



Weston Solutions, Inc.
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January 2, 2013

Mr. Paul Atkociunas
On-Scene Coordinator
United States Environmental Protection Agency, Region V
77 West Jackson Boulevard
Chicago, IL 60604

Subject: Baycote Metals Finishing Site Removal Action
Mishawaka, Saint Joseph County, Indiana
Contract No.: EP-S5-06-04
Technical Direction Document No.: S05-0001-1205-001
Document Control No.: 1843-2A-BBTW
Work Order No.: 20405.012.001.1843.00

Dear Mr. Atkociunas:

Under Technical Direction Document No. S05-0001-1205-001, the United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to provide oversight of removal action activities at the Baycote Metals Finishing Site in Mishawaka, Saint Joseph County, Indiana (the Site). This letter report discusses analytical results and sampling activities for the Site that were conducted in accordance with the site-specific Field Sampling Plan (FSP) dated September 24, 2012, and the Quality Assurance Project Plan (QAPP) dated October 23, 2012, both prepared by WESTON START.

This letter report discusses the Site description, Site history, removal action activities, and removal action sample analytical results. In addition, this letter report has six attachments. **Attachment A** provides the figures for this letter report. **Attachment B** provides a photographic log of removal action sampling and other activities. **Attachment C** provides the Structural Condition Report for the Site building. **Attachment D** provides the U.S. EPA Field Environmental Decision Support (FIELDS) Team Geophysical Survey Report. **Attachment E** provides tables summarizing the sampling data. **Attachment F** provides the laboratory analytical results and data validation report for samples collected during the removal action.

SITE DESCRIPTION

The Site is located at 1302 Industrial Drive in Mishawaka, Saint Joseph County, Indiana (**Figure 1** in **Attachment A**). The Site coordinates are 41°39'0.03" North latitude and 86°09'57.11" West longitude. The Site is bordered to the north and south by industrial properties; to the west by Industrial Drive, with industrial properties beyond; and to the east by a vacant lot, with industrial properties beyond (**Figure 2** in **Attachment A**). The nearest residential properties are located approximately 730 feet west of the Site. The Site contains a large building divided into multiple areas (**Figure 3** in **Attachment A**).



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U.S. EPA

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Baycote Metals Finishing Site
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SITE HISTORY

The Site is a former chrome plating shop and metal finishing facility. After the closure of the facility, the property owner began voluntary removal of on-site wastes but never completed the removal. According to an Indiana Department of Environmental Management (IDEM) Inspection Summary Letter dated February 15, 2010, approximately 52,000 gallons of hazardous waste were present on site.

On November 18, 2011, the U.S. EPA received a request from the Saint Joseph County Health Department (SJCHD) to mitigate the potential for imminent and substantial threats to the public health or welfare of the United States or the environment at the Site. On November 21, 2011, the U.S. EPA and SJCHD conducted an initial Site walkthrough at the facility. The inspection noted a large number of drums, totes, and vats containing various acids and caustics stored in the facility.

In December 2011, the U.S. EPA and WESTON START conducted a site assessment and identified over 332 drums, vats, and other miscellaneous containers throughout the Site. Most containers were labeled, but the volumes of the contents were unknown. Containers identified during the site assessment contained various materials, including the following: zinc cyanide solution, chloride zinc acid, yellow chromate, acid copper bath, black hexavalent chromate post dip, sulfuric acid, hydrochloric acid, and unlabeled and unidentified materials. The site assessment documented the following conditions at the Site:

- Wastes exhibiting the characteristics of ignitability, corrosivity, Toxicity Characteristic Leaching Procedure (TCLP) cadmium, and TCLP chromium
- Contaminants in open containers in poor condition
- Questionable integrity of the building structure (collapsed roof in the former wastewater treatment [WWT] area [Area W] and flooding in the Line 4-7 Room [Area C])
- Close proximity of Site to residential properties and other sensitive receptors (including churches, schools, and waterways)
- Potential pathways for waste inside the on-site building to migrate to public areas

From May 29 through November 2, 2012, the U.S. EPA conducted a removal action at the Site to mitigate imminent and substantial threats to the public health or welfare of the United States or the environment at the Site.

