MEMORANDUM

DATE: October 3, 2012

TO: Larry Setchell, Helsell Fetterman LLP

FROM: Peter Smiltins and Mike Ehlebracht, Hart Crowser, Inc.

RE: **Historical Site Cleanup Summary**
Northwest Plating Site
17892-00

CC: John Drake, Washington Industries, Inc.

This memorandum summarizes the cleanup work completed in 2005 at the Northwest Plating Site in Seattle, Washington, on behalf of Washington Industries, Inc. Site soil and groundwater was contaminated with chromium, trichloroethene (TCE), and other chemicals from the electroplating facility that formerly operated at the site. The objective of the cleanup work was to use available funds to decontaminate as much of the site building as possible and to provide contaminant source control to the extent practicable, so that the building could be returned to productive use. Washington Industries contracted Hart Crowser to develop a remedial approach for the site and to oversee implementation of the approach. Competitive bids were sought for the demolition, decontamination, and excavation work, which was awarded to NRC Environmental, Inc.

The cleanup work, completed in 2005, consisted of:

- Building decontamination and limited demolition;
- Removal and off-site disposal of remaining hazardous and non-hazardous materials and equipment;
- Soil hotspot excavation; and
- Soil sampling and analysis.

Indoor air monitoring samples were collected before and after the work, in 2004 and 2007.

The following sections summarize the site background and environmental conditions, and describe the cleanup work completed in 2005. Soil, water, and indoor air sample analytical data are compiled in Tables 1 through 5, and laboratory reports are provided in Attachments A and B.

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Figure 1 is a vicinity map of the site, and Figure 2 shows the pre-cleanup conditions at the site in December 2003. Figure 3 identifies the final hotspot excavation boundaries and soil sample locations, and Figure 4 shows the locations of indoor air samples collected in 2004 and 2007. References providing additional site information are listed at the end of this memorandum.

SITE BACKGROUND AND ENVIRONMENTAL CONDITIONS

The Northwest Plating Company was a metal plating facility that began operations in 1957 at the site located at 825 South Dakota Street in Seattle, Washington (Figure 1). Metal plating operations and procedures conducted at the facility included cadmium, chromium, copper, nickel, and zinc plating; anodizing; application of special metal coatings; metal inspection services; metal polishing and refinishing; and spray painting (GeoEngineers 1990, Spectrum 1999). Metals degreasing was routinely done as part of the plating process.

As part of the facility closure, a partial cleanup of the building was completed in 1993, which addressed the most hazardous materials (AET 1993). The hazardous waste and plating solutions were removed at that time, in addition to most of the tanks and equipment. However, much of the concrete flooring and underlying soil and groundwater remained contaminated with metals and solvents.

Soil and Groundwater Conditions Before 2005 Cleanup Actions

Based on Phase II Environmental Site Assessment data (GeoEngineers 1990) and a subsequent project summary and evaluation (Spectrum 1999), the following conclusions were made in 2004 regarding soil and groundwater characteristics at the site (Hart Crowser 2004a).

- Soil at the site is contaminated with the chlorinated solvent trichloroethene (TCE), metals (chromium, cadmium, and zinc), and cyanide. Shallow soil is contaminated at several source area locations, primarily where plating sumps had been located. Deeper soil contamination (greater than 6 to 9 feet deep) is probably the result of contaminated groundwater migrating from under the source areas.

- Residual plating sludge may be present in the deep sumps in the southeast portion of the building. These materials tested as characteristic hazardous waste for chromium.

- Soil gas containing TCE is present beneath the site. The full lateral extent of subsurface vapor is unknown.

- Groundwater at the site is contaminated with chlorinated solvents (TCE and its breakdown products), metals (chromium, cadmium, and zinc), and cyanide. Off-site groundwater contamination appears to be limited to TCE and chromium. The vertical extent of contamination appears to be limited to shallow groundwater only. The full lateral extent of groundwater contamination is unknown.

- Based on comparison of two monitoring event results (1989 and 1999), it appears that the groundwater contaminants at the site are undergoing natural attenuation.

In 2003 and 2004, planning commenced for additional cleanup at the site. The building at that time was unoccupied with the exception of the previously cleaned west end of the building, which had been established as a commercial space for lease. Site conditions in December 2003 are shown on Figure 2. As shown on this figure, the remainder of the building that still required remediation consisted of:

- A former office, shipping and receiving, electrical, and storeroom area;

- Former chrome area plus zinc and cadmium lines;

- Barrel line, southeast chromium tank, and open sumps; and

- TCE degreaser areas.

CLEANUP OBJECTIVES

The objective of the cleanup was to use available funds to decontaminate as much of the remaining building as possible, so that it could be leased and put back into productive use, and to provide contaminant source control to the greatest extent practicable. The cleanup work should be considered an interim action and was not intended to remediate the entire site.

Nominal actions levels for TCE and chromium were established to determine source removal areas for the cleanup. These action levels were based on the results of soil sampling and analysis conducted at the site in March 2004 (Hart Crowser 2004c):

- TCE action level of 1 milligram per kilogram (mg/kg); and

- Chromium action level of 100 mg/kg.

Based on these action levels, the locations of Excavations 1 through 5 were proposed (see Figure 3), with other locations in the facility designated as optional excavation areas. Completion of the optional excavation areas would depend on the availability of funds remaining after the proposed cleanup tasks.

2005 CLEANUP WORK SUMMARY

To attain the cleanup objectives described above, the planned remediation work involved:

- Decontamination of the interior of the Northwest Plating building;
- Demolition of selected portions of the building and removal of materials and equipment with suspected contamination; and
- Excavation of soil hotspot source areas near former dip tanks, processing areas, and floor trenches.

Washington Industries contracted NRC Environmental, Inc., (NRC) to complete the cleanup work outlined above. Arrangements were made with Waste Management for disposal of the hazardous and non-hazardous materials and excavated soil removed from the Northwest Plating building. Hart Crowser observed representative portions of the cleanup work performed by NRC, and collected soil and wash water samples for waste characterization and to verify removal of hotspot soil source areas.

The cleanup work was conducted in April and May 2005. The work began with removal of hazardous and non-hazardous materials and equipment from the Northwest Plating building (see Figure 2), followed by demolition of selected interior building features, such as removal of conduit and piping from the walls and ceiling. Following demolition, the interior walls were pressure washed, and the wash water was collected for disposal characterization. Two water samples were collected for laboratory analysis of metals (lead, chromium, cadmium, and arsenic), volatile compounds (TCE, cis-1,2-dichloroethene, toluene, ethylbenzene, xylenes, and 1,2,4-trimethylbenzene), total suspended solids, and cyanide (see Table 1). Pressure washing near the proposed excavation areas was planned to be completed after the excavation work.

As the interior demolition and decontamination work neared completion, the concrete slab floor was removed where necessary to access planned Excavations 1 through 5. Once the soil was exposed at these locations, samples were collected from each area for laboratory analysis to characterize the soil for disposal. Laboratory results for these samples are summarized in Table 2,

which indicated that the soil could be managed as non-hazardous waste (see Soil Sampling, Analysis, and Disposal section below).

Planned Excavations 1 through 5 were completed as shown on Figure 3, in addition to two optional excavation areas (Excavations 6 and 7). Excavation 1 was completed in the former chromium area, where an open excavation remained from previous cleanup work. Excavation 2 followed the floor trench running east-west in the northern portion of the building. Excavations 3 and 4 were limited to the soil-based sumps in the southeast corner of the building. Excavation 5 focused on the west end of the barrel line, near groundwater monitoring well MW-16, in the southwest corner of the building. Excavation 6 followed the floor trench south from Excavation 2 into the degreaser sump located just north of the center building wall. Excavation 7 was completed in the former sulfuric acid area on the opposite side of the wall from Excavation 6. Because of verification sample analytical results showing relatively high chromium concentrations (see Soil Sampling, Analysis, and Disposal section below), Excavation 2 was excavated an additional 3 feet to the south from sample location E2-S2, and an additional 2 feet deeper at sample location E2-F2. Following completion of the excavation work, the building floor was washed to remove residual soil and other contamination.

