

**REVISION 0
SITE ASSESSMENT REPORT
FOR
ECONOMY PLATING SITE
CHICAGO, COOK COUNTY, ILLINOIS**

NPL STATUS: NON-NPL

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Prepared by:

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Date Prepared	July 6, 2009
Technical Direction Document Number	S05-0001-0905-008
Document Control Number	643-2A-AEER
Contract Number	EP-S5-06-04
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LIST OF ABBREVIATIONS AND ACRONYMS

μR/hr	MicroRoentgens per hour
ACM	Asbestos-containing material
CDOE	City of Chicago Department of the Environment
CFR	<i>Code of Federal Regulations</i>
CO	Carbon monoxide
Economy Plating	Economy Plating, Inc.
HASP	Health and safety plan
HCN	Hydrogen cyanide
H ₂ S	Hydrogen sulfide
IEPA	Illinois Environmental Protection Agency
LEL	Lower explosive limit
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
O ₂	Oxygen
OSC	On-Scene Coordinator
PCB	Polychlorinated biphenyl
PID	Photoionization detector
PPE	Personal protective equipment
START	Superfund Technical Assessment and Response Team
SU	Standard unit
SVOC	Semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TDD	Technical Direction Document
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile organic compound
WESTON	Weston Solutions, Inc.

1. INTRODUCTION

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to assist U.S. EPA in performing a site assessment at the Economy Plating site (the Site) located in Chicago, Cook County, Illinois (Figure 1-1). Under Technical Direction Document (TDD) number S05-0001-0905-008, U.S. EPA requested that WESTON START document current site conditions; collect liquid and solid waste samples; obtain photographic documentation; and evaluate the potential for imminent and substantial threats to human health, welfare, and the environment posed by Site conditions. On June 5, 2009, WESTON START conducted a site assessment under the direction of U.S. EPA On-Scene Coordinator (OSC) Ramon Mendoza.

This Site Assessment Report is organized into the following sections:

- **Introduction** – Provides a brief description of the objective and scope of site assessment activities;
- **Site Background** – Details the Site description and its known history;
- **Site Assessment Activities** – Discusses the methods and procedures used during the site assessment;
- **Analytical Results** – Discusses the analytical results for samples collected during the site assessment;
- **Threats to Human Health and the Environment** – Identifies Site conditions that may warrant a removal action under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP); and
- **Conclusions and Recommendations** – Provides a summary of the site assessment findings and recommendations for further Site activities as needed.

2. SITE BACKGROUND

This section discusses the site description and site history.

2.1 SITE DESCRIPTION

The Site is located at 2348 through 2350 North Elston Avenue in Chicago, Cook County, Illinois. The meridian coordinates for the Site are latitude 41° 55' 26.97" North and longitude 87° 40' 35.85" West. The Site contains a two-story brick building with a dirt-floor basement and a small asphalt-paved parking area southwest of the building. The Site is bordered by North Elston Avenue and commercial properties to the northeast and by residential properties to the southeast, southwest, and northwest. The North Branch of the Chicago River is located less than 1,000 feet east of the Site.

Economy Plating, Inc. (Economy Plating), a chrome plating facility, formerly operated at the Site. Economy Plating provided industrial hard chrome plating for various metal parts. According to a City of Chicago Department of Environment (CDOE) inspection report, Economy Plating's plating process used a close-loop system that allowed the reuse of plating solutions, rinses, and other materials. Reportedly, the facility generated only one hazardous waste, tank bottoms that were periodically shipped off site when the tanks were cleaned.

2.2 SITE HISTORY

The Site building was built in 1962. It is assumed that Economy Plating began operations at the Site in 1962. In 1990, Economy Plating installed new fume scrubbers and applied for a Federal Air Permit through the Illinois Environmental Protection Agency (IEPA). In 1991, the Federal Air Permit was issued; however, IEPA requested further data regarding the building's gas boiler and parking lot. Economy Plating was fined due to the lack of a permit for the gas boiler, and negotiations with IEPA continued for the next 7 years.

In 1997, the Economy Plating facility tested for and passed new air quality standards. In 1999 IEPA found fault with the testing and requested retesting.

On February 10, 2000, IEPA inspected the Site in response to a citizen's complaint regarding apparent seepage on the building's north wall. IEPA observed deteriorating bricks with a yellow powdery residue. Victor Koerner, president of Economy Plating, indicated that the yellow residue appeared to be sodium hydroxide used in the plating process and agreed to address the problem. Corrective actions included masonry repairs, soil sampling, and soil removal.

On June 2, 2000, IEPA conducted a follow-up inspection and verified that masonry repairs had been made. Soil samples collected from the area were analyzed for total chromium and lead. The toxicity characteristic leaching procedure (TCLP) results indicated a non-hazardous concentration of chromium and lead in soil outside the building, and IEPA requested no further action.

In 2001, IEPA filed a lawsuit with the Pollution Control Board asking for a \$10,000 per day fine for a chrome tank not included in the original 1978 permit for the Economy Plating facility. The chrome tank was included on the 1991 permit.

Between 2002 and 2003, Economy Plating sold equipment and raw materials from the facility. On December 31, 2003, Economy Plating ceased operations.

In 2004, the Illinois Attorney General won an uncontested suit against Economy Plating that resulted in a \$5,000 fine and an order to cease plating operations.

In 2005, Victor Koerner was injured by an electrical explosion while he was disconnecting an unauthorized electrical connection. The connection was made by thieves attempting to transfer electricity from a nearby second-floor apartment into the main building. Vandals had removed all the copper wire from the Site building.

On January 27, 2009, the CDOE inspected the Site building. CDOE officials observed that the building was vacant and contained potentially uncontrolled wastes. In addition, rain and snowmelt were infiltrating the building and potentially impacting old vats and tanks containing unknown wastes.

In May 2009, the CDOE requested the U.S. EPA to mitigate imminent environmental threats at the

Site. U.S. EPA identified the following specific concerns at the Site:

- Six vats or tanks containing a total of approximately 400 gallons of liquid believed to be chromic acid, rinse water, or an unknown waste;
- Leaks in the roof allowing rain and snowmelt into the Site building;
- Approximately 75 55-gallon drums containing chromic acid, oils, mineral spirits, and unknown substances throughout the Site building;
- Approximately 35 5-gallon containers or pails of unknown substances throughout the Site building;
- An unlocked trailer in the rear of the Site containing drums of chromic acid;
- Physical evidence of trespasser and scavenger activity inside the Site building;
- Residential properties located within 10 feet of the Site building; and
- Chromium-containing wastes or acids leaching out of the Site building's walls into the neighborhood.

On June 5, 2009, U.S. EPA conducted a site assessment to investigate Site conditions that could pose imminent threat to human health, welfare, or the environment (see Section 3).

3. SITE ASSESSMENT ACTIVITIES

This section discusses the site reconnaissance and observations and sampling activities.

3.1 SITE RECONNAISSANCE AND OBSERVATIONS

On June 5, 2009, U.S. EPA OSC Ramon Mendoza and WESTON START mobilized to the Site to conduct the site assessment.

The site reconnaissance was conducted in Level B personal protective equipment (PPE) in accordance with the approved site-specific health and safety plan (HASP). Air monitoring was conducted in the breathing zone throughout the site reconnaissance using a MultiRAE five-gas meter, ToxiRAE single-gas monitor with hydrogen cyanide (HCN) sensor, and MicroR gamma radiation detector. The MultiRAE five-gas monitor includes a photoionization detector (PID) that measures for organic vapors, carbon monoxide (CO) sensor, hydrogen sulfide (H₂S) sensor, lower explosive limit (LEL) meter, and oxygen (O₂) meter.

Table 3-1 provides an inventory of the containers and potentially hazardous materials observed during the site reconnaissance. The photographic log in Appendix A depicts the Site conditions at the time of the site assessment. Observations made during the site assessment are summarized below.

In the exterior portions of the Site, entrance doorways were observed on three sides of the building. All entrances were locked. A Site representative provided access to the building. A door on the south side of the building was secured but in poor condition and falling off the hinges. Portions of the building roof were in disrepair. Window wells, which could collect rain water and leak into the Site building, were observed. No power currently is supplied to the Site building. Yellow staining was observed on bricks on the building exterior. Field screening for pH on the yellow-stained bricks indicated a pH of 7 standard units (SU) (neutral).

The asphalt-paved parking area contained a dumpster and an approximately 30-foot-long, portable storage container. The portable storage container had previously been secured by WESTON START

with a chain and padlock, which were in good condition at the time of the site assessment. The portable storage container stored approximately 22 55-gallon polyethylene drums stamped “CHROMIC ACID” and approximately eight 5-gallon polyethylene containers labeled “Chromic Acid Flakes.” Some of the drums were stacked, and all of the containers appeared in good or fair condition.

Several rooms were observed inside the building. The basement contained a main room and three smaller rooms to the northwest. The first floor contained the “old plating shop,” the “main plating shop,” an office area, and three other small adjoining rooms. The second floor contained a main room, a laboratory room, and two storage closets.

Throughout the basement, approximately 64 55-gallon drums and approximately 62 miscellaneous containers (less than 55 gallons) were observed. In addition, the basement had a dirt floor and no concrete foundation. The basement consisted of a main room and three smaller rooms to the northwest. Light was shining through the ceiling in the main room of the basement, indicating disrepair. The main room contained soil piles with bright yellow staining. A brick wall next to the soil piles also contained bright yellow staining. Approximately 12 5-gallon containers with unknown contents were stacked in the main room. In the second room of the basement, puddles of yellowish liquid were observed in several areas on the floor as well as four 55-gallon steel drums covered with polyethylene sheeting. One of the drums was labeled “Xylene.” The third room in the basement contained approximately 10 to 15 55-gallon polyethylene and steel drums of various materials (including chromic acid and isopropanol) and approximately 20 5-gallon polyethylene containers labeled “Chromic Acid Flakes.” The fourth room in the basement contained approximately 45 55-gallon polyethylene and steel drums of various materials (including chromic acid) and approximately 30 empty 10-gallon stacked containers (including containers labeled “Chromic Acid Flakes”). The remaining drums were unlabeled or were not visibly labeled. In addition, absorbent material (vermiculite) was observed to have been spread on the floor around the drums. Several of the 55-gallon drums were leaking onto the dirt floor and vermiculite.

Throughout the “old plating shop” on the first floor, miscellaneous debris, including several

unknown 5-gallon containers, and two vats were observed. One of the vats appeared empty and the other contained an unknown volume of a black viscous substance. A greenish-brown, unknown, powder-like substance was observed on the floor near the vats.

Throughout the “main plating shop” on the first floor, miscellaneous debris and approximately 20 55-gallon drums, eight miscellaneous containers (less than 55-gallons), and six vats were observed. Pipe-wrap insulation along the ceiling in the northwest portion of the “main plating shop” is potential asbestos-containing material (ACM). Boilers and other equipment also have potential ACM. Approximately 18 55-gallon polyethylene drums stamped “CHROMIC ACID” were observed. Some of the drums were stacked, and several were full of liquid with open bungs. Five 5-gallon open containers of a whitish-gray solid labeled “Corrosive” and “Chromic Acid Flakes” were observed. One 20-gallon empty polyethylene drum labeled “Hydrochloric Acid” and one 55-gallon empty steel drum labeled “Methyl ethyl ketone” were observed to be in good or fair condition. The “main plating shop” also contained one 55-gallon red polyethylene drum containing suspected spent chromic acid; one unmarked, open, 5-gallon container of yellowish-green, fluffy powdery material; and one unmarked open 5-gallon container of a black viscous substance. In addition, the “main plating shop” contained six vats. Two of the vats contained an unknown volume of a black viscous substance. One vat appeared empty, with a bluish-green powdery residue.

A closet in the three adjoining rooms on the first floor of the building contained two 5-gallon polyethylene containers labeled “Chromic Acid Flakes.” The containers were open and in poor condition. Inside a second storage room, shelving with some small (less than 5-gallon) containers of household cleaners and two boxes of mercury-containing fluorescent light bulbs were observed.

The second floor of the building contained one 55-gallon drum, approximately 10 miscellaneous containers (less than 55-gallon), miscellaneous debris and plating equipment, and an air-handling unit with potential ACM. In addition, several bricks were observed to be missing from the exterior wall, and windows were in disrepair. A closet south of the air-handling unit contained an open, 30-gallon fiberboard drum of an unknown, white-to-pale-yellow powder and a spilled container of a similar substance. The floor inside the closet was in disrepair, with holes in the floor. A second

closet contained one 55-gallon black steel drum with an open lid. The drum was approximately half full of 1-inch-diameter, whitish-to-pale-yellow briquettes. Outside the closet was a suspicious package wrapped in brown paper labeled "Poison." Shelving along the north wall held approximately six unknown 1-liter amber glass containers. A bench-top in the laboratory room on second floor contained two 1-liter amber glass containers labeled as acid solution.