REMOVAL ACTION ACTIVITIES

WESTON START prepared a site-specific FSP dated September 24, 2012, and QAPP dated October 23, 2012, that document the following sampling activities:



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- Collection of one sludge sample from tank J-12 for analysis of total and reactive cyanide, Target Analyte List (TAL) metals (including total hexavalent chromium), and TCLP metals
- Collection of soil samples from the field east of the Site building for analysis of total and reactive cyanide, total Resource Conservation and Recovery Act (RCRA) metals (including total hexavalent chromium), TCLP metals, TCLP volatile organic compounds (VOC), TCLP semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB)
- Collection of liquid samples from the former WWT area located in Area W for analysis of total and reactive cyanide, ignitability, pH, and total RCRA metals (including total hexavalent chromium)
- Collection of sludge samples from the former WWT area located in Area W for analysis of total and reactive cyanide, TCLP metals, and total RCRA metals (including total hexavalent chromium)

Attachment B provides a photographic log of sampling activities. A chronology of sampling activities is presented below.

September 26, 2012

WESTON START collected one sludge sample (BMF-WS01-092612) from tank J-12 in Area W (**Figure 4A** in **Attachment A**). WESTON START submitted the sample to Microbac Laboratories, Inc., in Merrillville, Indiana, for analysis of total and reactive cyanide, TAL metals (including total hexavalent chromium), and TCLP metals.

October 4, 2012

Keller Engineering, Inc., of South Bend, Indiana, performed a visual inspection to assess the structural safety of various portions of the Site building. Based on the Structural Condition Report dated October 12, 2012 (**Attachment C**), the level of deterioration varies throughout the building depending on proximity to corrosive operations, age, and type of construction. Concrete portions of the building largely are unaffected, but metal components are in various stages of decay. In general, hot-rolled shapes (such as beams, columns, and plates) still have adequate strength. Thin sheet-metal components (such as metal decking, light gage purlins, and light-weight bar joists) are in questionable condition because of the thinness of the metal parts, where even minor corrosion causes significant loss of strength.

October 17, 2012

The U.S. EPA FIELDS Team conducted a geophysical survey of the field east of the on-site building. According to the Geophysical Survey Report dated October 16, 2012 (**Attachment D**), the U.S. EPA FIELDS Team used the following geophysical instruments: a cesium vapor



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gradient magnetometer, a high-sensitivity time-domain electromagnetic metal detector, a broad-frequency domain electromagnetic sensor, and a ground-penetrating radar detector. An anomalous area was identified in the southern region of the investigation area (east of the Site building). The report indicates that the anomalous area most likely is caused by surface metal just below ground surface.

October 22, 2012

WESTON START collected six (five investigative and one duplicate) soil samples (BMF-S01-102212 through BMF-S05-102212 and BMF-S03-102212D) from the field east of the Site Building (**Figure 5 in Attachment A**). Based on the results of the geophysical survey, the Emergency and Rapid Response Services (ERRS) contractor excavated test pits in the anomalous area using a mini-excavator. Evidence of waste burial (drums, containers, and plating waste) was not observed. However, metal debris (bolts and nuts) was present at or near the ground surface. Samples BMF-S01-102212 and BMF-S02-102212 were collected from the anomalous area. The remaining samples were collected in the field at the direction of the U.S. EPA On-Scene Coordinator. The samples were submitted to Pace Analytical Services, Inc. (Pace), in Indianapolis, Indiana, for analysis of total and reactive cyanide, total RCRA metals (including total hexavalent chromium), TCLP metals, TCLP VOCs, TCLP SVOCs, and PCBs.

October 29, 2012

WESTON START collected six (five investigative and one duplicate) liquid samples (BMF-WL01-102912 through BMF-WL05-102912 and BMF-WL01-102912D) from the former WWT area located in Area W (**Figure 4B in Attachment A**). The samples were submitted to Pace in Indianapolis, Indiana, for analysis of total and reactive cyanide, ignitability, pH, and total RCRA metals (including total hexavalent chromium).

WESTON START also collected six (five investigative and one duplicate) sludge samples (BMF-WS01-102912 through BMF-WS05-102912 and BMF-WS01-102912D) from the former WWT area located in Area W (**Figures 4A and 4B in Attachment A**). The samples were submitted to Pace in Indianapolis, Indiana, for analysis of total and reactive cyanide, TCLP metals, and total RCRA metals (including total hexavalent chromium).

REMOVAL ACTION SAMPLE ANALYTICAL RESULTS

During the removal action, WESTON START collected the sludge, soil, and liquid samples discussed under "Removal Action Activities" above. The sample results were compared to the following screening criteria:

- Sludge – Title 40 of the *Code of Federal Regulations* (CFR), Part 261
- Soil – 40 CFR, Part 261, and U.S. EPA Regional Screening Levels (RSL) – Industrial Soil



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- Liquid – 40 CFR, Part 261

Figures 4A, 4B, and 5 in Attachment A show the sampling locations. **Attachment F** provides the laboratory analytical report and the data validation report for the samples.