Approximately 150 cubic yards (CY) of soil were excavated at the site. Final approximate excavation depths, estimated relative to the building floor surface, are summarized below. For sump excavations, the approximate excavation depth below the sump floor is also provided.

- Excavation 1: 8 feet;
- Excavation 2: 8 feet (10 feet at E2-F2 sample location);
- Excavation 3: 7 feet (3 feet below sump floor);
- Excavation 4: 7 feet (3 feet below sump floor);
- Excavation 5: 10 feet;
- Excavation 6: 7 feet in degreaser sump (3 feet below sump floor), and 2.5 feet along floor trench; and
- Excavation 7: 4 feet (3 feet below basin floor).

The final excavation depths listed above were established either when proposed target depths were attained or when groundwater was encountered in the excavation. Groundwater was observed at approximately 7 to 8 feet below the building floor surface at the time of excavation.

In some areas, vertical excavation was limited because of physical obstructions that were encountered. The depth of Excavation 6 along the floor trench was limited to approximately 2.5 feet by a pipe running north-south along the length of the trench to Excavation 2. A second pipe was encountered several feet to the west in Excavation 2; however, because of support provided by the walls of the narrow east-west excavation, digging could continue below the two pipes in Excavation 2. Crossbeam-like obstructions were encountered in the base of the sump at Excavation 4, and a concrete slab was encountered in a portion of the sump floor at Excavation 3. However, NRC was able to remove these obstructions to allow continued digging.

The soil removed from Excavation 7 showed significant discoloration, which indicated potentially high contaminant metal concentrations. Because of this suspected higher level of contamination, this soil was stockpiled separately for additional characterization for disposal. Characterization results indicated that this soil would need to be managed as dangerous waste separately from the other soil removed from the site (see Soil Sampling, Analysis and Disposal section below). The stockpiled soil from Excavation 7 remained on site. Washington Industries is aware of the need to remove the stockpile, and arrangements are being made for its disposal.

Excavations 1 through 7 were backfilled with imported fill material by NRC at a later date. The specific dates of the backfilling work are unknown.

Soil Sampling, Analysis, and Disposal

Soil samples were collected for laboratory analysis to characterize the soil for disposal and to verify contaminant concentrations at the completed excavation limits. A total of 6 characterization and 43 verification samples were collected. Sample analytical results are summarized in Tables 2 through 4, and verification sample locations are shown on Figure 3. Complete laboratory reports are provided in Attachment A.

The characterization samples from Excavations 1 through 5, collected as composite samples during initial excavation, were submitted for laboratory analysis of:

- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Total chromium by EPA Method 7010;

- Toxicity characteristic leaching procedure (TCLP) for total lead, chromium, cadmium, and arsenic by EPA Method 1311/7010; and

- Petroleum hydrocarbon identification by Method NWTPH-HCID.

Based on the results for the above analyses (refer to Table 2), Waste Management authorized the soil for disposal as non-hazardous waste.

An additional composite characterization sample was later collected of stockpiled soil from Excavation 7 because of suspected potentially high metal concentrations. This sample (E7-SP1) was submitted for laboratory analysis of total lead, chromium, cadmium, and arsenic by Method 7010 and TCLP for the same metals by Method 1311/7010. The TCLP analytical result of 1.5 mg/L for cadmium (see Table 4) exceeded the criterion of 1.0 mg/L for the state dangerous waste toxicity characteristic (WAC 173-303-090). In addition, two verification samples from Excavation 7 (E7-S2 and E7-S3) showed high concentrations of TCE (51 and 62 mg/kg, respectively) that would likely exceed the toxicity characteristic criterion. Because of these results, the soil from Excavation 7 was designated as dangerous waste and was to be managed separately from the other soil removed from the site.

As the excavation work progressed, soil samples were collected from the excavation walls and floors to verify total chromium and TCE concentrations at the proposed excavation boundaries. In total, 43 soil verification samples were collected and submitted for laboratory analysis by EPA Methods 7010 and 8260B on 24- to 48-hour turnaround time. The analytical results for the verification samples are summarized in Table 3. Chromium was detected in all verification samples, and TCE was detected above the laboratory reporting limit of 0.020 mg/kg in samples only from Excavations 5, 6, and 7. The analyte concentration ranges for the verification samples are summarized by excavation area below.

- Excavation 1
  - Chromium: 6.9 to 2,000 mg/kg
  - TCE: not detected

- Excavation 2
  - Chromium: 34 to 4,700 mg/kg
  - TCE: not detected

- Excavation 3
  - Chromium: 140 to 300 mg/kg
  - TCE: not detected

- Excavation 4
  - Chromium: 1,100 to 1,500 mg/kg
  - TCE: not detected

- Excavation 5
  - Chromium: 15 to 28 mg/kg
  - TCE: non-detect to 0.12 mg/kg

- Excavation 6
  - Chromium: 13 to 2,200 mg/kg
  - TCE: non-detect to 1.5 mg/kg

- Excavation 7
  - Chromium: 37 to 180 mg/kg
  - TCE: 0.56 to 62 mg/kg

Most of the chromium detections in the verification samples exceeded the nominal action level of 100 mg/kg for chromium, which was established for designating proposed excavation areas based on historical soil monitoring results. Similarly, where detected, most of the TCE analytical results exceeded the nominal action level of 1 mg/kg. This indicates that contaminated soil was effectively targeted and removed from hotspot source areas. However, because the cleanup work was an interim action with limited funding and not intended to remediate the entire site, soil containing chromium and TCE remains at the site above action levels.

INDOOR AIR MONITORING

Indoor air monitoring was conducted at the Northwest Plating site in 2004 and 2007. Before the 2005 cleanup work was implemented, the potential for soil vapor to affect air quality inside the site building was uncertain, and it was not known whether mitigation measures for vapor intrusion would be needed. Indoor air monitoring was conducted in the AV-PRO commercial space to resolve this uncertainty in January 2004. Three indoor air samples (HC-01 through HC-03) were collected using evacuated 6-liter Summa canisters and submitted for laboratory analysis of tetrachloroethene (PCE), TCE, 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-DCE), trans-1,2-dichloroethene, vinyl chloride (VC), chloroform, and 1,1,1-trichloroethane. The analysis was completed using modified EPA Method TO-15 SIM. Sample locations are shown on Figure 4, and analytical results are shown in Table 5. Complete lab reports are provided in Attachment B.

Samples HC-01 through HC-03 exceeded Model Toxics Control Act (MTCA) Method B and/or C cleanup levels for PCE, TCE, 1,1-DCE, VC, and chloroform, based on 2007 MTCA standard formula values for cleanup level and risk calculations (see Table 5). However, the concentrations were low with respect to Washington state permissible exposure limits (PELs) for worker safety. PELs are exposure levels allowed during an 8-hour period (time-weighted average [TWA]). It should be noted that indoor air monitoring results can be affected if something in the building was recently dry cleaned or solvents or cleaning solutions are used or stored in a building.

Indoor air monitoring was conducted at the site again in October 2007. Sometime during 2006 or 2007, AV-PRO had expanded their commercial space eastward into part of the unoccupied portion of the Northwest Plating building, overlaying former Excavations 2 and 6 (see Figures 3 and 4). One indoor air sample (HC-A-1-10-16-07) was collected from this expanded space and was submitted for laboratory analysis by Method TO-15. The analytical results showed an exceedance of MTCA Method B and C cleanup levels for TCE, at a concentration 130 micrograms per cubic meter ($\mu g/m^3$). However, this result was well below the state PEL for TCE and was comparable to the results for HC-02 and HC-03, with HC-03 being the closest 2004 sample location to the 2007 sample location. No additional indoor air monitoring has been conducted at Northwest Plating site since 2007.

