50	71	--	--	--	--	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	0.48	0.55	0.49	0.39	0.11	0.2	0.22	0.31	--	--	--	--	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	0.96	0.98	0.85	0.94	0.23	0.43	0.4	0.35	--	--	--	--	--	--
SILVER	7440-22-4	0.5	NA	NA	5.0	4.3	4.5	3.2	1.2	1.7	1.7	2.4	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	240	200	200	150	68	96	100	120	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)																		
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)																		
AROCLOR-1242	53469-21-9	NA	NA	NA	<650 U	<760 U	<690 U	<760 U	<210 U	<340 U	<360 U	<400 U	--	--	--	--	--	--
AROCLOR-1248	12672-29-6				<650 U	<760 U	<690 U	<760 U	<210 U	<340 U	<360 U	<400 U	--	--	--	--	--	--
AROCLOR-1254	11097-69-1	NA	NA	NA	<650 U	<760 U	<690 U	<760 U	<210 U	<340 U	<360 U	<400 U	--	--	--	--	--	--
AROCLOR-1260	11096-82-5	NA	NA	NA	<650 U	<760 U	<690 U	<760 U	<210 U	<340 U	<360 U	<400 U	--	--	--	--	--	--
AROCLOR-1262	37324-23-5	NA	NA	NA	<650 U	<760 U	<690 U	<760 U	<210 U	<340 U	<360 U	<400 U	--	--	--	--	--	--
TOTAL PCBS	TPCB	59.8	59.8	676	ND	ND	ND	ND	ND	ND	ND	ND	<140 UJ	<44 U	<110 UJ	<26 U	<58 U	<150 UJ
Organics - SVOCs (ug/kg)																		
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organics - VOCs																		
					--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Threshold Effect Concentration (TEC)	Probable Effect Concentration (PEC)	TL08-075	TL08-076	TL08-077	TL08-078	TL08-08	TL08-108	TL08-137
Field Sample ID					TL08-075	TL08-076	TL08-077	TL08-078	TL08-08	TL08-108	TL08-137
Sample Date					8/28/2008	8/28/2008	8/28/2008	8/28/2008	8/26/2008	8/26/2008	8/27/2008
Sample Interval (bgs)					0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft	0 - 0 ft
Sample Description					--	--	--	--	--	--	--
Inorganics - Metals (mg/kg)											
ALUMINUM	7429-90-5	NA	NA	NA	--	--	--	--	--	--	--
ANTIMONY	7440-36-0	NA	NA	NA	--	--	--	--	--	--	--
ARSENIC	7440-38-2	9.79	9.79	33.0	--	--	--	--	--	--	--
BARIUM	7440-39-3	NA	NA	NA	--	--	--	--	--	--	--
BERYLLIUM	7440-41-7	NA	NA	NA	--	--	--	--	--	--	--
CADMIUM	7440-43-9	0.99	0.99	4.98	--	--	--	--	--	--	--
CALCIUM	7440-70-2	NA	NA	NA	--	--	--	--	--	--	--
CHROMIUM	7440-47-3	43.4	43.4	111	--	--	--	--	--	--	--
COBALT	7440-48-4	50	NA	NA	--	--	--	--	--	--	--
COPPER	7440-50-8	31.6	31.6	149	--	--	--	--	--	--	--
IRON	7439-89-6	NA	NA	NA	--	--	--	--	--	--	--