The laboratory analytical results for the sludge sample collected from tank J-12 are summarized in **Table 1 in Attachment E** and discussed below.

- Sample BMF-WS01-092612
 - The sample contained TCLP cadmium at 6.66 milligram per liter (mg/L), which exceeds the TCLP cadmium regulatory limit of 1.0 mg/L. Therefore, according to 40 CFR 261.24(b), this sample represents material that meets the definition of hazardous waste for the characteristic of toxicity (D006).
 - The sample contained TCLP chromium at 31.2 mg/L, which exceeds the TCLP chromium regulatory limit of 5.0 mg/L. Therefore, according to 40 CFR 261.24(b), this sample represents material that meets the definition of hazardous waste for the characteristic of toxicity (D007).

The laboratory analytical results for soil samples collected from the field east of the Site building are summarized in **Table 2 in Attachment E**. None of the results exceeded the 40 CFR, Part 261, screening criteria. In addition, none of the results exceeded the U.S. EPA RSLs – Industrial Soil except for the total arsenic results, which exceeded the RSL of 1.6 milligrams per kilogram (mg/kg) as summarized below.

- Sample BMF-S01-102212: Arsenic at 6.7 mg/kg
- Sample BMF-S02-102212: Arsenic at 9.9 mg/kg
- Sample BMF-S03-102212: Arsenic at 6.2 mg/kg
- Duplicate sample BMF-S03-102212D: Arsenic at 6.4 mg/kg
- Sample BMF-S04-102212: Arsenic at 12.7 mg/kg
- Sample BMF-S05-102212: Arsenic at 14.6 mg/kg

The laboratory analytical results for the liquid samples collected from the former WWT area located in Area W are summarized in **Table 3 in Attachment E**. None of the results exceeded the 40 CFR, Part 261, screening criteria.

The laboratory analytical results for the sludge samples collected from the former WWT area located in Area W are summarized in **Table 4 in Attachment E**. Only the results for samples BMF-WS01-102912D, BMF-WS02-102912, and BMF-WS04-102912 exceeded the screening criteria as discussed below.



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- Duplicate sample BMF-WS01-102912D
 - The sample contained TCLP cadmium at 5.1 mg/L, which exceeds the TCLP cadmium regulatory limit of 1.0 mg/L. Therefore, according to 40 CFR 261.24(b), this sample represents material that meets the definition of hazardous waste for the characteristic of toxicity (D006).
- Sample BMF-WS02-102912
 - The sample contained TCLP cadmium at 4.6 mg/L, which exceeds the TCLP cadmium regulatory limit of 1.0 mg/L. Therefore, according to 40 CFR 261.24(b), this sample represents material that meets the definition of hazardous waste for the characteristic of toxicity (D006).
- Sample BMF-WS04-102912
 - The sample contained TCLP cadmium at 3 mg/L, which exceeds the TCLP cadmium regulatory limit of 1.0 mg/L. Therefore, according to 40 CFR 261.24(b), this sample represents material that meets the definition of hazardous waste for the characteristic of toxicity (D006).
 - The sample contained TCLP chromium at 9.5 mg/L, which exceeds the TCLP chromium regulatory limit of 5.0 mg/L. Therefore, according to 40 CFR 261.24(b), this sample represents material that meets the definition of hazardous waste for the characteristic of toxicity (D007).

If you have any questions or comments regarding this report, please contact me at (312) 424-3314.

Very truly yours,
Weston Solutions, Inc.