LIMITATIONS

Work for this project was performed, and this memorandum was prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Helsell Fetterman LLP and Washington Industries, Inc., for specific application to the referenced property. This memorandum is not meant to represent a legal opinion. No other warranty, express or implied, is made.

Any questions regarding our work and this memorandum, the presentation of the information, and the interpretation of the data are welcome.

REFERENCES

AET 1993. Plant Closure – Final Report. Prepared by Advanced Environmental Technologies (AET). June 11, 1993.

GeoEngineers 1990. Report of Phase 2 Environmental Site Assessment, Northwest Plating Company, Seattle, Washington, for Washington Industries, Inc. Prepared by GeoEngineers, Inc. June 20, 1990.

Hart Crowser 2004a. Recommended Remediation Strategy, Northwest Plating Site, Seattle, Washington. Prepared by Hart Crowser, Inc., for Washington Industries, Inc. January 9, 2004.

Hart Crowser 2004b. Northwest Plating Site Remediation. Prepared by Hart Crowser, Inc., for Washington Industries Inc. January 28, 2004.

Hart Crowser 2004c. Northwest Plating Soil Testing Results. Prepared by Hart Crowser, Inc., for Washington Industries, Inc. April 16, 2004.

Spectrum 1999. Summary Report, Northwest Plating Company, 825 South Dakota Street, Seattle, Washington. Prepared by Spectrum Services, Inc. October 1, 1999.

Attachments:
Table 1 - Analytical Results for Wash Water Samples
Table 2 - Analytical Results for Soil Characterization Samples
Table 3 - Analytical Results for Soil Verification Samples
Table 4 - Analytical Results for Stockpile Soil Sample - Excavation 7
Table 5 - Indoor Air Monitoring Analytical Results
Figure 1 - Vicinity Map
Figure 2 - Pre-Construction Site Plan and Building Layout
Figure 3 - Excavation and Soil Sample Location Plan
Figure 4 - Air Monitoring Sample Location Plan
Attachment A - Laboratory Reports, Advanced Analytical Laboratory
Attachment B - Laboratory Reports, Air Toxics Ltd.

Table 1 - Analytical Results for Wash Water Samples

Sample ID	PW-T-1	PW-D-1
Sampling Date	5/5/2005	5/5/2005
Metals in mg/L		
Lead	0.012	0.010
Chromium	3.7	2.9
Cadmium	0.130	0.140
Arsenic	0.005 U	0.200
Volatiles in µg/L		
cis-1,2-Dichloroethene	1.0 U	1.9
Trichloroethene	5.5	11
Toluene	1.2	3.3
Ethylbenzene	1.0 U	1.9
Xylenes	2.8	16
1,2,4-Trimethylbenzene	1.0	1.3
Total Suspended Solids in mg/L	55	80
Total Cyanide in mg/L	1.3	0.81

Note:
U = Not detected at indicated detection limit.

Table 2 - Analytical Results for Soil Characterization Samples

Sample ID Sampling Date	E1 5/6/2005	E2 5/6/2005	E3 5/6/2005	E4 5/6/2005	E5 5/6/2005
Petroleum Hydrocarbon Identification in mg/kg					
Gasoline	20 U	20 U	20 U	20 U	20 U
Stoddard/Mineral Spirits	20 U	20 U	20 U	20 U	20 U
Kensol	20 U	20 U	20 U	20 U	20 U
Kerosene/Jet Fuel	20 U	20 U	20 U	20 U	20 U
Diesel/Fuel Oil	20 U	20 U	20 U	20 U	20 U
Bunker C	20 U	20 U	20 U	20 U	20 U
Heavy Oil	20 U	20 U	20 U	20 U	20 D
Metals in mg/kg					
Chromium	960	900	840	650	280
TCLP Metals in mg/L					
Lead	0.011	0.110	0.043	0.036	0.055
Chromium	2.9	0.850	0.540	0.430	0.087
Cadmium	0.100	0.800	0.060	0.820	0.510
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.010 U
Volatiles in mg/kg					
cis-1,2-Dichloroethene	0.05 U	0.05 U	0.05 U	0.05 U	0.065
Trichloroethene	0.14	0.18	0.028	0.02 U	0.96
Toluene	0.076	0.05 U	0.05 U	0.05 U	0.05 U
Ethylbenzene	0.055	0.05 U	0.05 U	0.05 U	0.05 U
Xylenes	0.58	0.16	0.071	0.05 U	0.063
n-Propylbenzene	0.062	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trimethylbenzene	0.38	0.11	0.05 U	0.05 U	0.088
n-Butylbenzene	0.059	0.05 U	0.05 U	0.05 U	0.05 U

Note:
D = Detected at or above indicated detection limit.
U = Not detected at indicated detection limit.

Table 3 - Analytical Results for Soil Verification Samples

Sample ID Sampling Date	Action Level	E1-F1 5/23/2005	E1-S1 5/23/2005	E1-S2 5/23/2005	E1-S3 5/23/2005	E1-S4 5/23/2005	E2-F1 5/23/2005
Metals in mg/kg							
Chromium	100	2,000	6.9	890	480	98	220
Volatiles in mg/kg							
Trichloroethene	1	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Sample ID Sampling Date		E2-F2 5/23/2005	E2-F3 5/26/2005	E2-S1 5/23/2005	E2-S2 5/23/2005	E2-S3 5/23/2005	E2-S4 5/23/2005
Metals in mg/kg							
Chromium	100	3,000	34	3,900	4,700	250	67
Volatiles in mg/kg							
Trichloroethene	1	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Sample ID Sampling Date		E2-S5 5/23/2005	E2-S6 5/26/2005	E2-S7 5/26/2005	E3-F1 5/25/2005	E3-F2 5/25/2005	E3-F3 5/25/2005
Metals in mg/kg							
Chromium	100	850	1,000	2,800	300	140	150
Volatiles in mg/kg							
Trichloroethene	1	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

Sample ID Sampling Date		E4-F1 5/24/2005	E4-F2 5/24/2005	E4-F3 5/24/2005	E5-F1 5/24/2005	E5-S1 5/24/2005	E5-S2 5/24/2005
Metals in mg/kg							
Chromium	100	1,500	1,300	1,100	28	25	18
Volatiles in mg/kg							
Trichloroethene	1	0.02 U	0.02 U	0.02 U	0.10	0.12	0.02 U

Sample ID Sampling Date		E5-S3 5/24/2005	E5-S4 5/24/2005	E6-F1 5/24/2005	E6-F2 5/25/2005	E6-F3 5/25/2005	E6-S1 5/25/2005
Metals in mg/kg							
Chromium	100	21	15	2,200	680	350	60
Volatiles in mg/kg							
Trichloroethene	1	0.02 U	0.02 U	0.02 U	0.55	1.2	0.02 U

Table 3 - Analytical Results for Soil Verification Samples

Sample ID Sampling Date	Action Level	E6-S2 5/25/2005	E6-S3 5/25/2005	E6-S4 5/25/2005	E6-S5 5/25/2005	E6-S6 5/25/2005	E6-S7 5/25/2005
Metals in mg/kg							
Chromium	100	16	13	40	610	100	370
Volatiles in mg/kg							
Trichloroethene	1	0.02 U	0.02 U	0.02 U	1.5	1.4	0.39

Sample ID Sampling Date		E6-S8 5/25/2005	E7-F1 5/25/2005	E7-F2 5/25/2005	E7-S1 5/25/2005	E7-S2 5/25/2005	E7-S3 5/25/2005
Metals in mg/kg							
Chromium	100	550	104	84	180	77	88
Volatiles in mg/kg							
Trichloroethene	1	0.37	9.2	2.0	0.56	51	62

Sample ID Sampling Date		E7-S4 5/25/2005
Metals in mg/kg		
Chromium	100	37
Volatiles in mg/kg		
Trichloroethene	1	9.4

Note:
U = Not detected at indicated detection limit.