LEAD	7439-92-1	35.8	35.8	128	--	--	--	--	--	--	--
LITHIUM	7439-93-2	NA	NA	NA	--	--	--	--	--	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	--	--	--	--	--	--	--
MANGANESE	7439-96-5	NA	NA	NA	--	--	--	--	--	--	--
MERCURY	7439-97-6	0.174	0.18	1.06	--	--	--	--	--	--	--
MOLYBDENUM	7439-98-7	NA	NA	NA	--	--	--	--	--	--	--
NICKEL	7440-02-0	22.7	22.7	48.6	--	--	--	--	--	--	--
SELENIUM	7782-49-2	NA	NA	NA	--	--	--	--	--	--	--
SILVER	7440-22-4	0.5	NA	NA	--	--	--	--	--	--	--
SODIUM	7440-23-5	NA	NA	NA	--	--	--	--	--	--	--
VANADIUM	7440-62-2	NA	NA	NA	--	--	--	--	--	--	--
ZINC	7440-66-6	121	121	459	--	--	--	--	--	--	--
Inorganics - Cyanide (mg/kg)											
CYANIDE	57-12-5	0.0001	NA	NA	--	--	--	--	--	--	--
Organics - PCBs (ug/kg)											
AROCLOR-1242	53469-21-9	NA	NA	NA	--	--	--	--	--	--	--
AROCLOR-1248	12672-29-6				--	--	--	--	--	--	--
AROCLOR-1254	11097-69-1	NA	NA	NA	--	--	--	--	--	--	--
AROCLOR-1260	11096-82-5	NA	NA	NA	--	--	--	--	--	--	--
AROCLOR-1262	37324-23-5	NA	NA	NA	--	--	--	--	--	--	--
TOTAL PCBS	TPCB	59.8	59.8	676	**90 J**	**26 J**	<130 UJ	<89 UJ	<140 UJ	<120 UJ	<39 U
Organics - SVOCs (ug/kg)											
1,1'-BIPHENYL	92-52-4	NA	NA	NA	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE (SVOC)	91-57-6S	20.2	NA	NA	--	--	--	--	--	--	--
ACENAPHTHENE	83-32-9	6.71	NA	NA	--	--	--	--	--	--	--
ACENAPHTHYLENE	208-96-8	5.87	NA	NA	--	--	--	--	--	--	--
ACETOPHENONE	98-86-2	NA	NA	NA	--	--	--	--	--	--	--
ANTHRACENE	120-12-7	57.2	57.2	845	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	56-55-3	108	108	1,050	--	--	--	--	--	--	--
BENZO(A)PYRENE	50-32-8	150	150	1,450	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	205-99-2	10,400	NA	NA	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	191-24-2	170	NA	NA	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	207-08-9	240	NA	NA	--	--	--	--	--	--	--
CARBAZOLE	86-74-8	NA	NA	NA	--	--	--	--	--	--	--
CHRYSENE	218-01-9	166	166	1,290	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	53-70-3	33	33.0	NA	--	--	--	--	--	--	--
FLUORANTHENE	206-44-0	423	423	2,230	--	--	--	--	--	--	--
FLUORENE	86-73-7	77.4	77.4	536	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	193-39-5	200	NA	NA	--	--	--	--	--	--	--
NAPHTHALENE (SVOC)	91-20-3S	176	176	561	--	--	--	--	--	--	--
PHENANTHRENE	85-01-8	204	204	1,170	--	--	--	--	--	--	--
PYRENE	129-00-0	195	195	1,520	--	--	--	--	--	--	--
Organics - VOCs											
					--	--	--	--	--	--	--