Trena J. Seilheimer
WESTON START Project Manager

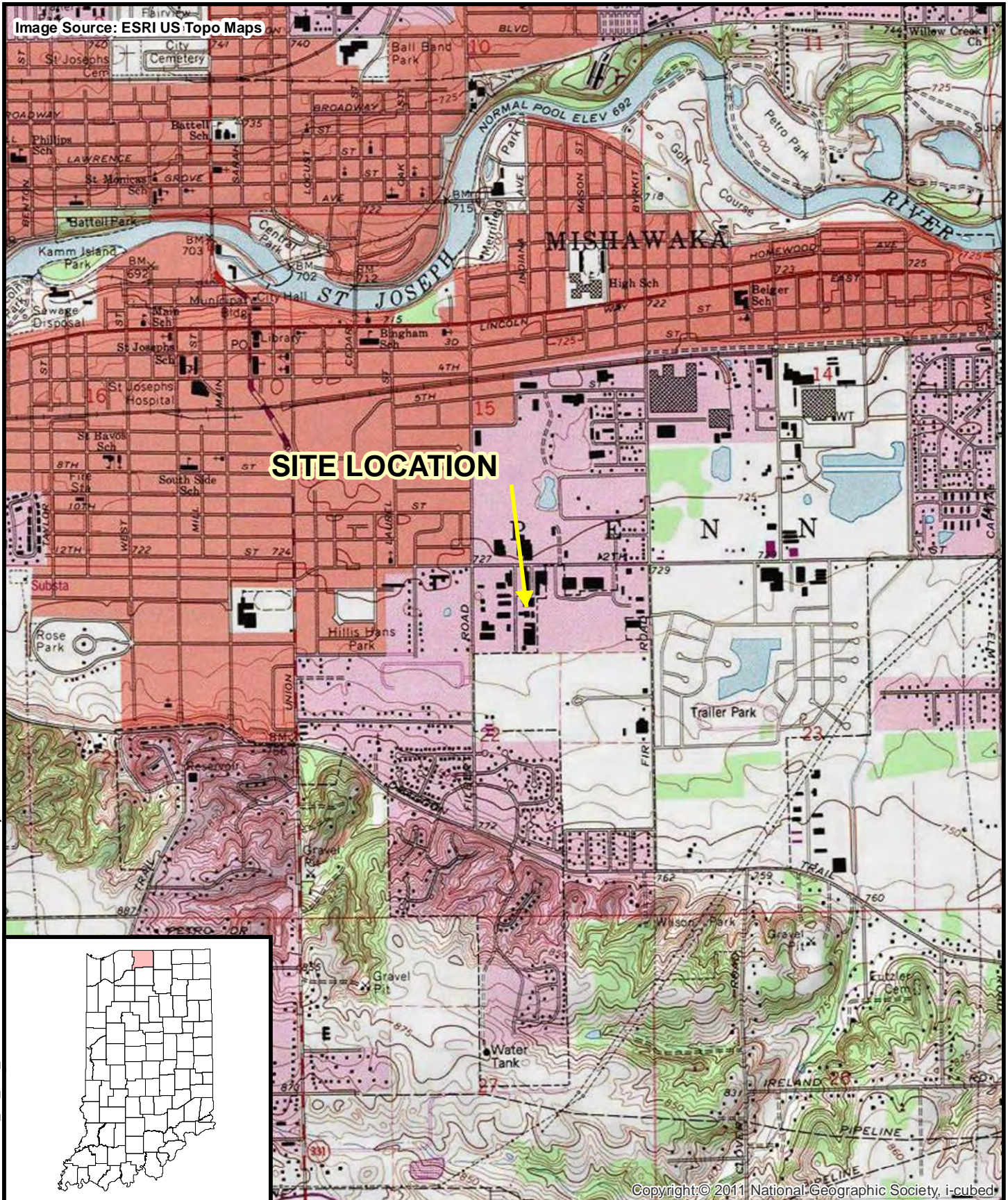
Attachments:

- A – Figures
- B – Photographic Log
- C – Structural Condition Report
- D – U.S. EPA FIELDS Team Geophysical Survey Report
- E – Sampling Summary Tables
- F – Laboratory Analytical Results and Data Validation Reports

cc: WESTON START DCN File

ATTACHMENT A
FIGURES

Image Source: ESRI US Topo Maps



Copyright: © 2011 National Geographic Society, i-cubed

Legend

0 2,000 Feet



Prepared for:
U.S. EPA REGION V

Contract No: EP-S5-06-04
TDD: S05-0001-1205-001
DCN: 1843-2A-BBTW



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Figure 1

Site Location Map
Baycote Metals Finishing Site
Mishawaka, St. Joseph County, Indiana

Image Source: ESRI Bing Maps

E 12th St

Harrison Rd

E 12th

SITE LOCATION

Industrial Dr

bing

Image courtesy of the IndianaMap © 2012 Microsoft Corporation © 2010 NAVTEQ © AND