Table 4 - Analytical Results for Stockpile Soil Sample - Excavation 7

Sample ID	E7-SP1
Sampling Date	5/25/2005
Metals in mg/kg	
Lead	24
Chromium	52
Cadmium	9.2
Arsenic	2.0 U
TCLP Metals in mg/L	
Lead	0.66
Chromium	0.11
Cadmium	1.5
Arsenic	0.01 U

Note:
U = Not detected at indicated detection limit.

Table 5 - Indoor Air Monitoring Analytical Results

Sample Identification	Sampling Date	Concentration in µg/m^3														
		Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	Chloroform	1,1,1-Trichloroethane	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Propylbenzene	1,2,4-Trimethylbenzene	Butylbenzene
MTCA Method B, Carcinogen [a]		0.42	0.022	0.05	NE	NE	0.28	0.11	NE	NE	NE	NE	NE	NE	NE	NE
MTCA Method B, Non-Carcinogen [a]		16	16	NE	NE	32	46	NE	4,800	2,200	460	46	46	NE	2.7	NE
MTCA Method C, Carcinogen [a]		4.2	0.22	0.5	NE	NE	2.8	1.1	NE	NE	NE	NE	NE	NE	NE	NE
MTCA Method C, Non-Carcinogen [a]		35	35	NE	NE	70	100	NE	11,000	4,900	1,000	100	100	NE	6	NE
WISHA TWA PEL [b]		171,429	270,833	4,000	784,615	784,615	2,606	9,841	1,931,175	381,818	432,432	431,818	431,818	NE	127,083	NE
HC-01	1/8/04	**9.6**	**360**	**2.0**	12	2.0 U	**1.2**	**3.2**	8.9	NA	NA	NA	NA	NA	NA	NA
HC-02	1/8/04	**7.3**	**190**	**1.8**	8.7	0.88 U	**1.4**	**3.0**	10	NA	NA	NA	NA	NA	NA	NA
HC-03	1/8/04	**4.8**	**100**	**0.45**	4.7	0.60 U	**0.36**	**1.3**	6.3	NA	NA	NA	NA	NA	NA	NA
HC-A-1-10-16-07	10/16/07	NA	**130**	NA	5.1	NA	NA	NA	NA	42	3.2	14	3.8	0.99	**6.1**	4.7 U

Notes:

a) Based on November 2007 CLARC standard formula value.

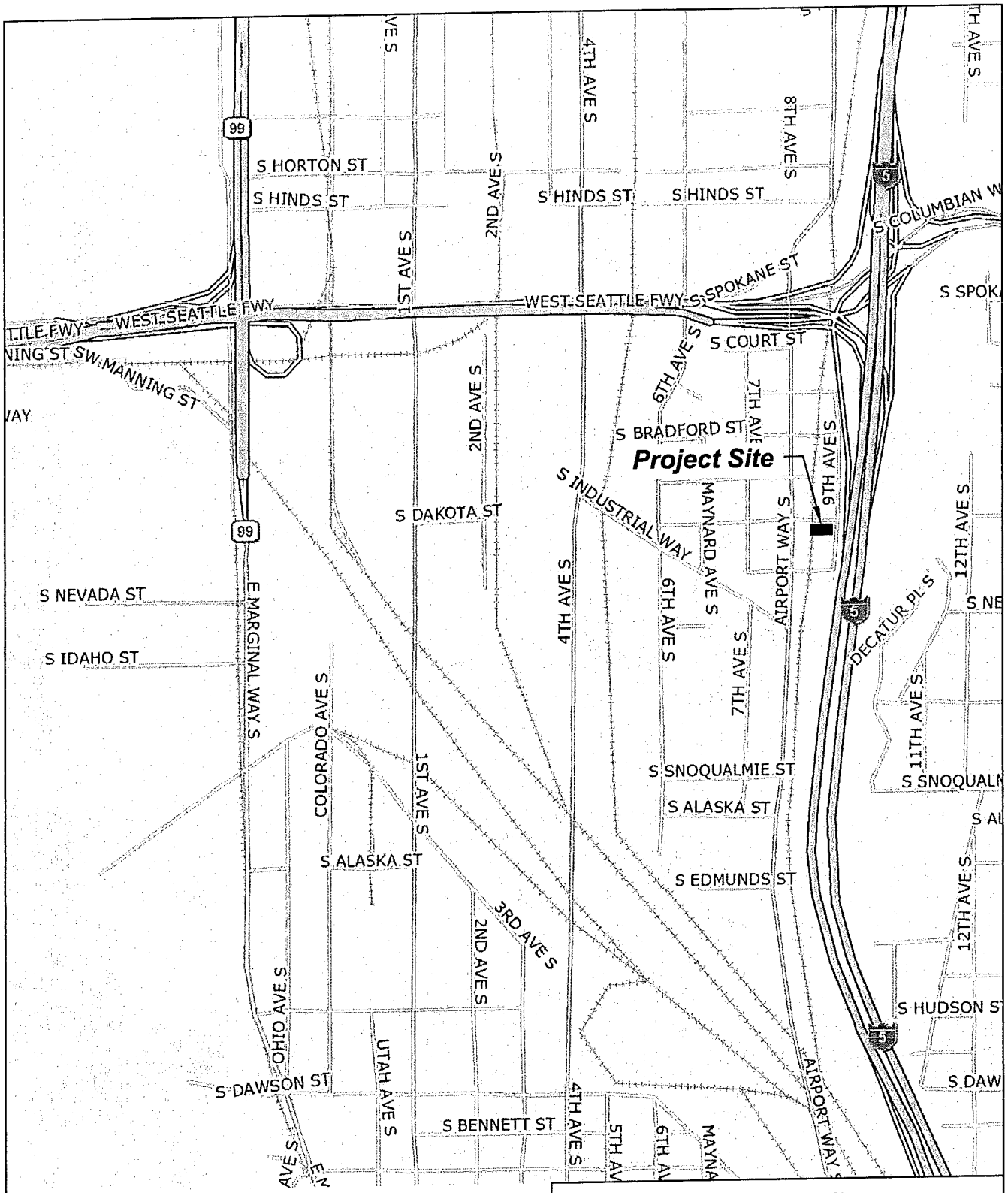
b) Based on 8-hour time-weighted average (TWA) permissible exposure limit (PEL).

Bold indicates an exceedance of cleanup level.

U - Analyte not detected at method detection limit indicated.

NE - No cleanup level established in November 2007 CLARC database.

NA - Not analyzed.



Source: Base map prepared from DeLorme Topo 7.0, 2007.