The MultiRAE five-gas monitor and ToxiRAE single-gas monitor did not indicate any readings above background levels. The MicroR indicated gamma radiation at a range of 10 to 14 microRoentgens per hour ($\mu\text{R/hr}$) throughout the Site building. No additional readings above background levels were observed during the site reconnaissance.

3.2 SAMPLING ACTIVITIES

The sampling activities were conducted in Level B PPE in accordance with the approved site-specific HASP. Air monitoring was conducted in the breathing zone throughout the sampling activities using a MultiRAE five-gas meter and ToxiRAE single gas monitor with HCN sensor. The MultiRAE five-gas monitor includes a PID that measures for organic vapors, CO sensor, H₂S sensor, LEL meter, and O₂ meter.

Table 3-2 summarizes the waste samples collected at the Site. Three investigative liquid waste samples (plus one field duplicate sample) and six investigative solid waste samples (plus one field duplicate sample) were collected at the Site. Liquid waste samples EP-WL01-060509 through EP-WL03-060509 were collected from a 55-gallon drum in the portable storage container and two 55-gallon drums in the "main plating shop" on the first floor of the Site building. Solid waste samples EP-WS01-060509 and WP-WS02-060509 were collected from a 30-gallon fiberboard drum containing white-to-pale-yellow powder and a 55-gallon steel drum containing white-to-pale-yellow briquettes located on the second floor of the Site building, respectively. Solid waste sample EP-WS03-060509 consisted of a greenish-brown powder-like substance collected from the floor near the vats in the "old plating shop." Solid waste sample EP-WS04-060509 was collected from a 5-gallon container of yellowish-green fluffy powder in the "main plating shop." Solid waste samples EP-WS05-060509 (and a duplicate) and EP-WS06-060509 were collected from a soil pile with

bright yellow-staining and absorbent material on the dirt floor near the leaking drums in the basement, respectively.

Fresh sampling gloves were donned prior to commencing sampling activities at each new sampling location. All liquid and solid waste samples were collected as grab samples. Liquid waste samples were collected using glass drum thieves. Solid waste samples were collected using disposable plastic scoops. All sample containers were filled directly from the drum thieves or plastic scoops and labeled with the sample identification number, date, and time. All sampling information was recorded in the Site logbook. All samples were recorded on the chain-of-custody form. The three liquid waste samples (plus one field duplicate sample) were submitted to Microbac Laboratories, Inc., in Merrillville, Indiana, for the following analyses: Target Compound List (TCL) volatile organic compounds (VOC), TCL semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), Target Analyte List (TAL) metals, corrosivity, ignitibility, hexavalent chromium, and total cyanide. The six solid waste samples (plus one field duplicate sample) were submitted to Microbac Laboratories, Inc., in Merrillville, Indiana, for the following analyses: TCL VOCs, TCL SVOCs, PCBs, TAL metals, TCLP metals, corrosivity, ignitibility, and total cyanide.

After sampling activities were completed, the Site building was secured to restrict access.

4. ANALYTICAL RESULTS

Three investigative liquid waste samples (plus one field duplicate sample) and six investigative solid waste samples (plus one field duplicate sample) were collected from the Site. The samples were collected to determine if the Site poses imminent and substantial threats to human health, human welfare, or the environment. This section discusses the analytical results for the liquid and solid waste samples. Tables 4-1a through 4-1e summarize the liquid waste sample analytical results for TCL VOCs, TCL SVOCs, PCBs, TAL metals, and general chemistry parameters (pH, ignitibility, hexavalent chromium, and total cyanide), respectively. Tables 4-2a through 4-2f summarize the solid waste sample analytical results for TCL VOCs, TCL SVOCs, PCBs, TAL metals, TCLP metals, and general chemistry parameters (pH, ignitibility, and total cyanide), respectively. Appendix B provides the laboratory analytical report and data validation report for the samples. Analytical results for the TCLP metals and general chemistry parameters were compared to the hazardous waste criteria outlined in Title 40 of the *Code of Federal Regulations* (40 CFR), Part 261, Subpart C.

4.1 Liquid Waste Sample Analytical Results

Laboratory analytical results for the liquid waste samples collected from drums and containers are summarized below.

- **TCL VOCs (see Table 4-1a):** VOCs were not detected in any of the liquid waste samples.
- **TCL SVOCs (see Table 4-1b):** SVOCs were not detected in any of the liquid waste samples.
- **PCBs (see Table 4-1c):** PCBs were not detected in any of the liquid waste samples.
- **TAL Metals (see Table 4-1d):** Metals were detected at various concentrations in the liquid waste samples. Barium, beryllium, lead, potassium, selenium, silver, thallium, and vanadium were not detected in any of the liquid waste samples. The highest metal concentrations detected were for chromium, copper, iron, and sodium.
 - Chromium was detected in all three investigative liquid waste samples (and the field duplicate sample) at concentrations ranging from 3,800 to 97,000 milligrams per liter (mg/L). The highest concentration of chromium was detected in liquid waste sample EP-WL02-060509.

- Copper was detected in all three investigative liquid waste samples (and the field duplicate sample) at concentrations ranging from 200 to 2,100 mg/L. The highest concentration of copper was detected in investigative liquid waste sample EP-WL02-060509 and field duplicate sample EP-WL01-060509.
- Iron was detected in all three investigative liquid waste samples (and the field duplicate sample) at concentrations ranging from 74 to 5,500 mg/L. The highest concentration of iron was detected in liquid waste sample EP-WL02-060509.
- Sodium was detected in all three investigative liquid waste samples (and the field duplicate sample) at concentrations ranging from 93 to 2,800 mg/L. The highest concentration of sodium was detected in liquid waste sample EP-WL02-060509.
- **Corrosivity (see Table 4-1e):** Results for pH in the investigative liquid waste samples ranged from 0.02 to 2.51 SUs. Analytical results indicate that two investigative liquid waste samples (EP-WL01-060509 and EP-WL02-060509) had pH value of less than 2 SU. These two liquid waste samples meet the definition of hazardous waste for the characteristic of corrosivity according to 40 CFR 261.22.
- **Ignitability (see Table 4-1e):** Flashpoint results in the investigative liquid waste samples were all greater than 170 degrees Fahrenheit (°F). None of the liquid waste samples meet the definition of hazardous waste for the characteristic of ignitability according to 40 CFR 261.21.
- **Hexavalent Chromium (see Table 4-1e):** Results for hexavalent chromium in the investigative liquid waste samples ranged from 20,000 to 410,000 mg/L. The highest concentration of hexavalent chromium was detected in liquid waste sample EP-WL02-060509.
- **Total Cyanide (see Table 4-1e):** Results for total cyanide in the investigative liquid waste samples ranged from non-detect to 52 mg/L. The highest concentration of total cyanide was detected in investigative liquid waste sample EP-WL01-060509.

4.2 Solid Waste Sample Analytical Results

Laboratory analytical results for the solid waste samples collected from drums and containers are summarized below.

- **TCL VOCs (see Table 4-2a):** The following five VOCs were detected at low levels in at least one investigative solid waste sample: 2-butanone (also known as methyl ethyl ketone); ethylbenzene; m,p-xylene; o-xylene; and total xylenes. The highest concentrations of all five VOCs detected were in investigative solid waste sample EP-WS06-060509.
- **TCL SVOCs (see Table 4-2b):** One SVOC, bis(2-ethylhexyl)phthalate, was detected at low levels in two investigative solid waste samples. The highest concentration of

bis(2-ethylhexyl)phthalate was 250 milligrams per kilogram (mg/kg) in investigative solid waste sample EP-WS04-060509.

- **PCBs (see Table 4-2c):** One PCB, Aroclor-1248, was detected in investigative solid waste sample EP-WS06-060509 at a concentration of 0.93 mg/kg.
- **TAL Metals (see Table 4-2d):** Metals were detected at various concentrations in the solid waste samples. Beryllium and selenium were not detected in any of the solid waste samples. The highest metal concentrations detected were for calcium, chromium, iron, magnesium, and sodium.
 - Calcium was detected in five investigative solid waste samples (and the field duplicate sample) at concentrations ranging from 1,000 to 68,000 mg/kg. The highest concentration of calcium was detected in field duplicate sample EP-WS05-060509D.
 - Chromium was detected in all of the investigative solid waste samples (and the field duplicate sample) at concentrations ranging from 9.7 to 63,000 mg/kg. The highest concentration of chromium was detected in field duplicate sample EP-WS05-060509D.
 - Iron was detected in all of the investigative solid waste samples (and the field duplicate sample) at concentrations ranging from 59 to 14,000 mg/kg. The highest concentration of iron was detected in investigative solid waste samples EP-WS05-060509 and EP-WS06-060509, and in field duplicate sample EP-WS05-060509D.
 - Magnesium was detected in five investigative solid waste samples (and the field duplicate sample) at concentrations ranging from 270 to 32,000 mg/kg. The highest concentration of magnesium was detected in investigative solid waste sample EP-WS03-060509.
 - Sodium was detected in all of the investigative solid waste samples (and the field duplicate sample) at concentrations ranging from 490 to 430,000 mg/kg. The highest concentration of sodium was detected in investigative solid waste sample EP-WS02-060509.
- **TCLP Metals (see Table 4-2e):** The TCLP arsenic result for one investigative solid waste sample (EP-WS05-060509) exceeded the regulatory limit for arsenic of 5 mg/L. The TCLP chromium result for five investigative solid waste samples (EP-WS01-060509, and EP-WS03-060509 through EP-WS06-060509) exceeded the regulatory limit for chromium of 5 mg/L. These five investigative solid waste samples meet the definition of a hazardous waste for the toxicity characteristic as stated in 40 CFR 261.24.
- **Corrosivity (see Table 4-2f):** Results for pH in the investigative solid waste samples ranged from 6.1 to 12.2 SUs. The most basic pH result was detected in investigative solid waste sample EP-WS02-060509. None of the solid waste samples meet the definition of a hazardous waste for the characteristic of corrosivity according to 40 CFR 261.22.

- **Ignitability (see Table 4-2f):** Flashpoint results in the investigative solid waste samples were all greater than 170 °F. None of the investigative liquid waste samples meet the definition of a hazardous waste for the characteristic of ignitability according to 40 CFR 261.21.
- **Total Cyanide (see Table 4-2f):** Results for total cyanide in the investigative solid waste samples ranged from 1.3 J to 350,000 J mg/kg. The highest concentration of total cyanide was detected in investigative solid waste sample EP-WS02-060509.

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5. THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

Factors to be considered in determining the appropriateness of a potential removal action at a Site are delineated in the NCP at 40 CFR 300.415(b)(2). A summary of the factors applicable to this Site is presented below.

- **Hazardous substances, pollutants, or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release**

The Site contains approximately 110 55-gallon drums, 85 miscellaneous containers (less than 55 gallons), and six vats. Because several of the drums and miscellaneous containers are in poor condition (open and leaking), the threat of release is high.

Materials identified at the Site were characterized as hazardous waste for corrosivity as defined in 40 CFR 261.22.

Materials identified at the Site were characterized as hazardous waste for toxicity as defined in 40 CFR 261.24.

Analytical results for investigative solid waste sample EP-WS05-060509, which was collected from yellow-stained soil in the basement, indicate the presence of SVOCs, metals, and cyanide. This sample also meets the definition of a hazardous waste for TCLP arsenic and chromium. Because the yellow-stained soil is not contained and is present on the dirt floor of the basement, sample EP-WS05-060509 documents an actual release of hazardous substances.

Analytical results for investigative solid waste sample EP-WS06-060509, which was collected from absorbent material on the dirt floor near leaking drums in the basement, indicate the presence of VOCs, PCBs, metals, and cyanide. This sample also meets the definition of a hazardous waste for TCLP chromium. Because the absorbent material is not contained by a concrete floor and is present on the dirt floor of the basement, sample EP-WS06-060509 documents an actual release of hazardous substances.

- **Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants**

The Site is located in a mixed residential/commercial area. An apartment building abuts the northwest side of the Site building, and residences are located southeast and southwest of the Site. The doors to the Site building are kept locked by the property owner; however, some entrances to the building are in disrepair and evidence of vandalism was observed.

As noted above, hazardous waste has been identified at the Site. Because the drums are in poor condition and yellow staining was observed on the exterior portions of the Site building (indicating leaching of chromic acid), the threat of exposure of nearby populations exists.

- **Weather conditions that may cause hazardous substances, pollutants, or contaminants to migrate or be released**

As mentioned above, the drums and miscellaneous containers are in poor condition (some are open and leaking). Although the drums and miscellaneous containers are stored inside the Site building, most of the drums are stored in the basement, which has a dirt floor. Heavy rains or the rise of the water table could cause contents from leaking drums to migrate to soil. In addition, the presence of window wells and the disrepair of the roof, windows, and brick walls may allow rain water to enter the building, causing the potential for hazardous substances to migrate or be released to groundwater.