Legend

0 150 Feet



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U.S. EPA REGION V

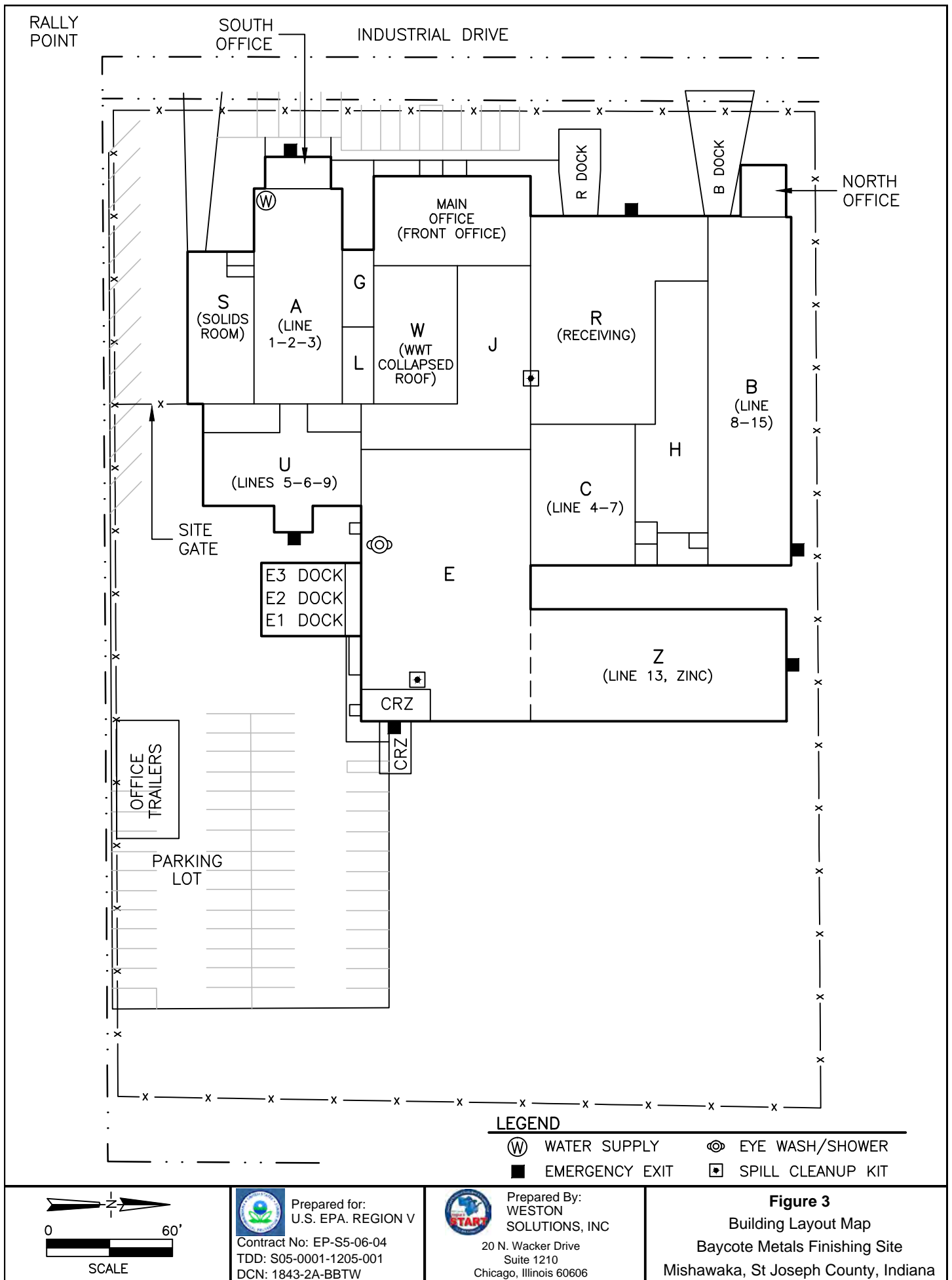