Northwest Plating Site
Seattle, Washington

Vicinity Map

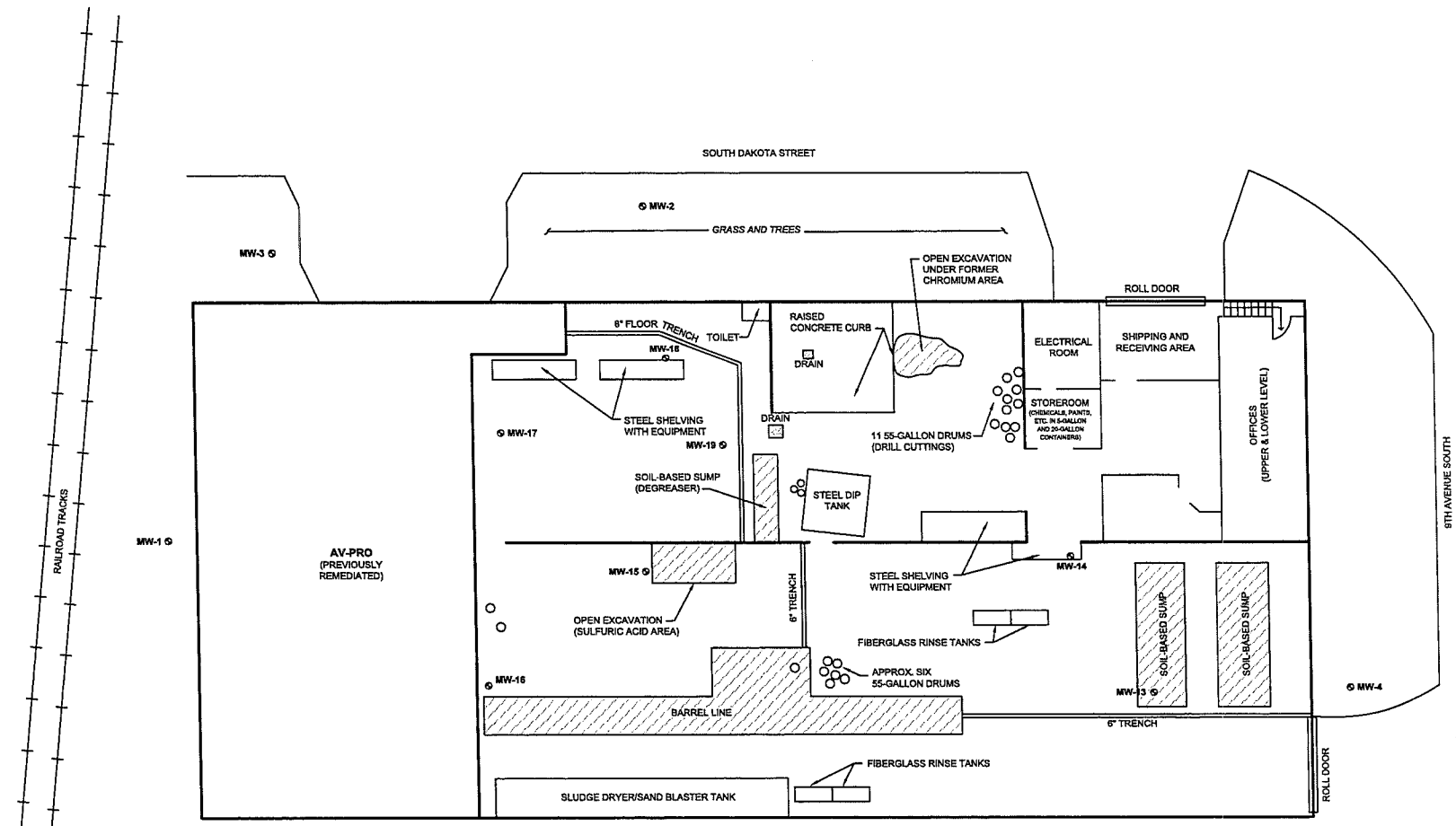
17892-00

9/12

HARTCROWSER

Figure
1

EAL 09/17/12 1789200-001.dwg



OPEN SUMPS/PIT

MW-16 MONITORING WELL LOCATION AND NUMBER (GEOENGINEERS)

NOTE: LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE.

SOURCE: MODIFIED BASE MAP PREPARED FROM BASE DRAWING BY GEOENGINEERS. CONDITIONS SHOWN FROM SITE VISIT DECEMBER 18, 2003, BY HART CROWSER.

N

0 15 30

Scale in Feet

Northwest Plating Site
Seattle, Washington

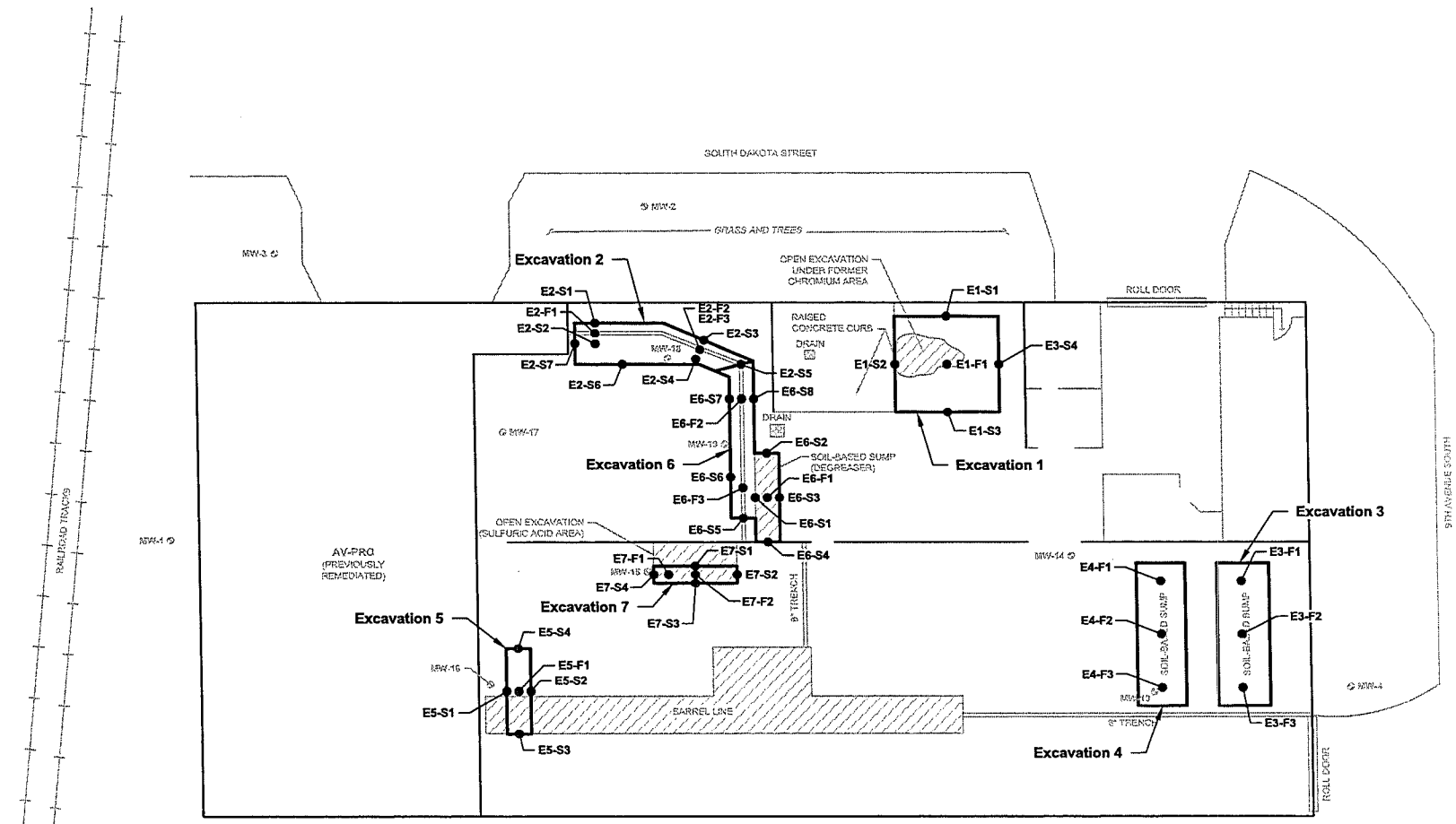
Pre-Construction Site Plan and Building Layout

17892-00 9/12

HARTCROWSER

Figure 2

EAL 09/17/12 1789200-002.dwg



E1-S1 ● VERIFICATION SAMPLE LOCATION AND NUMBER

OPEN SUMPS/PIT

MW-16 ⊕ MONITORING WELL LOCATION AND NUMBER (GEOENGINEERS)

NOTE: LOCATIONS OF FEATURES SHOWN ARE APPROXIMATE.

SOURCE: MODIFIED BASE MAP PREPARED FROM BASE DRAWING BY GEOENGINEERS. CONDITIONS SHOWN FROM SITE VISIT DECEMBER 18, 2003, BY HART CROWSER.