Note: Analytical and Criteria Footnotes are included on the last page of the table.

TABLE 9-5
Sample Analytical Summary - Sediment
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Sediment Table Footnotes:

- ESLs, TECs, and PECs are adapted from Appendix A and Appendix B of Michigan Department of Environmental Quality - Remediation and Redevelopment Division Operational Memorandum No. 4 Attachment 3, Interim Final August 2, 2006

- Only detected analytes are listed - Gray rows indicate requested analyses. If no analytes are listed below a gray row then all analytes of that group were either not analyzed or not detected. ND indicates that one or more analyte of that goup was tested and not detected and a -- indicates not analyzed.

- **Bold** values are concentrations detected above the reporting limit.

- **Shaded values indicate analyte concentration exceed applicable criteria. Color presented is the criteria with the highest value that was exceeded:**

EPA Region 5 RCRA ESLs dated August 22, 2003
TECs from MacDonald *et al.* 2000
PECs from MacDonald *et al.* 2000

-- = Not analyzed/Not Reported

bgs = Below ground surface

ESL = Ecological Screening Level

ft = Feet

in = Inches

mg/kg = Milligrams per kilogram.

PCBs = Polychlorindated biphenyls

PEC = Probable Effect Concentration

RCRA = Resource Conservation and Recovery Act

SVOC = Semi-volatile organic compound

TEC = Threshold Effect Concentration

ug/kg = Micrograms per kilogram

VOC = Volatile organic compound

Criteria Footnotes:

NA = A criterion or value is not available

Laboratory Footnotes:

J = Estimated result

ND = Analyte analyzed for but not detected above the reported sample reporting limit.

U = Analyte analyzed for but not detected above the reported sample reporting limit.

TABLE 9-6
Sample Analytical Summary - Surface Water
Hubbell Processing Area
Abandoned Mining Wastes - Torch Lake Non-Superfund Site

Station Name	CAS Number	EPA Region 5 Ecological Screening Level	Rule 57 HCV Drink	Rule 57 HNV Drink	Rule 57 WV	CHLL-SW05	CHLL-SW06		CHLL-SW07	CHLL-SW10	CHLL-SW11	CHLL-SW12	SW-04	SW-05
Field Sample ID						CHLL-SW05-41.8-42.8'	CHLL-SW06-75.6-76.6'	CHLL-SW06-75.6-76.6'- DUP	CHLL-SW07-70.2-71.2'	CHLL - SW - 10 - 4.08-5.08'	CHLL - SW - 11 - 44.5-45.5'	CHLL-SW12	SW-04	SW-05
Sample Date						6/1/2015	6/1/2015	6/1/2015	6/1/2015	7/8/2015	7/9/2015	8/20/2015	10/12/2011	10/12/2011
Sample Interval						41.8 - 42.8 ft	75.6 - 76.6 ft	75.6 - 76.6 ft	70.2 - 71.2 ft	4.08 - 5.08 ft	44.5-45.5 ft	--	0 - 6 in	0 - 6 in
Inorganics - Metals (ug/l)								Field Duplicate						
ALUMINUM	7429-90-5	NA	NA	NA	NA	--	--	--	--	--	--	**9600**	**8.5 J**	**--**
ANTIMONY	7440-36-0	80	NA	1.7	NA	--	--	--	--	--	--	**49**	<60 U	**--**
ARSENIC	7440-38-2	148	10	10	NA	--	--	--	--	--	--	**300**	<10 U	**--**
BARIUM	7440-39-3	220	NA	1,900	NA	--	--	--	--	--	--	**1900**	**27.3 J**	**--**
BORON	7440-42-8	NA	NA	NA	NA	--	--	--	--	--	--	**190**	--	--
CADMIUM	7440-43-9	0.15	NA	2.5	NA	--	--	--	--	--	--	**18**	--	--
CHROMIUM	7440-47-3	42	NA	120	NA	--	--	--	--	--	--	**97**	--	--
COBALT	7440-48-4	24	NA	ID	NA	--	--	--	--	--	--	**8.6**	--	--
COPPER	7440-50-8	1.58	NA	470	NA	--	--	--	--	--	--	**130000**	--	--
IRON	7439-89-6	NA	NA	NA	NA	--	--	--	--	--	--	**22000**	--	--
LEAD	7439-92-1	1.17	NA	14	NA	--	--	--	--	--	--	**5700**	--	--
MAGNESIUM	7439-95-4	NA	NA	NA	NA	--	--	--	--	--	--	**8400**	--	--
MANGANESE	7439-96-5	NA	NA	1,300	NA	--	--	--	--	--	--	**400**	--	--
MERCURY	7439-97-6	0.0013	NA	0.0018	0.0013	--	--	--	--	--	--	**2.0**	--	--
NICKEL	7440-02-0	28.9	NA	2,600	NA	--	--	--	--	--	--	**80**	--	--
SILVER	7440-22-4	0.12	NA	130	NA	--	--	--	--	--	--	**32**	--	--
ZINC	7440-66-6	65.7	NA	3,300	NA	--	--	--	--	--	--	**6400**	--	--
Organics - PCBs (ug/l)														
AROCLOR-1254	11097-69-1	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	**1.0 J**	<1 U	<1 U
AROCLOR-1260	11096-82-5	NA	NA	NA	NA	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	<0.10 U	**1.3 J**	<1 U	<1 U
TOTAL PCBS	TPCB	0.00012	0.000026	NLS	0.00012	ND	ND	ND	ND	ND	ND	**2.3 J**	ND	ND
Organics - SVOCs (ug/l)														
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	0.3	25	120	NA	--	--	--	--	--	--	--	**3.5 J**	<5 UJ
Other SVOCs						--	--	--	--	--	ND	ND	ND	ND
Organics - VOCs (ug/l)														
TOLUENE	108-88-3	253	NA	5600	NA	--	--	--	--	--	--	<1.0 U	<5 U	0.12 J
Field Parameters														
Conductivity (mS/cm)		NA	NA	NA	NA	--	--	--	--	**146.7**	**122.8**	--	--	--
DO (%)		NA	NA	NA	NA	--	--	--	--	**6.71**	**9.03**	--	--	--
pH		NA	NA	NA	NA	--	--	--	--	**8.28**	**7.82**	--	--	--
Temperature (°C)		NA	NA	NA	NA	--	--	--	--	**21.9**	**14.5**	--	--	--
Turbidity (NTU)		NA	NA	NA	NA	--	--	--	--	**3.9**	**10.3**	--	--	--