Contract No: EP-S5-06-04
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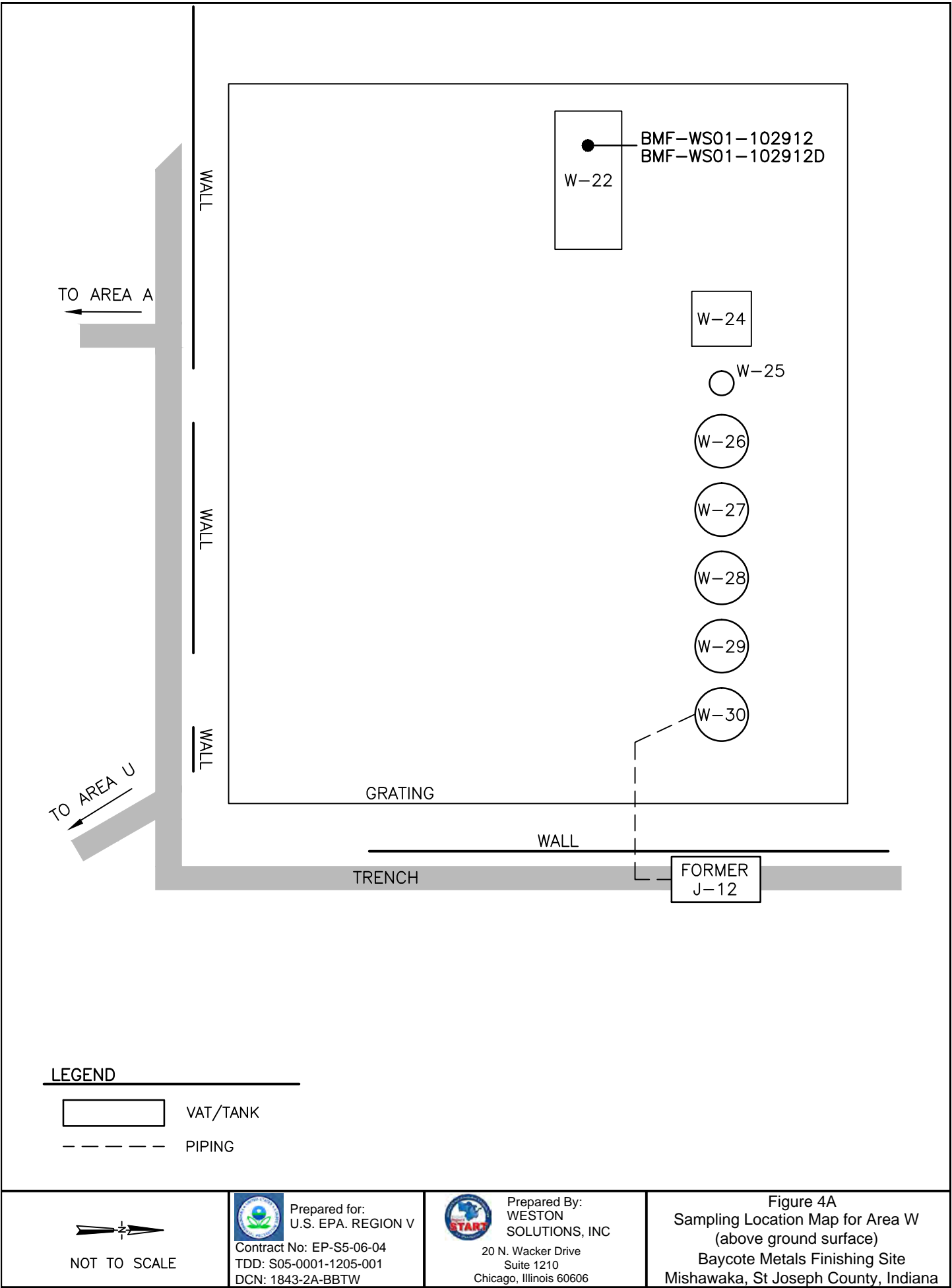