- **Threat of fire or explosion**

Although analytical results did not indicate that flammable materials are present in the Site building, several gasoline containers and drums containing flammable liquids (such as methyl ethyl ketone, xylene, and isopropanol) were observed in the Site building. Based on the disrepair of the Site building and evidence of vapors at the Site, these flammable liquids could interact with strong oxidizers (such as chromic acid) present at the Site; therefore, the threat of fire or explosion exists at the Site.

6. CONCLUSIONS AND RECOMMENDATIONS

This section summarizes conclusions based on site assessment findings and provides recommendations for further site activities.

6.1 CONCLUSIONS

During the site assessment, a total of four liquid waste and seven solid waste samples were collected from drums and containers at the Site. Analytical results indicate that two investigative liquid waste samples (EP-WL01-060509 and EP-WL02-060509) had pH values of less than 2 SU. Analytical results indicate that one investigative solid waste sample (EP-WS05-060509) exceeded the TCLP regulatory limit for arsenic of 5 mg/L. Analytical results also indicate that five investigative solid waste samples (EP-WS01-060509, and EP-WS03-060509 through EP-WS06-060509) exceeded the TCLP regulatory limit for chromium of 5 mg/L. Based on the site assessment results, the Site poses an imminent and substantial threat to human health, human welfare, and the environment. Hazards identified at the Site include the following:

- Wastes exhibiting characteristics of corrosive materials;
- Wastes exhibiting characteristics of toxicity for arsenic and chromium;
- Wastes containing cyanide;
- Contaminants in uncontained areas (dirt-floor basement);
- Disrepair of the Site building (roof, windows, and brick walls);
- Evidence of vagrants and vandalism; and
- Close proximity of residents to the Site.

Contaminants and conditions at the Site meet criteria established in the NCP for a removal action. As a result of the site assessment and associated analytical results, U.S. EPA conducted an emergency removal action at the Site on June 13, 2009. The emergency removal action was conducted to remove cyanide waste from the Site building to mitigate imminent and substantial endangerment posed to human health, human welfare, and the environment. An additional removal

action could be performed to reduce the potential for release of hazardous materials, primarily to soil and groundwater through the dirt floor of the basement.

6.2 RECOMMENDATIONS

Based on the information gathered during the site assessment, WESTON START recommendations are summarized below.

- Before further response activities are conducted, Site access should be restricted to limit the potential for releases of hazardous substances.
- Current operations at the Site have been discontinued, but threats resulting from the Site should be fully characterized and mitigated.
- All uncontrolled wastes should be removed from the Site to reduce the potential for a release of hazardous materials that could result in, but not be limited to, any or all of the following:
 - Potential exposure of human populations to Site contaminants; and
 - Potential for fire at the Site that could result in releases of hazardous contaminants and vapors.

FIGURE

TABLES

**Table 3-1
Inventory of Containers and Potentially Hazardous Materials
Economy Plating Site
Chicago, Cook County, Illinois**

Area	Room or Area	Estimated No. of Containers	Container Size	Type of Container	Contents/Description
Outside Site Building	Portable storage container	22	55-gallon	Polyethylene drums	Stamped "CHROMIC ACID"
		8	5-gallon	Polyethylene pails	Labeled "Chromic Acid Flakes"
Basement	Main room	12	5-gallon	Polyethylene pails	Unknown
	Middle room	4	55-gallon	Steel drums	Covered with polyethylene sheeting; one labeled "Xylene"
	Northwest of middle room	10 to 15	55-gallon	Polyethylene and steel drums	Various materials including chromic acid and isopropanol
		15 to 20	5-gallon	Polyethylene pails	Labeled "Chromic Acid Flakes"
	Last room	45	55-gallon	Polyethylene and steel drums	Various materials including chromic acid
		30	10-gallon	Polyethylene	Empty; labeled as "Chromic Acid Flakes"
		1	20-gallon	Stainless-steel keg	Nitric acid
First Floor	Old plating shop	5	5-gallon	Polyethylene	Unknown
		2	unknown	Steel vats	One empty; one contained black, viscous substance
	Main plating shop	18	55-gallon	Polyethylene drums	Stamped "CHROMIC ACID"
		5	5-gallon	Polyethylene pails	Open; whitish-gray solid; labeled "Corrosive" and "Chromic Acid Flakes"
		1	20-gallon	Polyethylene drum	Empty; labeled "RIN, INC.; hydrochloric acid 20; UN1789" and "Corrosive"
		1	55-gallon	Steel drum	Empty; labeled "Methyl ethyl ketone"
		6	unknown	Steel vats	Two contained an unknown, black, viscous substance; one appeared empty, with a bluish-green powdery residue
		1	55-gallon	Polyethylene drum	Red; suspected to contain spent chromic acid
		1	5-gallon	Polyethylene pail	Unmarked and open; contained yellowish-green, fluffy, powdery material
		1	5-gallon	Polyethylene pail	Unmarked and open; contained black, viscous substance
		NA	NA	Ceiling pipes, boilers, etc.	Pipe-wrap; potential ACM components
	Three adjoining rooms	2	5-gallon	Polyethylene pails	Open; labeled "Chromic Acid Flakes"
		10 to 15	various (less than 5-gallon)	Polyethylene	Household cleaners
		2	NA	Boxes	Mercury-containing fluorescent light bulbs

Table 3-1
Inventory of Containers and Potentially Hazardous Materials
Economy Plating Site
Chicago, Cook County, Illinois

Area	Room or Area	Estimated No. of Containers	Container Size	Type of Container	Contents/Description
Second Floor	Closet near air handling unit	1	30-gallon	Fiberboard drum	Open; contained unknown white-to-pale-yellow powder
	Second closet	1	55-gallon	Steel drum	Open; black; approximately 50 percent full of 1-inch-diameter, whitish-to-pale-yellow briquettes
	Main room	1	1-pound	Paper bag	Suspicious package labeled "Poison"; identified as cyanide during emergency removal activities
		6	1-liter	Amber glass	Unknown
		NA	NA	Air-handling unit	Potential ACM components
	Laboratory	2	1-liter	Amber glass	Labeled as acid solution

Notes:

ACM = Asbestos-containing material

NA = Not applicable

**Table 3-2
Waste Sample Summary
Economy Plating Site
Chicago, Cook County, Illinois**

Field Sample ID	Sampling Date	Sampling Time	Sample Type	Sampling Location	Sample Description	Sample Analyses
Liquid Waste Samples						
EP-WL01-60509	6/5/2009	1400	Grab, Field Sample	55-gallon polyethylene drum in portable storage container	Red liquid; suspected chromic acid	TCL VOCs, TCL SVOCs, PCBs, TAL Metals, Corrosivity, Ignitability, Hexavalent Chromium, Total Cyanide
EP-WL01-60509D	6/5/2009	1400	Grab, Field Duplicate	Field duplicate of EP-WL01-060509		
EP-WL02-60509	6/5/2009	1428	Grab, Field Sample	55-gallon red polyethylene drum in northwest portion of "main plating shop"	Red liquid; suspected spent chromic acid	
EP-WL03-60509	6/5/2009	1430	Grab, Field Sample	55-gallon polyethylene drum in "main plating shop"	Red liquid; suspected chromic acid	
Solid Waste Samples						
EP-WS01-60509	6/5/2009	1410	Grab, Field Sample	Open-top 30-gallon fiberboard drum south of air-handling unit on second floor	White-to-pale-yellow powder	TCL VOCs, TCL SVOCs, PCBs, TAL Metals, TCLP Metals, Corrosivity, Ignitability, Total Cyanide
EP-WS02-60509	6/5/2009	1420	Grab, Field Sample	55-gallon black steel drum with open-top lid in closet on second floor	1-inch-diameter whitish-to-pale-yellow briquettes	
EP-WS03-60509	6/5/2009	1425	Grab, Field Sample	On floor near vats in "old plating shop"	Greenish-brown, unknown, powder-like substance	
EP-WS04-060509	6/5/2009	1445	Grab, Field Sample	Unmarked, open 5-gallon container in "main plating shop"	Yellowish-green fluffy powder	
EP-WS05-060509	6/5/2009	1505	Grab, Field Sample	Main room in basement along southeast wall	Soil pile with bright yellow staining; suspected chromic acid waste	
EP-WS05-060509D	6/5/2009	1505	Grab, Field Duplicate	Field duplicate of EP-WS05-060509		
EP-WS06-060509	6/5/2009	1515	Grab, Field Sample	Absorbent material (vermiculite) on floor near leaking drums in basement	Absorbent material (vermiculite)	

Notes:

ID = Identification

PCB = Polychlorinated biphenyl

SVOC = Semivolatile organic compound

TAL = Target Analyte List

TCL = Target Compound List

TCLP = Toxicity Characteristic Leaching Procedure

VOC = Volatile organic compound

Table 4-1a
Liquid Waste Sample Analytical Results for TCL VOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
Matrix	Liquid Waste	Liquid Waste	Liquid Waste	Liquid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
TCL VOC (mg/L)				
1,1,1,2-Tetrachloroethane	0.01 U	0.01 U	0.5 U	0.01 U
1,1,1-Trichloroethane	0.005 U	0.005 U	0.25 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.25 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.25 U	0.005 U
1,1-Dichloroethane	0.005 U	0.005 U	0.25 U	0.005 U
1,1-Dichloroethene	0.005 U	0.005 U	0.25 U	0.005 U
1,2-Dichloroethane	0.005 U	0.005 U	0.25 U	0.005 U
1,2-Dichloropropane	0.005 U	0.005 U	0.25 U	0.005 U
2-Butanone	0.01 U	0.01 U	0.5 U	0.01 U
2-Hexanone	0.01 U	0.01 U	0.5 U	0.01 U
4-Methyl-2-Pentanone	0.01 U	0.01 U	0.5 U	0.01 U
Acetone	0.05 U	0.05 U	2.5 U	0.05 U
Acrolein	0.1 U	0.1 U	5 U	0.1 U
Acrylonitrile	0.1 U	0.1 U	5 U	0.1 U
Benzene	0.005 U	0.005 U	0.25 U	0.005 U
Bromodichloromethane	0.005 U	0.005 U	0.25 U	0.005 U
Bromoform	0.005 U	0.005 U	0.25 U	0.005 U
Bromomethane	0.01 U	0.01 U	0.5 U	0.01 U
Carbon disulfide	0.01 U	0.01 U	0.5 U	0.01 U
Carbon tetrachloride	0.005 U	0.005 U	0.25 U	0.005 U
Chlorobenzene	0.005 U	0.005 U	0.25 U	0.005 U
Chloroethane	0.01 U	0.01 U	0.5 U	0.01 U
Chloroform	0.005 U	0.005 U	0.25 U	0.005 U
Chloromethane	0.01 U	0.01 U	0.5 U	0.01 U
cis-1,2-Dichloroethene	0.005 U	0.005 U	0.25 U	0.005 U
cis-1,3-Dichloropropene	0.005 U	0.005 U	0.25 U	0.005 U
Dibromochloromethane	0.005 U	0.005 U	0.25 U	0.005 U
Ethylbenzene	0.005 U	0.005 U	0.25 U	0.005 U
m,p-Xylene	0.005 U	0.005 U	0.25 U	0.005 U
Methylene chloride	0.005 U	0.005 U	0.25 U	0.005 U
Methyl-tert-butyl ether	0.005 U	0.005 U	0.25 U	0.005 U
o-Xylene	0.005 U	0.005 U	0.25 U	0.005 U
Styrene	0.005 U	0.005 U	0.25 U	0.005 U
Tetrachloroethene	0.005 U	0.005 U	0.25 U	0.005 U
Toluene	0.005 U	0.005 U	0.25 U	0.005 U
Total xylenes	0.005 U	0.005 U	0.25 U	0.005 U
trans-1,2-Dichloroethene	0.005 U	0.005 U	0.25 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.005 U	0.25 U	0.005 U

Table 4-1a
Liquid Waste Sample Analytical Results for TCL VOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
Matrix	Liquid Waste	Liquid Waste	Liquid Waste	Liquid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
TCL VOC (mg/L)				
Trichloroethene	0.005 U	0.005 U	0.25 U	0.005 U
Trichlorofluoromethane	0.01 U	0.01 U	0.5 U	0.01 U
Vinyl acetate	0.01 U	0.01 U	0.5 U	0.01 U
Vinyl chloride	0.002 U	0.002 U	0.1 U	0.002 U

Notes:

ID = Identification

mg/L = Milligram per liter

TCL = Target Compound List

U = Not detected; the associated numerical value is the reporting limit

VOC = Volatile organic compound

Table 4-1b
Liquid Waste Sample Analytical Results for TCL SVOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
Matrix	Liquid Waste	Liquid Waste	Liquid Waste ¹	Liquid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
TCL SVOC (mg/L)				
1,2,4-Trichlorobenzene	0.1 U	0.1 U	9.9 U	0.1 U
1,2-Dichlorobenzene	0.1 U	0.1 U	9.9 U	0.1 U
1,2-Diphenyl-hydrazine	0.1 U	0.1 U	9.9 U	0.1 U
1,3-Dichlorobenzene	0.1 U	0.1 U	9.9 U	0.1 U
1,4-Dichlorobenzene	0.1 U	0.1 U	9.9 U	0.1 U
2,2'-oxybis(1-Chloropropane)	0.1 U	0.1 U	9.9 U	0.1 U
2,4,5-Trichlorophenol	0.1 U	0.1 U	48 U	0.1 U
2,4,6-Trichlorophenol	0.1 U	0.1 U	9.9 U	0.1 U
2,4-Dichlorophenol	0.1 U	0.1 U	9.9 U	0.1 U
2,4-Dimethylphenol	0.1 U	0.1 U	9.9 U	0.1 U
2,4-Dinitrophenol	0.5 U	0.5 U	48 U	0.5 U
2,4-Dinitrotoluene	0.1 U	0.1 U	9.9 U	0.1 U
2,6-Dichlorophenol	0.1 U	0.1 U	9.9 U	0.1 U
2,6-Dinitrotoluene	0.1 U	0.1 U	9.9 U	0.1 U
2-Chloronaphthalene	0.1 U	0.1 U	9.9 U	0.1 U
2-Chlorophenol	0.1 U	0.1 U	9.9 U	0.1 U
2-Methylnaphthalene	0.1 U	0.1 U	9.9 U	0.1 U
2-Methylphenol	0.1 U	0.1 U	9.9 U	0.1 U
2-Nitroaniline	0.5 U	0.5 U	48 U	0.5 U
2-Nitrophenol	0.1 U	0.1 U	9.9 U	0.1 U
3,3'-Dichlorobenzidine	0.5 U	0.5 U	48 U	0.5 U
3,4-Methylphenol	0.1 U	0.1 U	9.9 U	0.1 U
3-Nitroaniline	0.5 U	0.5 U	48 U	0.5 U
4,6-Dinitro-2-methylphenol	0.5 U	0.5 U	48 U	0.5 U
4-Bromophenyl phenyl ether	0.1 U	0.1 U	9.9 U	0.1 U
4-Chloro-3-methylphenol	0.2 U	0.2 U	20 U	0.2 U
4-Chloroaniline	0.1 U	0.1 U	9.9 U	0.1 U
4-Chlorophenyl phenyl ether	0.1 U	0.1 U	9.9 U	0.1 U
4-Nitroaniline	0.5 U	0.5 U	48 U	0.5 U
4-Nitrophenol	0.5 U	0.5 U	48 U	0.5 U
Acenaphthene	0.1 U	0.1 U	9.9 U	0.1 U
Acenaphthylene	0.1 U	0.1 U	9.9 U	0.1 U
Acetophenone	0.1 U	0.1 U	9.9 U	0.1 U
Aniline	0.1 U	0.1 U	9.9 U	0.1 U
Anthracene	0.1 U	0.1 U	9.9 U	0.1 U
Benzidine	0.5 U	0.5 U	48 U	0.5 U
Benzo(a)anthracene	0.1 U	0.1 U	9.9 U	0.1 U
Benzo(a)pyrene	0.1 U	0.1 U	9.9 U	0.1 U
Benzo(b)fluoranthene	0.1 U	0.1 U	9.9 U	0.1 U
Benzo(g,h,i)perylene	0.1 U	0.1 U	9.9 U	0.1 U
Benzo(k)fluoranthene	0.1 U	0.1 U	9.9 U	0.1 U
Benzoic acid	0.5 U	0.5 U	48 U	0.5 U

Table 4-1b
Liquid Waste Sample Analytical Results for TCL SVOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
Matrix	Liquid Waste	Liquid Waste	Liquid Waste ¹	Liquid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
TCL SVOC (mg/L)				
Benzyl alcohol	0.2 U	0.2 U	20 U	0.2 U
Bis(2-chloroethoxy)methane	0.1 U	0.1 U	9.9 U	0.1 U
Bis(2-chloroethyl)ether	0.1 U	0.1 U	9.9 U	0.1 U
Bis(2-ethylhexyl)phthalate	0.1 U	0.1 U	9.9 U	0.1 U
Butyl benzyl phthalate	0.1 U	0.1 U	9.9 U	0.1 U
Carbazole	0.1 U	0.1 U	9.9 U	0.1 U
Chrysene	0.1 U	0.1 U	9.9 U	0.1 U
Dibenzo(a,h)anthracene	0.1 U	0.1 U	9.9 U	0.1 U
Dibenzofuran	0.1 U	0.1 U	9.9 U	0.1 U
Diethyl phthalate	0.1 U	0.1 U	9.9 U	0.1 U
Dimethyl phthalate	0.1 U	0.1 U	9.9 U	0.1 U
Di-n-butyl phthalate	0.1 U	0.1 U	9.9 U	0.1 U
Di-n-octyl phthalate	0.1 U	0.1 U	9.9 U	0.1 U
Fluoranthene	0.1 U	0.1 U	9.9 U	0.1 U
Fluorene	0.1 U	0.1 U	9.9 U	0.1 U
Hexachlorobenzene	0.1 U	0.1 U	9.9 U	0.1 U
Hexachlorobutadiene	0.1 U	0.1 U	9.9 U	0.1 U
Hexachlorocyclopentadiene	0.1 U	0.1 U	9.9 U	0.1 U
Hexachloroethane	0.1 U	0.1 U	9.9 U	0.1 U
Indeno(1,2,3cd)pyrene	0.1 U	0.1 U	9.9 U	0.1 U
Isophorone	0.1 U	0.1 U	9.9 U	0.1 U
Naphthalene	0.1 U	0.1 U	9.9 U	0.1 U
Nitrobenzene	0.1 U	0.1 U	9.9 U	0.1 U
N-Nitrosodimethylamine	0.1 U	0.1 U	9.9 U	0.1 U
N-Nitrosodi-n-propylamine	0.1 U	0.1 U	9.9 U	0.1 U
N-Nitrosodiphenylamine	0.1 U	0.1 U	9.9 U	0.1 U
Pentachlorophenol	0.5 U	0.5 U	48 U	0.5 U
Phenanthrene	0.1 U	0.1 U	9.9 U	0.1 U
Phenol	0.1 U	0.1 U	9.9 U	0.1 U
Pyrene	0.1 U	0.1 U	9.9 U	0.1 U
Pyridine	0.1 U	0.1 U	9.9 U	0.1 U
Total Ccesol	0.1 U	0.1 U	9.9 U	0.1 U

Notes:

¹SVOC results for liquid waste sample EP-WL02-060509 reported in milligrams per kilogram (mg/kg)

ID = Identification

mg/L = Milligram per liter

SVOC = Semivolatile organic compound

TCL = Target Compound List

U = Not detected; the associated numerical value is the reporting limit

Table 4-1c
Liquid Waste Sample Analytical Results for PCBs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
Matrix	Liquid Waste	Liquid Waste	Liquid Waste	Liquid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
PCB (mg/L)				
Aroclor 1016	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1221	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1232	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1242	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1248	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1254	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1260	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1262	0.005 U	0.005 U	0.005 U	0.005 U
Aroclor 1268	0.005 U	0.005 U	0.005 U	0.005 U
Total PCBs	0.005 U	0.005 U	0.005 U	0.005 U

Notes:

ID = Identification

mg/L = Milligram per liter

PCB = Polychlorinated biphenyl

U = Not detected; the associated numerical value is the reporting limit

Table 4-1d
Liquid Waste Sample Analytical Results for TAL Metals
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
Matrix	Liquid Waste	Liquid Waste	Liquid Waste	Liquid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
TAL Metal (mg/L)				
Aluminum, Total	670	750	820	29
Antimony, Total	20 U	75	20 U	2 U
Arsenic, Total	11	13	47	1.6
Barium, Total	2 U	2 U	2 U	0.2 U
Beryllium, Total	1 U	1 U	1 U	0.1 U
Cadmium, Total	4.5	5.1	14	0.2 U
Calcium, Total	630	710	500 U	330
Chromium, Total	49,000	54,000	97,000	3,800
Copper, Total	2,000	2,100	2,100	200
Iron, Total	3,300	3,600	5,500	74
Lead, Total	7.5 U	7.5 U	7.5 U	0.75 U
Magnesium, Total	500 U	500 U	580	87
Manganese, Total	21	26	28	2.7
Nickel, Total	50	55	120	1.3
Potassium, Total	500 U	500 U	500 U	50 U
Selenium, Total	30 U	30 U	30 U	3 U
Silver, Total	10 U	10 U	10 U	1 U
Sodium, Total	1,800	1,900	2,800	93
Thallium, Total	50 U	50 U	50 U	5 U
Vanadium, Total	8 U	8 U	8 U	0.8 U
Zinc, Total	110	120	270	5.4
Mercury, Total	0.0002 U	0.0002 U	0.0002 U	0.0012

Notes:

Bolded results indicate detections above the reporting limit.

ID = Identification

mg/L = Milligram per liter

TAL = Target Analyte List

U = Not detected; the associated numerical value is the reporting limit

Table 4-1e
Liquid Waste Sample Analytical Results for General Chemistry Parameters
Economy Plating Site
Chicago, Cook County, Illinois

Screening Criterion ¹	Field Sample ID	EP-WL01-060509	EP-WL01-060509D	EP-WL02-060509	EP-WL03-060509
	Matrix	Waste Liquid	Waste Liquid	Waste Liquid	Waste Liquid
	Sample Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009
	Location ID	EP-WL01	EP-WL01	EP-WL02	EP-WL03
General Chemistry Parameter					
2 SU	pH (SU)	0.02 UH	0.02 UH	0.02 UH	2.51 H
< 140 °F	Ignitability (°F)	> 170	> 170	> 170	> 170
NA	Chromium, Hexavalent (mg/L)	230,000 H	240,000 H	410,000 H	20,000 H
NA	Cyanide, Total (mg/L)	52	0.05 U	0.053	0.055

Notes:

¹Title 40 of the Code of Federal Regulations (CFR), Part 261 - Identification and Listing of Hazardous Waste

Bolded results indicate detections above the reporting limit.

Shaded results exceed screening criteria (see Note 1)

< =Less than

> = Greater than

H = Sample was prepared and/or analyzed outside of the sample holding time

ID = Identification

mg/L = Milligram per liter

NA = Not applicable

°F = Degree Fahrenheit

SU = Standard unit

U = Not detected at a concentration exceeding the reporting limit; the associated numerical value is the reporting limit

Table 4-2a
Solid Waste Sample Analytical Results for TCL VOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TCL VOC (mg/kg)							
1,1,1,2-Tetrachloroethane	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
1,1,1-Trichloroethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
1,1-Dichloroethene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
2-Butanone	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.013
2-Hexanone	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-Pentanone	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
Acetone	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U
Acrolein	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U
Acrylonitrile	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U
Benzene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Bromodichloromethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Bromoform	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Bromomethane	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
Carbon disulfide	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
Carbon tetrachloride	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Chlorobenzene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Chloroethane	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
Chloroform	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Chloromethane	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
cis-1,2-Dichloroethene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
cis-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Dibromochloromethane	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U

Table 4-2a
Solid Waste Sample Analytical Results for TCL VOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TCL VOC (mg/kg)							
Ethylbenzene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.03
m,p-Xylene	0.005 U	0.005 U	0.005 U	0.02	0.005 U	0.005 U	0.12
Methylene chloride	0.02 U	0.02 U	0.02 U	0.04 U	0.02 U	0.02 U	0.02 U
Methyl-tert-butyl ether	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.055
Styrene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Tetrachloroethene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Toluene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Total xylenes	0.005 U	0.005 U	0.005 U	0.02	0.005 U	0.005 U	0.18
trans-1,2-Dichloroethene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Trichloroethene	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U
Trichlorofluoromethane	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
Vinyl acetate	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U
Vinyl chloride	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U

Notes:

Bolded results indicate detections above the reporting limit.