N

0 15 30

Scale in Feet

Northwest Plating Site
Seattle, Washington

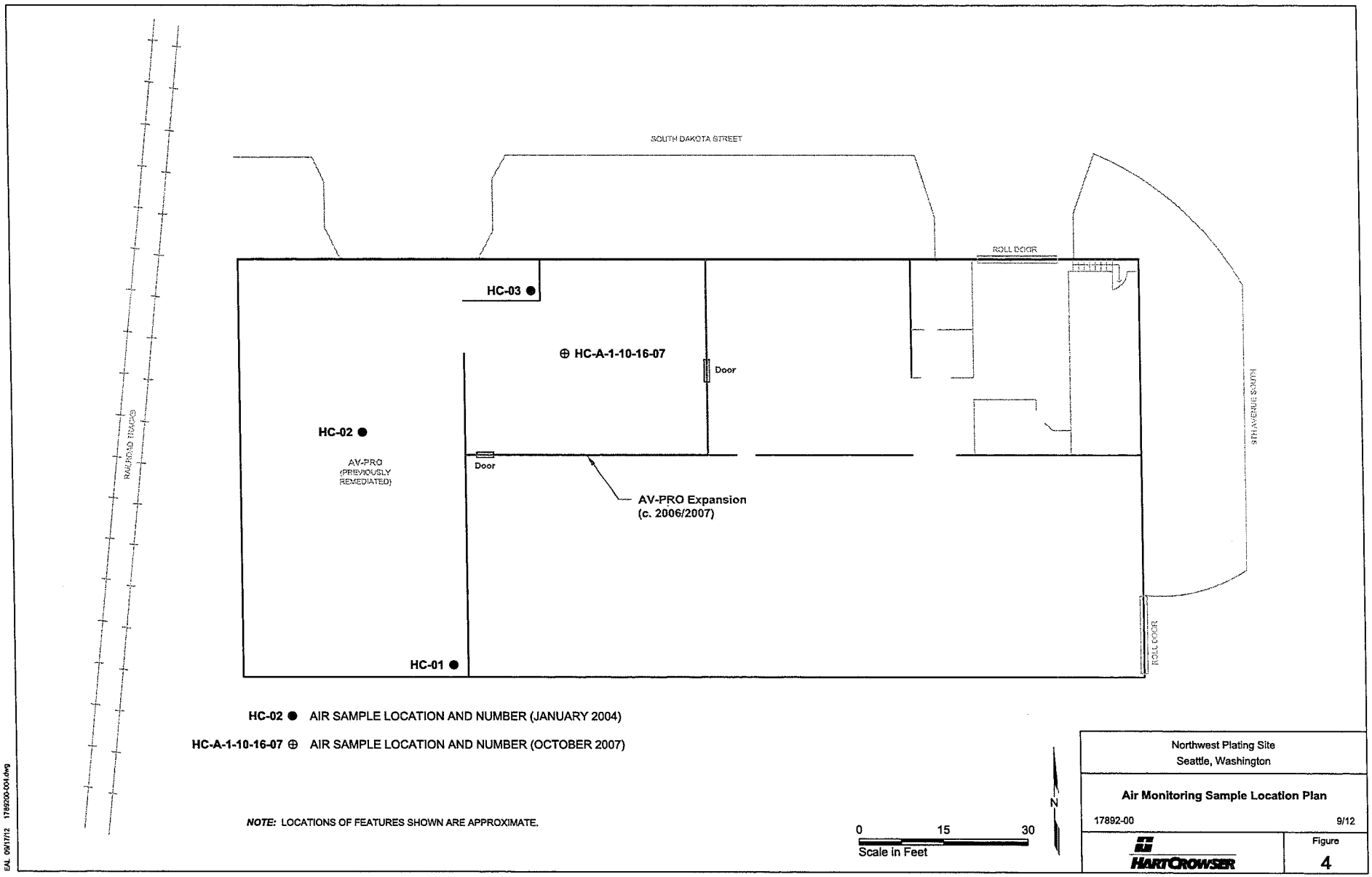
Excavation and Soil Sample Location Plan

17892-00 9/12

HARTCROWSER

Figure 3

EAL 09/17/12 17892000-003.dwg



Northwest Plating Site
Seattle, Washington

Air Monitoring Sample Location Plan

17892-00 9/12

HARTCROWSER

Figure 4

EAL 09/17/12 1789200-004.dwg

ATTACHMENT A
LABORATORY REPORTS
ADVANCED ANALYTICAL LABORATORY

ADVANCED ANALYTICAL

Environmental Testing Laboratory

May 24, 2005

Rick Moore
Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, WA 98102

Dear Mr. Moore:

Please find enclosed the analytical data report for the *NW Plating, 17002-03* ***(A50506-3)*** Project.

Samples were received on *May 06, 2005*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 497-0110.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,

V. Ivanov

Val G. Ivanov, Ph.D.
Laboratory Manager

Overlake Business Center ■ 2821 152 Avenue NE ■ Redmond, WA 98052
ph 425.497.0110 fax 425.497.8089
E-mail: aachemlab@yahoo.com

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

8260B, µg/L		MTH BLK	LCS	PW-T-1	PW-D-1
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	05/09/05	05/09/05	05/09/05	05/09/05
Chloromethane	1.0	nd		nd	nd
Vinyl chloride(*)	0.2	nd		nd	nd
Bromomethane	1.0	nd		nd	nd
Chloroethane	1.0	nd		nd	nd
Trichlorofluoromethane	1.0	nd		nd	nd
1,1-Dichloroethene	1.0	nd		nd	nd
Methylene chloride	1.0	nd		nd	nd
trans-1,2-Dichloroethene	1.0	nd		nd	nd
1,1-Dichloroethane	1.0	nd		nd	nd
2,2-Dichloropropane	1.0	nd		nd	nd
cis-1,2-Dichloroethene	1.0	nd		nd	1.9
Chloroform	1.0	nd		nd	nd
1,1,1-Trichloroethane	1.0	nd		nd	nd
Carbontetrachloride	1.0	nd		nd	nd
1,1-Dichloropropene	1.0	nd		nd	nd
Benzene	1.0	nd	82%	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd		nd	nd
Trichloroethene	1.0	nd	93%	5.5	11
1,2-Dichloropropane	1.0	nd		nd	nd
Dibromomethane	1.0	nd		nd	nd
Bromodichloromethane	1.0	nd		nd	nd
cis-1,3-Dichloropropene	1.0	nd		nd	nd
Toluene	1.0	nd	80%	1.2	3.3
trans-1,3-Dichloropropene	1.0	nd		nd	nd
1,1,2-Trichloroethane	1.0	nd		nd	nd
Tetrachloroethene	1.0	nd		nd	nd
1,3-Dichloropropane	1.0	nd		nd	nd
Dibromochloromethane	1.0	nd		nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd	nd
Chlorobenzene	1.0	nd	77%	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd		nd	nd
Ethylbenzene	1.0	nd		nd	1.9
Xylenes	1.0	nd		2.8	16
Styrene	1.0	nd		nd	nd
Bromoform	1.0	nd		nd	nd
Isopropylbenzene	1.0	nd		nd	nd
1,2,3-Trichloropropane	1.0	nd		nd	nd
Bromobenzene	1.0	nd		nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd	nd

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

8260B, µg/L		MTH BLK	LCS	PW-T-1	PW-D-1
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	05/09/05	05/09/05	05/09/05	05/09/05
Chloromethane	1.0	nd		nd	nd
n-Propylbenzene	1.0	nd		nd	nd
2-Chlorotoluene	1.0	nd		nd	nd
4-Chlorotoluene	1.0	nd		nd	nd
1,3,5-Trimethylbenzene	1.0	nd		nd	nd
tert-Butylbenzene	1.0	nd		nd	nd
1,2,4-Trimethylbenzene	1.0	nd		1.0	1.3
sec-Butylbenzene	1.0	nd		nd	nd
1,3-Dichlorobenzene	1.0	nd		nd	nd
Isopropyltoluene	1.0	nd		nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd
n-Butylbenzene	1.0	nd		nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd
Naphthalene	1.0	nd		nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd
*-instrument detection limits					
Surrogate recoveries					
Dibromofluoromethane		78%	79%	79%	82%
Toluene-d8		96%	104%	101%	102%
1,2-Dichloroethane-d4		78%	89%	82%	85%
4-Bromofluorobenzene		77%	116%	115%	115%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