Surface Water Table Footnotes:

- MDEQ Rule 57 values derived from the Michigan Department of Environmental Quality, Water Bureau, Water Resources Protection, filed with the Secretary of State on January 13, 2006. Part 4 Water Quality Standards, Rule 323.1057 Toxic Substances, as amended. Updated on February 27, 2014.
- ESLs are adapted from Appendix A and Appendix B of Michigan Department of Environmental Quality - Remediation and Redevelopment Division Operational Memorandum No. 4 Attachment 3, Interim Final August 2, 2006
- Only detected analytes are listed - Gray rows indicate requested analyses. If no analytes are listed below a gray row then all analytes of that group were either not analyzed or not detected. ND indicates that one or more analyte of that goup was tested and not detected and a -- indicates not analyzed.
- **Bold** values are concentrations detected above the reporting limit.
- **Shaded values indicate**

EPA Region 5 RCRA ESLs dated August 22, 2003
MDEQ Rule 57 Water Quality Value, HCV, drinking water source, dated February 27, 2014
MDEQ Rule 57 Water Quality Value, HNV, drinking water source, dated February 27, 2014
MDEQ Rule 57 Water Quality Value, WV, dated February 27, 2014

-- = Not analyzed/Not reported
bgs = below ground surface
EPA = United States Environmental Protection Agency
ESL = Ecological Screening Level
DO = Dissolved Oxygen
ft = feet
HCV = Human Non-Cancer Value
HNV = Human Cancer Value
in = Inches
MDEQ = Michigan Department of Environmental Quality
mS/cm = MilliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
PCBs = Polychlorindated biphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = Semi-volatile organic compound
ug/l = Micrograms per liter
VOC = Volatile organic compound
WV = Wildlife Value
°C = Degrees Celsius
% = Percent

Criteria Footnotes:

NA = a criterion or value is not available
NLS = no literature search has been conducted

Laboratory Footnotes:

J = estimated result
ND = not detected
U = analyte analyzed for but not detected above the reported sample reporting limit.