ID = Identification

mg/kg = Milligram per kilogram

TCL = Target Compound List

U = Not detected; the associated numerical value is the reporting limit

VOC = Volatile organic compound

Table 4-2b
Solid Waste Sample Analytical Results for TCL SVOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TCL SVOC (mg/kg)							
1,2,4-Trichlorobenzene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
1,2-Dichlorobenzene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
1,2-Diphenyl-hydrazine	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
1,3-Dichlorobenzene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
1,4-Dichlorobenzene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,2'-oxybis(1-Chloropropane)	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,4,5-Trichlorophenol	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
2,4,6-Trichlorophenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,4-Dichlorophenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,4-Dimethylphenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,4-Dinitrophenol	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
2,4-Dinitrotoluene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,6-Dichlorophenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2,6-Dinitrotoluene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2-Chloronaphthalene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2-Chlorophenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2-Methylnaphthalene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2-Methylphenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
2-Nitroaniline	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
2-Nitrophenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
3,3'-Dichlorobenzidine	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
3,4-Methylphenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
3-Nitroaniline	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
4,6-Dinitro-2-methylphenol	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
4-Bromophenyl phenyl ether	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
4-Chloro-3-methylphenol	2 U	2 U	2 U	3.3 U	2 U	2 U	4 U
4-Chloroaniline	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
4-Chlorophenyl phenyl ether	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U

Table 4-2b
Solid Waste Sample Analytical Results for TCL SVOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TCL SVOC (mg/kg)							
4-Nitroaniline	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
4-Nitrophenol	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
Acenaphthene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Acenaphthylene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Acetophenone	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Aniline	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Anthracene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Benzidine	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
Benzo(a)anthracene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Benzo(a)pyrene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Benzo(b)fluoranthene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Benzo(g,h,i)perylene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Benzo(k)fluoranthene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Benzoic acid	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
Benzyl alcohol	2 U	2 U	2 U	3.3 U	2 U	2 U	4 U
Bis(2-chloroethoxy)methane	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Bis(2-chloroethyl)ether	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Bis(2-ethylhexyl)phthalate	0.99 U	0.99 U	0.99 U	250	1.8	0.99 U	2 U
Butyl benzyl phthalate	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Carbazole	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Chrysene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Dibenzo(a,h)anthracene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Dibenzofuran	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Diethyl phthalate	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Dimethyl phthalate	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Di-n-butyl phthalate	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Di-n-octyl phthalate	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Fluoranthene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U

Table 4-2b
Solid Waste Sample Analytical Results for TCL SVOCs
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TCL SVOC (mg/kg)							
Fluorene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Hexachlorobenzene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Hexachlorobutadiene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Hexachlorocyclopentadiene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Hexachloroethane	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Indeno(1,2,3cd)pyrene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Isophorone	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Naphthalene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Nitrobenzene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
N-Nitrosodimethylamine	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
N-Nitrosodi-n-propylamine	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
N-Nitrosodiphenylamine	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Pentachlorophenol	4.8 U	4.8 U	4.8 U	8 U	4.7 U	4.8 U	9.6 U
Phenanthrene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Phenol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Pyrene	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Pyridine	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U
Total Cresol	0.99 U	0.99 U	0.99 U	1.6 U	0.98 U	0.99 U	2 U

Notes:

Bolded results indicate detections above the reporting limit.

ID = Identification

mg/kg = Milligram per kilogram

SVOC = Semivolatile organic compound

TCL = Target Compound List

U = Not detected; the associated numerical value is the reporting limit

Table 4-2c
Solid Waste Analytical Results for PCBs
Economy Plating
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
PCB (mg/kg)							
Aroclor 1016	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1221	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1232	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1242	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1248	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.93
Aroclor 1254	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1260	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1262	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Aroclor 1268	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.19 U
Total PCBs	0.099 U	0.098 U	0.099 U	0.16 U	0.099 U	0.099 U	0.93

Notes:

Bolded results indicate detections above the reporting limit.

ID = Identification

mg/kg = Milligram per kilogram

PCB = Polychlorinated biphenyl

U = Not detected; the associated numerical value is the reporting limit

Table 4-2d
Solid Waste Sample Analytical Results for TAL Metals
Economy Plating Site
Chicago, Cook County, Illinois

Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TAL Metal (mg/kg)							
Aluminum, Total	290	9.7 U	10,000	570	4,400	3,300	7,200
Antimony, Total	84	0.97 U	0.97 U	6.4	35	72	0.97 U
Arsenic, Total	3.1	0.49 U	8.7	42	27	76	27
Barium, Total	4.4	0.097 U	48	15	91	150	170
Beryllium, Total	0.048 U	0.049 U	0.19	0.047 U	0.048 U	0.049 U	0.049 U
Cadmium, Total	0.096 U	0.097 U	0.48	0.87	13	14	1.7
Calcium, Total	1,000	24 U	60,000	1,600	54,000	68,000	14,000
Chromium, Total	570	9.7	9,600	45,000	26,000	63,000	27,000
Cobalt, Total	0.14 U	0.15 U	6.8	2.7	4.8	5.8	10
Copper, Total	18	0.61	120	1,300	1,800	1,800	450
Iron, Total	390	59	8,500	7,000	14,000	14,000	14,000
Lead, Total	34	0.36 U	140	270	510	1,000	160
Magnesium, Total	270	24 U	32,000	550	19,000	16,000	6,000
Manganese, Total	7.7	0.35 U	200	61	250	220	73
Nickel, Total	0.48 U	0.49 U	12	18	30	0.49 U	56
Potassium, Total	190	140	10,000	530	1,500	6,100	1,400
Selenium, Total	1.4 U	1.5 U	1.5 U	1.4 U	1.4 U	1.5 U	1.5 U
Silver, Total	0.48 U	0.49 U	0.49 U	0.78	0.65	1.1	0.61
Sodium, Total	190,000	430,000	29,000	200,000	490	510	2,800
Thallium, Total	2.4 U	2.4 U	2.4 U	19	8.3	33	9
Vanadium, Total	4.9	0.39 U	22	0.37 U	16	13	12
Zinc, Total	16	0.97 U	65	100	230	85	220
Mercury, Total	0.039 U	0.04 U	0.039 U	0.039 U	0.11	0.04	0.14

Notes:

Bolded results indicate detections above the reporting limit.

ID = Identification

mg/kg = Milligram per kilogram

TAL = Target Analyte List

U = Not detected; the associated numerical value is the reporting limit

Table 4-2e
Solid Waste Sample Analytical Results for TCLP Metals
Economy Plating Site
Chicago, Cook County, Illinois

Screening Criterion ¹	Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
	Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
	Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
	Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
TCLP Metal (mg/L)								
5	Arsenic, TCLP	0.099	0.091	0.28	1.2	6	0.32	0.83
100	Barium, TCLP	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1	Cadmium, TCLP	0.0077	0.002 U	0.013	0.002 U	0.25	0.14	0.14
5	Chromium, TCLP	13	0.094 U	380	1,300	2,500	460	950
5	Lead, TCLP	4.2	0.0075 U	0.0075 U	0.056	0.0075 U	0.0075 U	0.0075 U
1	Selenium, TCLP	0.03 U	0.069 J	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
5	Silver, TCLP	0.01 U	0.01 U	0.01 J	0.021 J	0.029 J	0.01 U	0.01 U
0.2	Mercury, TCLP	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Notes:

¹Title 40 of the Code of Federal Regulations (CFR), Part 261 - Identification and Listing of Hazardous Waste

Bolded results indicate detections above the reporting limit.

Shaded results exceed screening criteria (see Note 1)

ID = Identification

J = Estimated result

mg/L = Milligram per liter

TCLP = Toxicity Characteristic Leaching Procedure

U = Not detected; the associated numerical value is the reporting limit

Table 4-2f
Solid Waste Sample Analytical Results for General Chemistry Parameters
Economy Plating Site
Chicago, Cook County, Illinois

Screening Criterion ¹	Field Sample ID	EP-WS01-60509	EP-WS02-60509	EP-WS03-60509	EP-WS04-060509	EP-WS05-060509	EP-WS05-060509D	EP-WS06-060509
	Matrix	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste	Solid Waste
	Sampling Date	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009	6/5/2009
	Location ID	EP-WS-01	EP-WS-02	EP-WS-03	EP-WS04	EP-WS05	EP-WS05	EP-WS06
General Chemistry Parameter								
2 SU	pH (SU)	8.4	12.2	9.2	9.6	7.8	7.6	6.1
< 140 °F	Ignitability (°F)	> 170	> 170	> 170	> 170	> 170	> 170	> 170
NA	Cyanide, Total (mg/kg)	1.5 J	350,000 J	88 J	4.9 J	1.4 J	1.3 J	2.8 J

Notes:

Bolded results indicate detections above the reporting limit.

¹Title 40 of the Code of Federal Regulations (CFR), Part 261 - Identification and Listing of Hazardous Waste

< =Less than
> = Greater than
°F = Degree Fahrenheit
ID = Identification
J = Estimated result
mg/L = Milligram per kilogram
NA = Not applicable
SU = Standard unit

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION



Site: Economy Plating Site

Photograph No.: 1

Direction: Northwest

Subject: Side entrance to Site building; note stained bricks below windows

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 2

Direction: Northeast

Subject: Drums in plating room marked "Chromic Acid"

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 3

Direction: Overhead

Subject: Partially filled vat of unknown liquid in plating room

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 4

Direction: South

Subject: START conducting waste inventory in building basement

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 5

Direction: South

Subject: Unknown liquid on basement dirt floor inside building

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 6

Direction: South

Subject: Waste drums inside building basement labeled "Chromic Acid"

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 7

Direction: South

Subject: Waste drums leaking on basement dirt floor inside building

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 8

Direction: Southwest

Subject: Stained walls in southwest corner of basement

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 9

Direction: North

Subject: Liquid waste drums inside trailer behind building

Date: June 5, 2009

Photographer: Jeff Bryniarski



Site: Economy Plating Site

Photograph No.: 10

Direction: Overhead

Subject: START sampling unknown green waste in plating room

Date: June 5, 2009

Photographer: Rick Mehl



Site: Economy Plating Site

Photograph No.: 11

Direction: Overhead

Subject: U.S. EPA OSC sampling unknown yellow solid in southwest corner of basement

Date: June 5, 2009

Photographer: Lauren Cook



Site: Economy Plating Site

Photograph No.: 12

Direction: Overhead

Subject: U.S. EPA OSC sampling unknown solid near leaking drum in building basement

Date: June 5, 2009

Photographer: Lauren Cook



Site: Economy Plating Site

Photograph No.: 13

Direction: Overhead

Subject: Bag of unknown material labeled "Poison" in second floor storage area

Date: June 5, 2009

Photographer: Rick Mehl



Site: Economy Plating Site

Photograph No.: 14

Direction: Overhead

Subject: Holes in building exterior wall near side door pathway allowing water to enter basement

Date: May 12, 2009

Photographer: Ramon Mendoza

APPENDIX B
LABORATORY ANALYTICAL REPORT
AND DATA VALIDATION REPORT

**ECONOMY PLATING SITE
CHICAGO, ILLINOIS
DATA VALIDATION REPORT**

Date: June 17, 2009

Laboratory: Microbac Laboratories, Inc. (Microbac), Merrillville, Indiana

Laboratory Project #: ME0906326

Data Validation Performed By: Lisa Graczyk, Weston Solutions, Inc. (WESTON) Superfund Technical Assessment and Response Team (START)

Weston Analytical Work Order #/TDD #: 20405.016.001.0661.00/S05-0001-0906-006

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for four waste liquid and seven waste solid samples collected for the Economy Plating Site that were analyzed for the following parameters and U.S. Environmental Protection Agency (U.S. EPA) methods:

- Volatile Organic Compounds (VOC) by SW-846 Method 8260B
- Semivolatile Organic Compounds (SVOC) by SW-846 Method 8270C
- Polychlorinated Biphenyls (PCB) by SW-846 Method 8082
- Metals by SW-846 Methods 6010B, 7470A, and 7471A
- Toxicity Characteristic Leaching Procedure (TCLP) Metals by SW-846 Methods 1311, 6010B, and 7470A
- Hexavalent Chromium by SW-846 Method 7196A
- Cyanide by SW-846 Method 9012B
- Ignitability by SW-846 Method 1010
- Corrosivity by SW-846 Method 9040C

A level II data package was requested from Microbac. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008 and "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" dated October 2004. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

VOCs BY SW-846 METHOD 8260B

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
EP-WL01-060509	ME0906326-01A	Liquid	6/5/2009	6/12/2009
EP-WL01-060509D	ME0906326-02A	Liquid	6/5/2009	6/12/2009
EP-WS01-060509	ME0906326-03A	Solid	6/5/2009	6/12/2009
EP-WS02-060509	ME0906326-04A	Solid	6/5/2009	6/12/2009
EP-WS03-060509	ME0906326-05A	Solid	6/5/2009	6/11/2009
EP-WL02-060509	ME0906326-06A	Liquid	6/5/2009	6/12/2009
EP-WL03-060509	ME0906326-07A	Liquid	6/5/2009	6/12/2009
EP-WS04-060509	ME0906326-08A	Solid	6/5/2009	6/11/2009
EP-WS05-060509	ME0906326-09A	Solid	6/5/2009	6/12/2009
EP-WS05-060509D	ME0906326-10A	Solid	6/5/2009	6/12/2009
EP-WS06-060509	ME0906326-11A	Solid	6/5/2009	6/12/2009

2. Holding Times

The samples were analyzed within the required holding time limit of 14 days from sample collection.