Metals (7010), mg/l		MTH BLK	LCS	PW-T-1	PW-D-1
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	05/11/05	05/11/05	05/11/05	05/11/05
Date analyzed	Limits	05/11/05	05/11/05	05/11/05	05/11/05
Lead (Pb)	0.002	nd	70%	0.012	0.010
Chromium (Cr)	0.01	nd	80%	3.7	2.9
Cadmium (Cd)	0.005	nd	104%	0.130	0.140
Arsenic (As)	0.005	nd	123%	nd	0.200

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
J - estimated value
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

TSS (160.2), mg/l	PW-T-1	PW-D-1
Matrix	Water	Water
Date analyzed	05/09/05	05/09/05
Total Suspended Solids	55	80

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A50506-3
Client: Hart Crowser, Inc.
Project Manager: Rick Moore
Client Project Name: Northwest Plating
Client Project Number: 17002-03
Date received: 05/06/05

Analytical Results

NWTPH-HCID, mg/kg		MTH BLK	E1	E2	E3	E4	E5	Dupl E5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/12/05	05/12/05	05/12/05	05/12/05	05/12/05	05/12/05	05/12/05
Date analyzed	Limits	05/12/05	05/12/05	05/12/05	05/12/05	05/12/05	05/12/05	05/12/05
Gasoline	20	nd	nd	nd	nd	nd	nd	nd
Stoddard/Mineral spirits	20	nd	nd	nd	nd	nd	nd	nd
Kensol	20	nd	nd	nd	nd	nd	nd	nd
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20*	nd	nd	nd	nd	nd	nd	nd
Bunker C	20*	nd	nd	nd	nd	nd	nd	nd
Heavy oil	20*	nd	nd	nd	nd	nd	D	D
*- Instrument detection limit								
Surrogate recoveries:								
Fluorobiphenyl		102%	126%	119%	127%	122%	89%	82%
o-Terphenyl		103%	129%	124%	128%	125%	94%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
D - detected at or above listed reporting limits
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

8260B, µg/kg		MTH BLK	LCS	E1	E2	E3	E4	E5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05
Date analyzed	Limits	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05
Dichlorodifluoromethane	50	nd		nd	nd	nd	nd	nd
Chloromethane	50	nd		nd	nd	nd	nd	nd
Vinyl chloride	50	nd		nd	nd	nd	nd	nd
Bromomethane	50	nd		nd	nd	nd	nd	nd
Chloroethane	50	nd		nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd		nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd		nd	nd	nd	nd	nd
Methylene chloride	20	nd		nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd		nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd		nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd		nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd		nd	nd	nd	nd	65
Chloroform	50	nd		nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd		nd	nd	nd	nd	nd
Carbontetrachloride	50	nd		nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd		nd	nd	nd	nd	nd
Benzene	50	nd	82%	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd		nd	nd	nd	nd	nd
Trichloroethene	20	nd	93%	140	180	28	nd	960
1,2-Dichloropropane	50	nd		nd	nd	nd	nd	nd
Dibromomethane	50	nd		nd	nd	nd	nd	nd
Bromodichloromethane	50	nd		nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd		nd	nd	nd	nd	nd
Toluene	50	nd	80%	76	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd		nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd		nd	nd	nd	nd	nd
Tetrachloroethene	50	nd		nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd		nd	nd	nd	nd	nd
Dibromochloromethane	20	nd		nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd		nd	nd	nd	nd	nd
Chlorobenzene	50	nd	77%	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd		nd	nd	nd	nd	nd
Ethylbenzene	50	nd		55	nd	nd	nd	nd
Xylenes	50	nd		580	160	71	nd	63
Styrene	50	nd		nd	nd	nd	nd	nd
Bromoform	50	nd		nd	nd	nd	nd	nd
Isopropylbenzene	50	nd		nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd		nd	nd	nd	nd	nd

Advanced Analytical Laboratory
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AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

8260B, µg/kg		MTH BLK	LCS	E1	E2	E3	E4	E5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05
Date analyzed	Limits	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05	05/09/05
Bromobenzene	50	nd		nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd		nd	nd	nd	nd	nd
n-Propylbenzene	50	nd		62	nd	nd	nd	nd
2-Chlorotoluene	50	nd		nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd		nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd		nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd		nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd		380	110	nd	nd	88
sec-Butylbenzene	50	nd		nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd		nd	nd	nd	nd	nd
Isopropyltoluene	50	nd		nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd		nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd		nd	nd	nd	nd	nd
n-Butylbenzene	50	nd		59	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd		nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd		nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd		nd	nd	nd	nd	nd
Naphthalene	50	nd		nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd		nd	nd	nd	nd	nd
*-instrument detection limits								
Surrogate recoveries								
Dibromofluoromethane		78%	79%	79%	75%	71%	73%	80%
Toluene-d8		96%	104%	104%	101%	106%	102%	98%
1,2-Dichloroethane-d4		78%	89%	85%	86%	86%	89%	117%
4-Bromofluorobenzene		77%	116%	114%	115%	115%	115%	122%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results			MS	MSD	RPD
8260B, µg/kg		MTH BLK	E5	E5	E5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/09/05	05/09/05	05/09/05	05/09/05
Date analyzed	Limits	05/09/05	05/09/05	05/09/05	05/09/05
Dichlorodifluoromethane	50	nd			
Chloromethane	50	nd			
Vinyl chloride	50	nd			
Bromomethane	50	nd			
Chloroethane	50	nd			
Trichlorofluoromethane	50	nd			
1,1-Dichloroethene	50	nd			
Methylene chloride	20	nd			
trans-1,2-Dichloroethene	50	nd			
1,1-Dichloroethane	50	nd			
2,2-Dichloropropane	50	nd			
cis-1,2-Dichloroethene	50	nd			
Chloroform	50	nd			
1,1,1-Trichloroethane	50	nd			
Carbontetrachloride	50	nd			
1,1-Dichloropropene	50	nd			
Benzene	50	nd	83%	88%	6%
1,2-Dichloroethane(EDC)	20	nd			
Trichloroethene	20	nd	73%	75%	3%
1,2-Dichloropropane	50	nd			
Dibromomethane	50	nd			
Bromodichloromethane	50	nd			
cis-1,3-Dichloropropene	50	nd			
Toluene	50	nd	84%	87%	4%
trans-1,3-Dichloropropene	50	nd			
1,1,2-Trichloroethane	50	nd			
Tetrachloroethene	50	nd			
1,3-Dichloropropane	50	nd			
Dibromochloromethane	20	nd			
1,2-Dibromoethane (EDB)*	5	nd			
Chlorobenzene	50	nd	82%	86%	4%
1,1,1,2-Tetrachloroethane	50	nd			
Ethylbenzene	50	nd			
Xylenes	50	nd			
Styrene	50	nd			
Bromoform	50	nd			
Isopropylbenzene	50	nd			
1,2,3-Trichloropropane	50	nd			

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results			MS	MSD	RPD
8260B, µg/kg		MTH BLK	E5	E5	E5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/09/05	05/09/05	05/09/05	05/09/05
Date analyzed	Limits	05/09/05	05/09/05	05/09/05	05/09/05
Bromobenzene	50	nd			
1,1,2,2-Tetrachloroethane	50	nd			
n-Propylbenzene	50	nd			
2-Chlorotoluene	50	nd			
4-Chlorotoluene	50	nd			
1,3,5-Trimethylbenzene	50	nd			
tert-Butylbenzene	50	nd			
1,2,4-Trimethylbenzene	50	nd			
sec-Butylbenzene	50	nd			
1,3-Dichlorobenzene	50	nd			
Isopropyltoluene	50	nd			
1,4-Dichlorobenzene	50	nd			
1,2-Dichlorobenzene	50	nd			
n-Butylbenzene	50	nd			
1,2-Dibromo-3-Chloropropane	50	nd			
1,2,4-Trichlorobenzene	50	nd			
Hexachloro-1,3-butadiene	50	nd			
Naphthalene	50	nd			
1,2,3-Trichlorobenzene	50	nd			
*-instrument detection limits					
Surrogate recoveries					
Dibromofluoromethane		78%	75%	76%	
Toluene-d8		96%	102%	101%	
1,2-Dichloroethane-d4		78%	92%	92%	
4-Bromofluorobenzene		77%	116%	113%	