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Figure 2

Site Layout Map
Baycote Metals Finishing Site
Mishawaka, St. Joseph County, Indiana





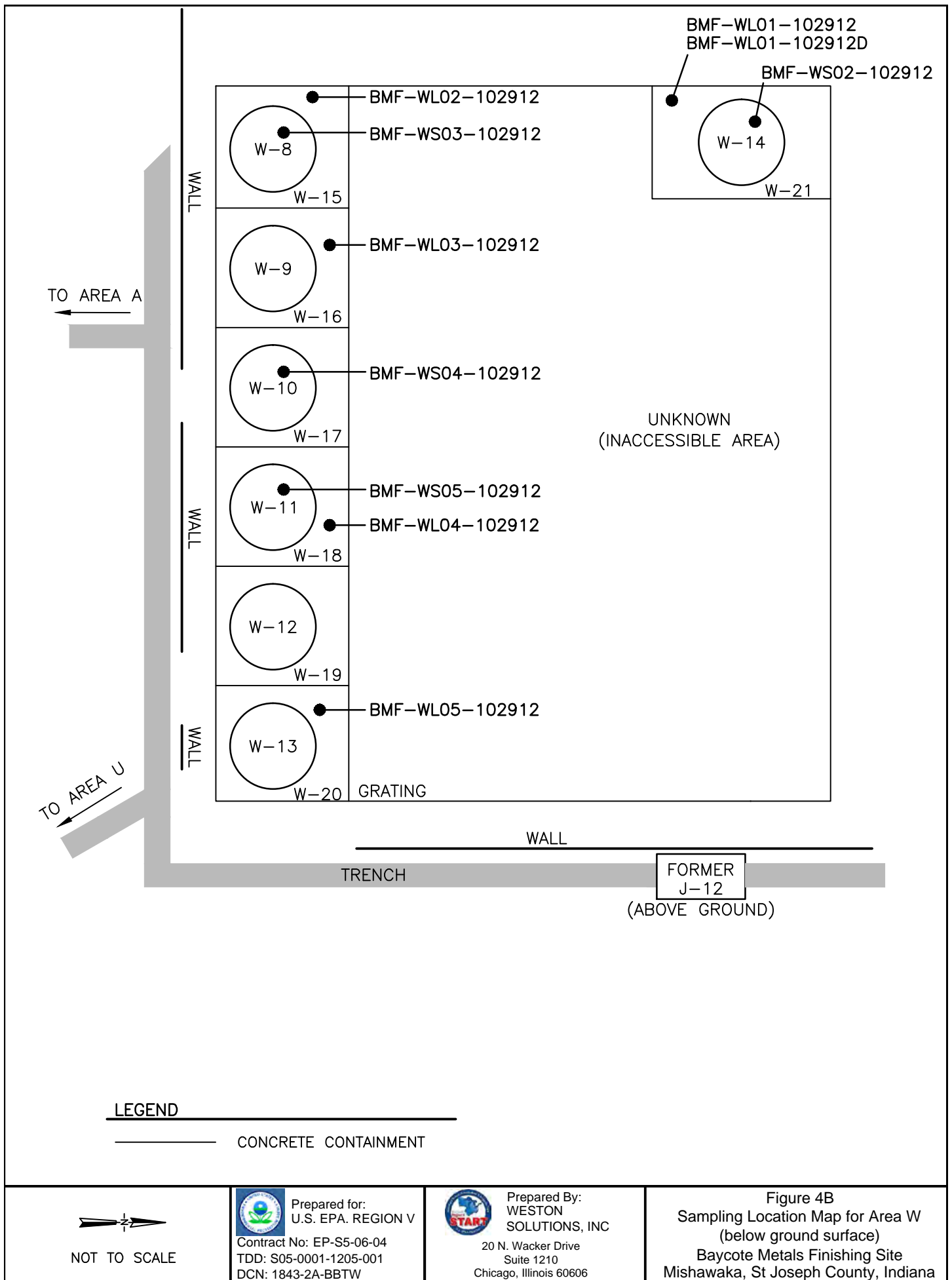


Image Source: ESRI Bing Maps

E 12th St

Harrison Rd

E 12th St

Industrial Dr

BMF-S04-102212

BMF-S05-102212

BMF-S03-102212 & BMF-S03-102212D

BMF-S01-102212

BMF-S02-102212

bing™

Image courtesy of the IndianaMap © 2012 Microsoft Corporation © 2010 NAVTEQ © AND

Legend

● Sampling Locations

0 150 Feet



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Figure 5

Soil Sampling Location Map
Baycote Metals Finishing Site
Mishawaka, St. Joseph County, Indiana

ATTACHMENT B
PHOTOGRAPHIC LOG



Site: Baycote Metals Finishing Site

Photograph No.: 1

Direction: West

Subject: Collection of sludge sample BMF-WS01-092612 from tank J-12

Date: 9/26/12

Photographer: Ramon Mendoza



Site: Baycote Metals Finishing Site

Photograph No.: 2

Direction: Northwest

Subject: Collection of sludge sample BMF-WS01-092612 from tank J-12

Date: 9/26/12

Photographer: Ramon Mendoza



Site: Baycote Metals Finishing Site

Photograph No.: 3

Date: 10/4/12

Direction: North

Photographer: Jeff Bryniarski

Subject: Visual inspection to assess structural safety of various portions of Site building



Site: Baycote Metals Finishing Site

Photograph No.: 4

Date: 10/17/12

Direction: West

Photographer: Jeff Bryniarski

Subject: U.S. EPA FIELDS Team conducting geophysical survey of field east of building



Site: Baycote Metals Finishing Site

Photograph No.: 5

Direction: Northwest

Subject: U.S. EPA FIELDS Team conducting geophysical survey of field east of building