3. Blanks

Method blanks were analyzed with the waste liquid and solid VOC analyses. The method blanks were free of target compound contamination above the reporting limit. There were some detections below the reporting limit in one method blank. Because these compounds were not detected in the samples, no qualifications are required.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits except for one of the four surrogates in sample EP-WS02-060509 which was detected slightly below the QC limit. No qualification is required for one surrogate being outside the QC limit.

5. Laboratory Control Sample (LCS) Results

The LCS recoveries were within laboratory QC limits except for as follows.

In the LCS associated with the solid sample analyses, the following target compounds were detected high: carbon disulfide, chlorobenzene, vinyl acetate, and o-xylene. In the LCS associated with the liquid sample analyses, carbon disulfide was detected high. Because these compounds were not detected in the samples, no qualifications are required.

6. Field Duplicate Results

Waste sample EP-WL01-060509D is a field duplicate of sample EP-WL01-060509 and sample EP-WS05-060509D is a field duplicate of sample EP-WS05-060509. The results for the parent sample and field duplicate samples were all non-detect for VOCs indicating a good correlation between the parent and its field duplicate sample.

7. Overall Assessment

The VOC data are acceptable for use based on the information received.

SVOCs BY SW-846 METHOD 8270C

1. Samples

The following table summarizes the samples for which this data validation is being conducted.

Samples	Lab ID	Matrix	Date Collected	Date Prepared	Date Analyzed
EP-WL01-060509	ME0906326-01A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WL01-060509D	ME0906326-02A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WS01-060509	ME0906326-03A	Solid	6/5/2009	6/9/2009	6/10/2009
EP-WS02-060509	ME0906326-04A	Solid	6/5/2009	6/9/2009	6/10/2009
EP-WS03-060509	ME0906326-05A	Solid	6/5/2009	6/9/2009	6/10/2009
EP-WL02-060509	ME0906326-06A	Liquid	6/5/2009	6/9/2009	6/10/2009
EP-WL03-060509	ME0906326-07A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WS04-060509	ME0906326-08A	Solid	6/5/2009	6/9/2009	6/10/2009
EP-WS05-060509	ME0906326-09A	Solid	6/5/2009	6/9/2009	6/10/2009
EP-WS05-060509D	ME0906326-10A	Solid	6/5/2009	6/9/2009	6/10/2009
EP-WS06-060509	ME0906326-11A	Solid	6/5/2009	6/9/2009	6/10/2009

2. Holding Times

The samples were analyzed within the required holding time limit of 14 days from sample collection to extraction and 40 days from extraction to analysis.

3. Blanks

Method blanks were analyzed with the waste liquid and solid SVOC analyses. The method blanks were free of target compound contamination above the reporting limit. There were some detections below the reporting limit in one method blank. Because these compounds were not detected in the samples, no qualifications are required.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established QC limits except for one of the six surrogates in sample EP-WS02-060509 and EP-WS05D-060509D which were detected slightly below the QC limit. No qualification is required for one surrogate being outside the QC limit.

5. LCS Results

The percent recoveries for the LCS results were within the laboratory-established QC limits.

6. Field Duplicate Results

Waste sample EP-WL01-060509D is a field duplicate of sample EP-WL01-060509 and sample EP-WS05-060509D is a field duplicate of sample EP-WS05-060509. The results for the parent sample and field duplicate samples were all non-detect for SVOCs except for bis(2-ethylhexyl)phthalate which was detected at 1.8 milligrams per kilogram (mg/kg) in sample EP-WS05-060509. In the field duplicate for this sample, bis(2-ethylhexyl)phthalate was not detected at a reporting limit of 0.99 mg/kg. The relative percent difference between the reporting limit and the detection for bis(2-ethylhexyl)phthalate is 58 percent. The RPD between the sample and field duplicate result was compared to a standard QC limit of 50 RPD. The calculated RPD indicates that this sample is somewhat heterogeneous.

8. Overall Assessment

The SVOC data are acceptable for use based on the information received.

PCBs BY U.S. EPA SW-846 METHOD 8082

1. Samples

The following table summarizes the samples for which this data validation was conducted.

Samples	Lab ID	Matrix	Date Collected	Date Prepared	Date Analyzed
EP-WL01-060509	ME0906326-01A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WL01-060509D	ME0906326-02A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WS01-060509	ME0906326-03A	Solid	6/5/2009	6/9/2009	6/9/2009
EP-WS02-060509	ME0906326-04A	Solid	6/5/2009	6/9/2009	6/9/2009
EP-WS03-060509	ME0906326-05A	Solid	6/5/2009	6/9/2009	6/9/2009
EP-WL02-060509	ME0906326-06A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WL03-060509	ME0906326-07A	Liquid	6/5/2009	6/10/2009	6/10/2009
EP-WS04-060509	ME0906326-08A	Solid	6/5/2009	6/9/2009	6/9/2009
EP-WS05-060509	ME0906326-09A	Solid	6/5/2009	6/9/2009	6/9/2009
EP-WS05-060509D	ME0906326-10A	Solid	6/5/2009	6/9/2009	6/9/2009
EP-WS06-060509	ME0906326-11A	Solid	6/5/2009	6/9/2009	6/10/2009

2. Holding Times

The sample was analyzed within the required holding time limit of 14 days from sample collection to extraction and 40 days from extraction to analysis.

3. Blanks

Method blanks were analyzed with the waste liquid and solid PCB analyses. The method blanks were free of target compound contamination.

4. Surrogates

The surrogate recoveries were within the laboratory-established QC limits for percent recovery.

5. LCS Results

The LCS results were within the laboratory-established QC limits.

6. Field Duplicate Results

Waste sample EP-WL01-060509D is a field duplicate of sample EP-WL01-060509 and sample EP-WS05-060509D is a field duplicate of sample EP-WS05-060509. The results for the parent sample and field duplicate samples were all non-detect for PCBs indicating a good correlation between the parent and its field duplicate sample.

7. Overall Assessment

The data are acceptable for use based on the information received.

TOTAL METALS BY SW-846 METHODS 6010B, 7470A, AND 7471A AND TCLP METALS BY METHODS 1311, 6010B, AND 7470A

1. Samples

The following table summarizes the samples for which this data validation is being conducted. All seven solid samples were analyzed for TCLP and total metals. The liquid samples were analyzed for total metals only.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
EP-WL01-060509	ME0906326-01A	Liquid	6/5/2009	6/11/2009 – 6/12/2009
EP-WL01-060509D	ME0906326-02A	Liquid	6/5/2009	6/11/2009 – 6/12/2009
EP-WS01-060509	ME0906326-03A	Solid	6/5/2009	6/9/2009 – 6/12/2009
EP-WS02-060509	ME0906326-04A	Solid	6/5/2009	6/9/2009 – 6/12/2009
EP-WS03-060509	ME0906326-05A	Solid	6/5/2009	6/9/2009 – 6/12/2009
EP-WL02-060509	ME0906326-06A	Liquid	6/5/2009	6/11/2009 – 6/12/2009
EP-WL03-060509	ME0906326-07A	Liquid	6/5/2009	6/12/2009
EP-WS04-060509	ME0906326-08A	Solid	6/5/2009	6/9/2009 – 6/12/2009
EP-WS05-060509	ME0906326-09A	Solid	6/5/2009	6/9/2009 – 6/12/2009
EP-WS05-060509D	ME0906326-10A	Solid	6/5/2009	6/9/2009 – 6/12/2009
EP-WS06-060509	ME0906326-11A	Solid	6/5/2009	6/9/2009 – 6/12/2009

2. Holding Times

The samples were analyzed within the required holding time limit of 28 days from sample collection to analysis for mercury and 180 days from sample collection to analysis for all other metals.

3. **Blank Results**

A method blank was analyzed with the waste liquid and solid metals analyses and the TCLP metals analysis. Blanks were analyzed with the samples and were generally free of target analyte contamination above the reporting limits. There were some metal detections below the reporting limits in the method blanks. In most of these instances, qualification was not required because the sample result was much higher than the blank result or was not detected in the samples. The exceptions are noted below.

In the solid total metals method blank, manganese was detected above the reporting limit at 0.125 mg/kg. Because manganese was detected at less than 10 times the blank result in sample EP-WS02-060509, the manganese result was flagged “U” as not detected.

In the TCLP metals method blank, the following compounds were detected below the reporting limit: selenium at 0.015 milligram per liter (mg/L) and silver at 0.0059 mg/L. Detections for TCLP selenium and TCLP silver at less than 10 times the blank result were flagged “J” as estimated because of the method blank contamination.

In the TCLP metals method blank, chromium was detected above the reporting limit at 0.024 mg/L. The TCLP chromium result in sample WS02-060509 was flagged “U” as not detected because it was less than 10 times the blank result.

4. **LCS Results**

The LCS recoveries were within the laboratory-established QC limits for target analytes.

5. **Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results**

In several instances, Microbac analyzed a sample from another project. In these instances, the sample results could not be used to determine matrix interferences at the Economy Plating Site. No qualifications were applied for MS and MSDs not being analyzed.

For the TCLP mercury and silver analyses, Microbac used sample EP-WS01-060509 as the spiked sample. The percent recoveries and the RPD between the MS and MSD were within QC limits.

For the TCLP arsenic, barium, cadmium, chromium, lead, and selenium analyses, Microbac used sample EP-WS03-060509 as the spiked sample. The percent recoveries were within QC limits except for TCLP chromium which was detected above the QC limit. Because the spike value was less than four times the sample result for the TCLP chromium MS/MSD analyses, no qualifications are required. The RPDs between the MS and MSD samples were within QC limits for all analytes.

6. Field Duplicate Results

Waste sample EP-WL01-060509D is a field duplicate of sample EP-WL01-060509 and sample EP-WS05-060509D is a field duplicate of sample EP-WS05-060509. The RPDs between the sample and field duplicate result were compared to a standard QC limit of 50 RPD. For the waste liquid field duplicate, the calculated RPDs were all below 50 percent. For the solid field duplicate sample, several of the calculated RPDs were greater than 50 for both the total and TCLP metals analyses. This indicates that the solid sample matrix is somewhat heterogeneous.

7. Overall Assessment

The metals data are acceptable for use as qualified based on the information received.

GENERAL CHEMISTRY PARAMETERS (hexavalent chromium by SW-846 7196A, total cyanide by SW-846 9012B, ignitability by SW-846 1010, corrosivity by SW-846 9040C)

1. Samples

The following table summarizes the samples for which this data validation is being conducted. All four liquid samples were analyzed for hexavalent chromium, total cyanide, ignitability, and corrosivity. The solid samples were analyzed for total cyanide, ignitability, and corrosivity only.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
EP-WL01-060509	ME0906326-01A	Liquid	6/5/2009	6/9/2009 – 6/11/2009
EP-WL01-060509D	ME0906326-02A	Liquid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS01-060509	ME0906326-03A	Solid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS02-060509	ME0906326-04A	Solid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS03-060509	ME0906326-05A	Solid	6/5/2009	6/9/2009 – 6/11/2009
EP-WL02-060509	ME0906326-06A	Liquid	6/5/2009	6/9/2009 – 6/11/2009
EP-WL03-060509	ME0906326-07A	Liquid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS04-060509	ME0906326-08A	Solid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS05-060509	ME0906326-09A	Solid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS05-060509D	ME0906326-10A	Solid	6/5/2009	6/9/2009 – 6/11/2009
EP-WS06-060509	ME0906326-11A	Solid	6/5/2009	6/9/2009 – 6/11/2009

2. **Holding Times**

All holding time limits for cyanide, ignitability, and pH were acceptable. The holding time limit limits for these analyses are as follows:

- 14 days for cyanide
- As soon as possible for ignitability and corrosivity

For aqueous samples the holding time limit for hexavalent chromium is 24 hours to analysis. There is no holding time limit stated for waste liquid samples in the method (solid samples have a holding time limit of one month to extraction and 4 days to analysis from extraction). The waste liquid samples were analyzed for hexavalent chromium within 4 days of analysis. Because these samples were of a waste matrix, no qualification was applied.

3. **Blank Results**

A method blank was analyzed with the cyanide analysis. A calibration blank was analyzed with the hexavalent chromium analysis. The blanks were free of target analyte contamination above the reporting limits.

4. **LCS Results**

An LCS was analyzed with the cyanide and ignitability analyses and a calibration verification sample was analyzed with the hexavalent chromium analysis. Both samples were within the laboratory-established QC limits.