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

Metals (7010), mg/kg		MTH BLK	LCS	E1	E2	E3	E4	E5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05
Date analyzed	Limits	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05
Chromium (Cr)	2.0	nd	120%	960	900	840	650	280

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

Metals TCLP (1311/7010), mg/L		MTH BLK	LCS	E1	E2	E3
Matrix	Soil/Extract	Soil/Extract	Soil/Extract	Soil/Extract	Soil/Extract	Soil/Extract
Date extracted	Reporting	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05
Date analyzed	Limits	05/11/05	05/11/05	05/11/05	05/11/05	05/11/05
Lead (Pb)	0.004	nd	70%	0.011	0.110	0.043
Chromium (Cr)	0.02	nd	80%	2.9	0.850	0.540
Cadmium (Cd)	0.01	nd	104%	0.100	0.800	0.060
Arsenic (As)	0.01	nd	123%	nd	nd	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number:	A50506-3
Client:	Hart Crowser, Inc.
Project Manager:	Rick Moore
Client Project Name:	Northwest Plating
Client Project Number:	17002-03
Date received:	05/06/05

Analytical Results

Metals TCLP (1311/7010), mg/L		MTH BLK	E4	E5
Matrix	Soil/Extract	Soil/Extract	Soil/Extract	Soil/Extract
Date extracted	Reporting	05/11/05	05/11/05	05/11/05
Date analyzed	Limits	05/11/05	05/11/05	05/11/05
Lead (Pb)	0.004	nd	0.036	0.055
Chromium (Cr)	0.02	nd	0.430	0.087
Cadmium (Cd)	0.01	nd	0.820	0.510
Arsenic (As)	0.01	nd	nd	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 30%

Am Test Inc.
14603 N.E. 87th St.
Redmond, WA
98052

Tel: 425.885.1664
Fax: 425.883.3495
www.amtestlab.com

Professional
Analytical
Services

May 17 2005
Advanced Analytical
2821 152nd Ave NE
Redmond, WA 98052
Attention: Val Ivanov

Dear Val Ivanov:

Enclosed please find the analytical data for your A50506-3 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AM TEST ID	TEST
PW-D-1	Water	05-A004912	CONV,
PW-T-1	Water	05-A004913	CONV,

Your two (2) samples were received on Monday, May 9 2005. This was a total of 72 hours (3 days) after sample collection (5/ 6/05). At the time of receipt, the samples were logged in and properly maintained prior to their subsequent analyses.

The analytical procedures used at Am Test are well documented, and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the QC results and "Methodology Report". This table includes information relative to the detection limits, analyses dates and method references.

Please note that the detection limits that are listed in the body of the report refer to the Method Detection Limits (MDL's), as opposed to Practical Quantitation Limits (PQL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Kathy Fugiel
President

Project #: NW PLATING

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics

AMTEST LABORATORIES

ANALYSIS REPORT

Advanced Analytical
2821 152nd Ave NE
Redmond, WA 98052
Attention: Val Ivanov

Date Received: 5/ 9/05
Date Reported: 5/17/05

Project Name: A50506-3
Project #: NW PLATING
Date Sampled: 5/ 6/05

Water Samples

PARAMETER		RESULT
05-A004912 **Client ID: PW-D-1** **Date Sampled: 5/ 6/05,** Total Cyanide	mg/l	0.81
05-A004913 **Client ID: PW-T-1** **Date Sampled: 5/ 6/05,** Total Cyanide	mg/l	1.3

Reported by: Kathy Fugiel

AMTEST
LABORATORIES

Quality Control Summary

QC for 546346

05-A004912
05-A004913

DUPLICATES			sample value	duplicate value	RPD %
05-A004992 DUP: Total Cyanide		mg/l	< 0.005	< 0.005	

MATRIX SPIKES			sample value	sample+spk value	spike value	Recovery %
05-A005000 SPIKE: Total Cyanide		mg/l	< 0.005	0.075	0.10	75.0

STANDARD REFERENCE MATERIALS			measured value	true value	Recovery %
Known	SRM: Total Cyanide	mg/l	1.1	0.92	120.

BLANKS			Result
	BLANK: Total Cyanide	mg/l	< 0.005

AMTEST LABORATORIES

METHODOLOGY REPORT

AM TEST ID 05-A004912
CLIENT ID PW-D-1

MATRIX : Water
SAMPLED: 5/ 6/05

ANALYTE	UNITS	METHOD NUMBER	METHOD REFERENCE	DETECTION LIMIT *	DATE OF ANALYSIS
Total Cyanide	mg/l	335.2	EPA	0.005	5/13/05

SM = Standard Methods for the Examination of Water and Wastewater 18th ed.
SW-846 = Test Methods for Evaluating Solid Waste Physical/Chemical Methods
EPA = Methods for Chemical Analysis of Water and Wastes 1983
* Instrument Detection Limit

Sample Custody Record

A505063

Samples Shipped to: Advanced

HARTCROWSER

Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, Washington 98102-3699
Phone: 206-324-9530 FAX: 206-328-5581

JOB 17002-03 LAB NUMBER

PROJECT NAME NW Plating

HART CROWSER CONTACT Rick Moore, Peter Smiltins

SAMPLED BY: PRS

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TSS	CN	Total Cr, As, Pb, Cd	VOCs by 8260B	Total Cr, Cd	TCLP Cr, As, Pb, Cd	TPH-HCID (pres 5/12/05)	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
	PW-D-1		5/5/05	1445	H_2O	X	X	X	X				4	
	PW-T-1		—"—	1500	—"—	X	X	X	X				4	
	E5		5/6/05	0800	Soil				X	X	X	X	2	
	E4			0830					X	X	X	X	2	
	E3			0845					X	X	X	X	2	
	E2			0930					X	X	X	X	2	
	E1			1015					X	X	X	X	2	

REQUESTED ANALYSIS

RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE	5/6/05	SIGNATURE	5/6/5
PRINT NAME PETER SMILTINS	TIME	PRINT NAME	TIME
COMPANY HC	1230	COMPANY	20[illegible]
RELINQUISHED BY	DATE	RECEIVED BY	DATE
SIGNATURE	TIME	SIGNATURE	TIME
PRINT NAME		PRINT NAME	
COMPANY		COMPANY	

SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:

18 TOTAL NUMBER OF CONTAINERS

SAMPLE RECEIPT INFORMATION
CUSTODY SEALS ☐YES ☐NO ☐N/A
GOOD CONDITION ☐YES ☐NO
TEMPERATURE
SHIPMENT METHOD: ☐HAND ☐COURIER ☐OVERNIGHT

COOLER NO.: STORAGE LOCATION:

See Lab Work Order No. for Other Contract Requirements

TURNAROUND TIME:
☐ 24 HOURS ☐ 1 WEEK
☐ 48 HOURS ☐ STANDARD
☐ 72 HOURS OTHER 3-5 days

White and Yellow Copies to Lab Pink to Project Manager Lab to Return White Copy to Hart Crowser Gold to Sample Custodian

ADVANCED ANALYTICAL

Environmental Testing Laboratory

June 02, 2005

Rick Moore
Hart Crowser, Inc.
1910 Fairview Avenue East
Seattle, WA 98102

Dear Mr. Moore:

Please find enclosed the analytical data report for the *NW Plating, 17002-03* ***(A50524-2)*** Project.

Samples were received on *May 23-27, 2005*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 497-0110.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,

V. Ivanov

Val G. Ivanov, Ph.D.
Laboratory Manager

Overlake Business Center ■ 2821 152 Avenue NE ■ Redmond, WA 98052
ph 425.497.0110 fax 425.497.8089
E-mail: aachemlab@yahoo.com