5. **MS and MSD Results**

For the cyanide analysis, Microbac used sample EP-WS01-060509 as the spiked sample. The percent recoveries were below the lower QC limit. Detected results for cyanide in the solid samples were flagged "J" as estimated for this discrepancy. The RPD between the MS and MSD sample were within QC limit.

MS and MSDs were not analyzed with the other matrices for cyanide or with the other analyses. No qualifications are applied for this omission.

6. **Field Duplicate Results**

Waste sample EP-WL01-060509D is a field duplicate of sample EP-WL01-060509 and sample EP-WS05-060509D is a field duplicate of sample EP-WS05-060509. The RPDs between the sample and field duplicate result were compared to a standard QC limit of 50 RPD. The RPDs were less than 50 percent.

Data Validation Report
Economy Plating Site
Microbac Laboratories, Inc.
Laboratory Project #: ME0906326

7. Laboratory Duplicate Results

Laboratory duplicates were analyzed with the ignitability and corrosivity analyses. The duplicate RPDs were within QC limits.

8. Overall Assessment

The cyanide, hexavalent chromium, ignitability, and corrosivity data are acceptable for use as qualified based on the information received.

Data Validation Report
Economy Plating Site
Microbac Laboratories, Inc.
Laboratory Project #: ME0906326

ATTACHMENT

**MICROBAC LABORATORIES, INC.
RESULTS SUMMARY WITH QUALIFIERS**



June 15, 2009

Lisa Graczyk
Weston Solutions
20 N. Wacker
Chicago, IL 60602

Work Order No.: ME0906326

RE: Economy Plating / Chicago, IL
Dear Lisa Graczyk:

Microbac Laboratories, Inc. received 11 samples on 6/5/2009 6:35:00 PM for the analyses presented in the following report.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

A handwritten signature in black ink, appearing to read "R. Misiunas", written over the printed name of the sender.

Ronald J. Misiunas
Client Services Manager

Enclosures



WORK ORDER SAMPLE SUMMARY

Date: *Monday, June 15, 2009*

CLIENT: Weston Solutions
Project: Economy Plating / Chicago, IL
Lab Order: ME0906326

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
ME0906326-01A	EP-WL01-060509		6/5/2009 2:00:00 PM	6/5/2009
ME0906326-02A	EP-WL01-060509D		6/5/2009 2:00:00 PM	6/5/2009
ME0906326-03A	EP-WS-01-60509		6/5/2009 2:10:00 PM	6/5/2009
ME0906326-04A	EP-WS-02-60509		6/4/2009 2:20:00 PM	6/5/2009
ME0906326-05A	EP-WS-03-60509		6/4/2009 2:25:00 PM	6/5/2009
ME0906326-06A	EP-WL02-060509		6/5/2009 2:28:00 PM	6/5/2009
ME0906326-07A	EP-WL03-060509		6/4/2009 2:30:00 PM	6/5/2009
ME0906326-08A	EP-WS04-060509		6/5/2009 2:45:00 PM	6/5/2009
ME0906326-09A	EP-WS05-060509		6/5/2009 3:05:00 PM	6/5/2009
ME0906326-10A	EP-WS05D-060509D		6/5/2009 3:05:00 PM	6/5/2009
ME0906326-11A	EP-WS06-060509		6/5/2009 3:15:00 PM	6/5/2009



CASE NARRATIVE

Date: *Monday, June 15, 2009*

Client: Weston Solutions
Project: Economy Plating / Chicago, IL
Lab Order: ME0906326

One of the SVOA internal standards associated with the EP-WS06-060509 sample yielded extremely low recovery. This data is indicative of adverse effects from the sample matrix. Extraction and analysis efficiency for this sample may be assessed using the surrogate recoveries.

B - the method blank associated with these samples contained Chromium at a level above the reporting limit. This is considered insignificant, as the concentration in the samples was more than ten-times that measured in the blank.

B - the method blank associated with these samples contained Mercury at a level above the reporting limit. This is considered insignificant, as the bias was high yet the sample concentrations remained below the reporting limit.

S - The VOA Laboratory Control Sample failures in RunID VOA-5_090611A are considered insignificant, as the bias was high yet the sample concentrations were non-detectable.

S - VOA surrogate failure in the EP-WS-02-60509 sample confirmed through reanalysis with similar results. Data indicative of matrix interference.

ANALYTICAL RESULTS

Date: *Monday, June 15, 2009*

Client: Weston Solutions
Client Project: Economy Plating / Chicago, IL
Client Sample ID: EP-WL01-060509
Sample Description:
Sample Matrix: Liquid

Work Order / ID: ME0906326-01A
Collection Date: 06/05/09 14:00
Date Received: 06/05/09 18:35

Analyses	ST	Result	RL	Qual	Units	DF	Analyzed
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SEMIVOLATILE ORGANICS

Method: **SW8270C**

Prep Date/Time: **06/10/09 14:00** Analyst: **BEM**

4-Bromophenyl phenyl ether	A	ND	0.10		mg/L	1	06/10/09 21:12
Bis(2-ethylhexyl)phthalate	A	ND	0.10		mg/L	1	06/10/09 21:12
Acenaphthene	A	ND	0.10		mg/L	1	06/10/09 21:12
Acenaphthylene	A	ND	0.10		mg/L	1	06/10/09 21:12
Acetophenone	A	ND	0.10		mg/L	1	06/10/09 21:12
Aniline	A	ND	0.10		mg/L	1	06/10/09 21:12
Anthracene	A	ND	0.10		mg/L	1	06/10/09 21:12
Benzidine	A	ND	0.50		mg/L	1	06/10/09 21:12
Benzo[a]anthracene	A	ND	0.10		mg/L	1	06/10/09 21:12
Benzo[a]pyrene	A	ND	0.10		mg/L	1	06/10/09 21:12
Benzo[b]fluoranthene	A	ND	0.10		mg/L	1	06/10/09 21:12
Benzo[g,h,i]perylene	A	ND	0.10		mg/L	1	06/10/09 21:12
Benzo[k]fluoranthene	A	ND	0.10		mg/L	1	06/10/09 21:12
Benzoic acid	A	ND	0.50		mg/L	1	06/10/09 21:12
Benzyl alcohol	A	ND	0.20		mg/L	1	06/10/09 21:12
Bis(2-chloroethoxy)methane	A	ND	0.10		mg/L	1	06/10/09 21:12
Bis(2-chloroethyl)ether	A	ND	0.10		mg/L	1	06/10/09 21:12
2,2'-oxybis(1-chloropropane)	A	ND	0.10		mg/L	1	06/10/09 21:12
Butyl benzyl phthalate	A	ND	0.10		mg/L	1	06/10/09 21:12
Carbazole	A	ND	0.10		mg/L	1	06/10/09 21:12
4-Chloro-3-methylphenol	A	ND	0.20		mg/L	1	06/10/09 21:12
4-Chloroaniline	A	ND	0.10		mg/L	1	06/10/09 21:12
2-Chloronaphthalene	A	ND	0.10		mg/L	1	06/10/09 21:12
2-Chlorophenol	A	ND	0.10		mg/L	1	06/10/09 21:12
4-Chlorophenyl phenyl ether	A	ND	0.10		mg/L	1	06/10/09 21:12
Chrysene	A	ND	0.10		mg/L	1	06/10/09 21:12
Dibenz[a,h]anthracene	A	ND	0.10		mg/L	1	06/10/09 21:12
Dibenzofuran	A	ND	0.10		mg/L	1	06/10/09 21:12
1,2-Dichlorobenzene	A	ND	0.10		mg/L	1	06/10/09 21:12
1,3-Dichlorobenzene	A	ND	0.10		mg/L	1	06/10/09 21:12
1,4-Dichlorobenzene	A	ND	0.10		mg/L	1	06/10/09 21:12
3,3'-Dichlorobenzidine	A	ND	0.50		mg/L	1	06/10/09 21:12
2,4-Dichlorophenol	A	ND	0.10		mg/L	1	06/10/09 21:12
2,6-Dichlorophenol	A	ND	0.10		mg/L	1	06/10/09 21:12
Diethyl phthalate	A	ND	0.10		mg/L	1	06/10/09 21:12
Dimethyl phthalate	A	ND	0.10		mg/L	1	06/10/09 21:12
2,4-Dimethylphenol	A	ND	0.10		mg/L	1	06/10/09 21:12
Di-n-butyl phthalate	A	ND	0.10		mg/L	1	06/10/09 21:12
Di-n-octyl phthalate	A	ND	0.10		mg/L	1	06/10/09 21:12
4,6-Dinitro-2-methylphenol	A	ND	0.50		mg/L	1	06/10/09 21:12
2,4-Dinitrophenol	A	ND	0.50		mg/L	1	06/10/09 21:12

ANALYTICAL RESULTS

Date: *Monday, June 15, 2009*

Client: Weston Solutions
Client Project: Economy Plating / Chicago, IL
Client Sample ID: EP-WL01-060509
Sample Description:
Sample Matrix: Liquid

Work Order / ID: ME0906326-01A
Collection Date: 06/05/09 14:00
Date Received: 06/05/09 18:35

Analyses	ST	Result	RL	Qual	Units	DF	Analyzed
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VOLATILE ORGANICS		Method: SW8260B	Prep Date/Time:		Analyst: CLR		
Acetone	A	ND	0.050		mg/L	1	06/12/09 10:33
Acrolein	A	ND	0.10		mg/L	1	06/12/09 10:33
Acrylonitrile	A	ND	0.10		mg/L	1	06/12/09 10:33
Benzene	A	ND	0.0050		mg/L	1	06/12/09 10:33
Bromodichloromethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
Bromoform	A	ND	0.0050		mg/L	1	06/12/09 10:33
Bromomethane	A	ND	0.010		mg/L	1	06/12/09 10:33
2-Butanone	A	ND	0.010		mg/L	1	06/12/09 10:33
Carbon Disulfide	A	ND	0.010		mg/L	1	06/12/09 10:33
Carbon tetrachloride	A	ND	0.0050		mg/L	1	06/12/09 10:33
Chlorobenzene	A	ND	0.0050		mg/L	1	06/12/09 10:33
Chloroethane	A	ND	0.010		mg/L	1	06/12/09 10:33
Chloroform	A	ND	0.0050		mg/L	1	06/12/09 10:33
Chloromethane	A	ND	0.010		mg/L	1	06/12/09 10:33
Dibromochloromethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,1-Dichloroethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,2-Dichloroethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,1-Dichloroethene	A	ND	0.0050		mg/L	1	06/12/09 10:33
cis-1,2-Dichloroethene	A	ND	0.0050		mg/L	1	06/12/09 10:33
trans-1,2-Dichloroethene	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,2-Dichloropropane	A	ND	0.0050		mg/L	1	06/12/09 10:33
cis-1,3-Dichloropropene	A	ND	0.0050		mg/L	1	06/12/09 10:33
trans-1,3-Dichloropropene	A	ND	0.0050		mg/L	1	06/12/09 10:33
Ethylbenzene	A	ND	0.0050		mg/L	1	06/12/09 10:33
2-Hexanone	A	ND	0.010		mg/L	1	06/12/09 10:33
4-Methyl-2-Pentanone	A	ND	0.010		mg/L	1	06/12/09 10:33
Methyl-t-Butyl Ether	A	ND	0.0050		mg/L	1	06/12/09 10:33
Methylene chloride	A	ND	0.0050		mg/L	1	06/12/09 10:33
Styrene	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,1,1,2-Tetrachloroethane	A	ND	0.010		mg/L	1	06/12/09 10:33
1,1,2,2-Tetrachloroethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
Tetrachloroethene	A	ND	0.0050		mg/L	1	06/12/09 10:33
Toluene	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,1,1-Trichloroethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
1,1,2-Trichloroethane	A	ND	0.0050		mg/L	1	06/12/09 10:33
Trichloroethene	A	ND	0.0050		mg/L	1	06/12/09 10:33
Vinyl Acetate	A	ND	0.010		mg/L	1	06/12/09 10:33
Vinyl chloride	A	ND	0.0020		mg/L	1	06/12/09 10:33
m,p-Xylene	A	ND	0.0050		mg/L	1	06/12/09 10:33
o-Xylene	A	ND	0.0050		mg/L	1	06/12/09 10:33
Trichlorofluoromethane	A	ND	0.010		mg/L	1	06/12/09 10:33

ANALYTICAL RESULTS

Date: *Monday, June 15, 2009*

Client: Weston Solutions
Client Project: Economy Plating / Chicago, IL
Client Sample ID: EP-WL01-060509D
Sample Description:
Sample Matrix: Liquid

Work Order / ID: ME0906326-02A
Collection Date: 06/05/09 14:00
Date Received: 06/05/09 18:35

Analyses	ST	Result	RL	Qual	Units	DF	Analyzed
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SEMIVOLATILE ORGANICS

Method: **SW8270C**

Prep Date/Time: **06/10/09 14:00** Analyst: **BEM**

2,4-Dinitrotoluene	A	ND	0.10		mg/L	1	06/10/09 21:34
2,6-Dinitrotoluene	A	ND	0.10		mg/L	1	06/10/09 21:34
1,2-Diphenyl-hydrazine	A	ND	0.10		mg/L	1	06/10/09 21:34
Fluoranthene	A	ND	0.10		mg/L	1	06/10/09 21:34
Fluorene	A	ND	0.10		mg/L	1	06/10/09 21:34
Hexachlorobenzene	A	ND	0.10		mg/L	1	06/10/09 21:34
Hexachlorobutadiene	A	ND	0.10		mg/L	1	06/10/09 21:34
Hexachlorocyclopentadiene	A	ND	0.10		mg/L	1	06/10/09 21:34
Hexachloroethane	A	ND	0.10		mg/L	1	06/10/09 21:34
Indeno[1,2,3cd]pyrene	A	ND	0.10		mg/L	1	06/10/09 21:34
Isophorone	A	ND	0.10		mg/L	1	06/10/09 21:34
2-Methylnaphthalene	A	ND	0.10		mg/L	1	06/10/09 21:34
2-Methylphenol	A	ND	0.10		mg/L	1	06/10/09 21:34
3/4-Methylphenol	A	ND	0.10		mg/L	1	06/10/09 21:34
2-Nitroaniline	A	ND	0.50		mg/L	1	06/10/09 21:34
3-Nitroaniline	A	ND	0.50		mg/L	1	06/10/09 21:34
4-Nitroaniline	A	ND	0.50		mg/L	1	06/10/09 21:34
2-Nitrophenol	A	ND	0.10		mg/L	1	06/10/09 21:34
4-Nitrophenol	A	ND	0.50		mg/L	1	06/10/09 21:34
N-Nitrosodi-n-propylamine	A	ND	0.10		mg/L	1	06/10/09 21:34
N-Nitrosodimethylamine	A	ND	0.10		mg/L	1	06/10/09 21:34
N-Nitrosodiphenylamine	A	ND	0.10		mg/L	1	06/10/09 21:34
Naphthalene	A	ND	0.10		mg/L	1	06/10/09 21:34
Nitrobenzene	A	ND	0.10		mg/L	1	06/10/09 21:34
Pentachlorophenol	A	ND	0.50		mg/L	1	06/10/09 21:34
Phenanthrene	A	ND	0.10		mg/L	1	06/10/09 21:34
Phenol	A	ND	0.10		mg/L	1	06/10/09 21:34
Pyrene	A	ND	0.10		mg/L	1	06/10/09 21:34
Pyridine	A	ND	0.10		mg/L	1	06/10/09 21:34
1,2,4-Trichlorobenzene	A	ND	0.10		mg/L	1	06/10/09 21:34
2,4,5-Trichlorophenol	A	ND	0.10		mg/L	1	06/10/09 21:34
2,4,6-Trichlorophenol	A	ND	0.10		mg/L	1	06/10/09 21:34
Total Cresol	A	ND	0.10		mg/L	1	06/10/09 21:34
Surr: Nitrobenzene-d5	S	77.6	10-121		%REC	1	06/10/09 21:34
Surr: 2-Fluorobiphenyl	S	71.5	10-109		%REC	1	06/10/09 21:34
Surr: Terphenyl-d14	S	52.0	10-130		%REC	1	06/10/09 21:34
Surr: Phenol-d5	S	35.1	10-100		%REC	1	06/10/09 21:34
Surr: 2-Fluorophenol	S	42.9	10-84.7		%REC	1	06/10/09 21:34
Surr: 2,4,6-Tribromophenol	S	49.0	10-120		%REC	1	06/10/09 21:34

ANALYTICAL RESULTS

Date: *Monday, June 15, 2009*

Client: Weston Solutions
Client Project: Economy Plating / Chicago, IL
Client Sample ID: EP-WS-01-60509
Sample Description:
Sample Matrix: Solid

Work Order / ID: ME0906326-03A
Collection Date: 06/05/09 14:10
Date Received: 06/05/09 18:35

Analyses	ST	Result	RL	Qual	Units	DF	Analyzed
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SEMIVOLATILE ORGANICS

Method: **SW8270C**

Prep Date/Time: **06/09/09 10:00** Analyst: **BEM**

1,3-Dichlorobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
1,4-Dichlorobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
3,3'-Dichlorobenzidine	A	ND	4.8		mg/Kg	1	06/10/09 00:02
2,4-Dichlorophenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
2,6-Dichlorophenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Diethyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Dimethyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:02
2,4-Dimethylphenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Di-n-butyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Di-n-octyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:02
4,6-Dinitro-2-methylphenol	A	ND	4.8		mg/Kg	1	06/10/09 00:02
2,4-Dinitrophenol	A	ND	4.8		mg/Kg	1	06/10/09 00:02
2,4-Dinitrotoluene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
2,6-Dinitrotoluene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
1,2-Diphenyl-hydrazine	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Fluoranthene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Fluorene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Hexachlorobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Hexachlorobutadiene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Hexachlorocyclopentadiene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Hexachloroethane	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Indeno[1,2,3cd]pyrene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Isophorone	A	ND	0.99		mg/Kg	1	06/10/09 00:02
2-Methylnaphthalene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
2-Methylphenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
3/4-Methylphenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
2-Nitroaniline	A	ND	4.8		mg/Kg	1	06/10/09 00:02
3-Nitroaniline	A	ND	4.8		mg/Kg	1	06/10/09 00:02
4-Nitroaniline	A	ND	4.8		mg/Kg	1	06/10/09 00:02
2-Nitrophenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
4-Nitrophenol	A	ND	4.8		mg/Kg	1	06/10/09 00:02
N-Nitrosodi-n-propylamine	A	ND	0.99		mg/Kg	1	06/10/09 00:02
N-Nitrosodimethylamine	A	ND	0.99		mg/Kg	1	06/10/09 00:02
N-Nitrosodiphenylamine	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Naphthalene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Nitrobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Pentachlorophenol	A	ND	4.8		mg/Kg	1	06/10/09 00:02
Phenanthrene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Phenol	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Pyrene	A	ND	0.99		mg/Kg	1	06/10/09 00:02
Pyridine	A	ND	0.99		mg/Kg	1	06/10/09 00:02

ANALYTICAL RESULTS

Date: *Monday, June 15, 2009*

Client: Weston Solutions
Client Project: Economy Plating / Chicago, IL
Client Sample ID: EP-WS-02-60509
Sample Description:
Sample Matrix: Solid

Work Order / ID: ME0906326-04A
Collection Date: 06/04/09 14:20
Date Received: 06/05/09 18:35

Analyses	ST	Result	RL	Qual	Units	DF	Analyzed
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SEMIVOLATILE ORGANICS

Method: **SW8270C**

Prep Date/Time: **06/09/09 10:00** Analyst: **BEM**

1,3-Dichlorobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
1,4-Dichlorobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
3,3'-Dichlorobenzidine	A	ND	4.8		mg/Kg	1	06/10/09 00:23
2,4-Dichlorophenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
2,6-Dichlorophenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Diethyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Dimethyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:23
2,4-Dimethylphenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Di-n-butyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Di-n-octyl phthalate	A	ND	0.99		mg/Kg	1	06/10/09 00:23
4,6-Dinitro-2-methylphenol	A	ND	4.8		mg/Kg	1	06/10/09 00:23
2,4-Dinitrophenol	A	ND	4.8		mg/Kg	1	06/10/09 00:23
2,4-Dinitrotoluene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
2,6-Dinitrotoluene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
1,2-Diphenyl-hydrazine	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Fluoranthene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Fluorene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Hexachlorobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Hexachlorobutadiene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Hexachlorocyclopentadiene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Hexachloroethane	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Indeno[1,2,3cd]pyrene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Isophorone	A	ND	0.99		mg/Kg	1	06/10/09 00:23
2-Methylnaphthalene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
2-Methylphenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
3/4-Methylphenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
2-Nitroaniline	A	ND	4.8		mg/Kg	1	06/10/09 00:23
3-Nitroaniline	A	ND	4.8		mg/Kg	1	06/10/09 00:23
4-Nitroaniline	A	ND	4.8		mg/Kg	1	06/10/09 00:23
2-Nitrophenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
4-Nitrophenol	A	ND	4.8		mg/Kg	1	06/10/09 00:23
N-Nitrosodi-n-propylamine	A	ND	0.99		mg/Kg	1	06/10/09 00:23
N-Nitrosodimethylamine	A	ND	0.99		mg/Kg	1	06/10/09 00:23
N-Nitrosodiphenylamine	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Naphthalene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Nitrobenzene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Pentachlorophenol	A	ND	4.8		mg/Kg	1	06/10/09 00:23
Phenanthrene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Phenol	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Pyrene	A	ND	0.99		mg/Kg	1	06/10/09 00:23
Pyridine	A	ND	0.99		mg/Kg	1	06/10/09 00:23



FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA = Not Analyzed	N/A = Not Applicable		
mg/L = Milligrams per Liter (ppm)	ug/L = Micrograms per Liter (ppb)	cfu = Colony Forming Unit	
mg/Kg = Milligrams per Kilogram (ppm)	ug/Kg = Micrograms per Kilogram (ppb)	ng/L = Nanograms per Liter (ppt)	
U = Undetected			
J = Analyte concentration detected between RL and MDL (Metals / Organics)			
j = Analyte concentration detected between 1/2 PQL and PQL (for TIC analytes only)			
B = Detected in the associated Method Blank at a concentration above the routine PQL/RL			
b = Detected in the associated Method Blank at a concentration above the Method Detection Limit but less than the routine PQL/RL			
D = Surrogate recoveries are not calculated due to sample dilution			
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if listed)			
E = Value above quantitation range			
H = Analyte was prepared and/or analyzed outside of the analytical method holding time			
I = Matrix Interference			
R = RPD outside accepted recovery limits			
S = Spike recovery outside recovery limits			
Surr = Surrogate			
DF = Dilution Factor	RL = Reporting Limit	ST = Sample Type	MDL = Method Detection Limit

SAMPLE TYPES

A = Analyte
I = Internal Standard
S = Surrogate
T = Tentatively Identified Compound (TIC, concentration estimated)

OC SAMPLE IDENTIFICATIONS

MBLK = Method Blank	ICSA = Interference Check Standard "A"	OPR = Ongoing Precision and Recovery Standard
DUP = Method Duplicate	ICSAB = Interference Check Standard "AB"	
LCS = Laboratory Control Sample	LCSD = Laboratory Control Sample Duplicate	
MS = Matrix Spike	MSD = Matrix Spike Duplicate	
ICB = Initial Calibration Blank	CCB = Continuing Calibration Blank	
ICV = Initial Calibration Verification	CCV = Continuing Calibration Verification	
PDS = Post Digestion Spike	SD = Serial Dilution	

CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

- Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #100435)
- Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)
- Indiana DEM approved support laboratory for solid waste and wastewater analyses
- Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)
- Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)
- Kentucky DEP for the chemical analysis of drinking water (lab #90147)
- Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)
- New York SDH for the chemical analysis of air and emissions (lab #11909)
- North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations (certificate #597)
- Tennessee DEC for the chemical analysis of drinking water (lab #04017)
- Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)

MICROBAC LOCATIONS, SERVICE CENTERS (SC) AND SATELLITE OFFICES (Sat)

Baltimore Division - Baltimore, MD	Kentucky Division - Louisville, KY	Ohio Valley Division - Marietta, OH
Camp Hill Division - Camp Hill, PA	Kentucky Division (Sat) - Evansville, IN	Pittsburgh Division - Warrendale, PA
Camp Hill Division (SC) - Pittston, PA	Kentucky Division (Sat) - Lexington, KY	Richmond Division - Richmond, VA
Chicagoland Division - Merrillville, IN	Kentucky Division (Sat) - Paducah, KY	South Carolina Division - New Ellenton, SC
Chicagoland Division (SC) - Indianapolis, IN	Knoxville Division - Maryville, TN	South Jersey Division - Laurel Springs, NJ
Southern California Division - Corona, CA	Massachusetts Division - Worcester, MA	Southern Headquarters - Poquoson, VA
Erie Division - Erie, PA	Microbac Corporate Office - Pittsburgh, PA	Southern Testing Division - Wilson, NC
Fayetteville Division - Fayetteville, NC	Microbac NY - Cortland Office - Cortland, NY	Southern Testing Division (Sat) - Greensboro, NC
Hauser Division - Boulder, CO	Microbac NY - Waverly Office - Waverly, NY	Venice Division - Venice, FL