Date: 10/17/12

Photographer: Jeff Bryniarski



Site: Baycote Metals Finishing Site

Photograph No.: 6

Direction: Northeast

Subject: U.S. EPA FIELDS Team conducting geophysical survey of field east of building

Date: 10/17/12

Photographer: Jeff Bryniarski



Site: Baycote Metals Finishing Site

Photograph No.: 7

Direction: West

Subject: U.S. EPA FIELDS Team conducting geophysical survey of field east of building

Date: 10/17/12

Photographer: Jeff Bryniarski



Site: Baycote Metals Finishing Site

Photograph No.: 8

Direction: East

Subject: Excavation of test pits in areas where anomalies detected by U.S. EPA FIELDS Team geophysical survey

Date: 10/22/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 9

Direction: East

Subject: Excavation of test pits in areas where anomalies detected by the U.S. EPA FIELDS Team geophysical survey

Date: 10/22/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 10

Direction: East

Subject: Excavation of test pits in areas where anomalies detected by the U.S. EPA FIELDS Team geophysical survey

Date: 10/22/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 11

Direction: West

Subject: Excavation of test pits in areas where anomalies detected by the U.S. EPA FIELDS Team geophysical survey

Date: 10/22/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 12

Direction: East

Subject: Liquid samples BMF-WL01-102912 and BMF-WL01-102912D and sludge sample BMF-WS02-102912 from former WWT area located in Area W

Date: 10/29/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 13

Direction: Down

Subject: Liquid sample BMF-WL02-102912 from former WWT area located in Area W

Date: 10/29/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 14

Direction: Down

Subject: Sludge sample BMF-WS03-102912 from former WWT area located in Area W

Date: 10/29/12

Photographer: Dave Sena



Site: Baycote Metals Finishing Site

Photograph No.: 15

Direction: West

Date: 10/29/12

Photographer: Dave Sena

Subject: Liquid sample BMF-WL03-102912 and sludge samples BMF-WS04-102912 and BMF-WS05-102912 from former WWT area located in Area W



Site: Baycote Metals Finishing Site

Photograph No.: 16

Direction: North

Date: 10/29/12

Photographer: Dave Sena

Subject: Liquid sample BMF-WL05-102912 from former WWT area located in Area W

ATTACHMENT C
STRUCTURAL CONDITION REPORT

KELLER ENGINEERING, INC.

**54365 30th Street
South Bend, Indiana 46635
Phone (574) 272-3525
Fax (574) 247-6006**

October 12, 2012

John Behrens
Environmental Restoration LLC
16660 Canal Street, Suite D
South Holland, Illinois 60473

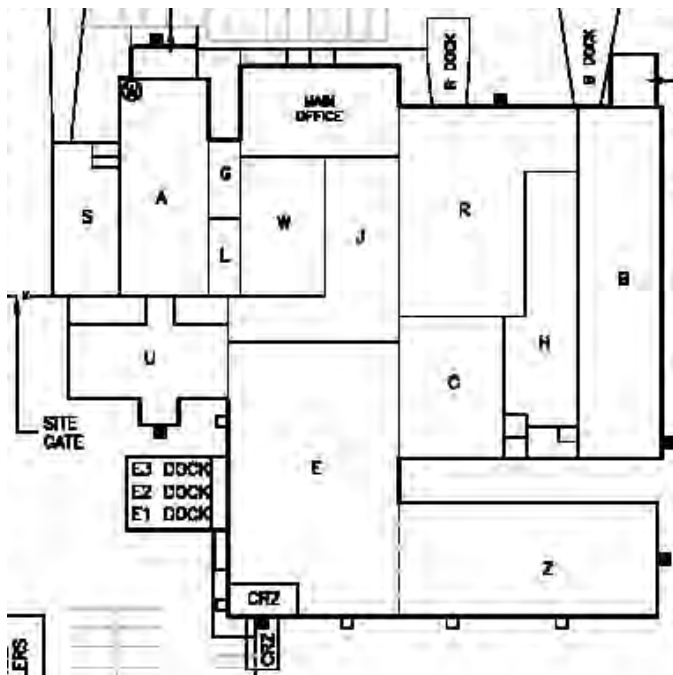
RE: BAYCOTE STRUCTURAL CONDITION REPORT Engineer's Project No. 1210-102

Thursday, October 4, 2012, Rick D. Keller P.E. inspected the BayCote Facility located at 1302 Industrial Drive, Mishawaka, Indiana. The purpose of the inspection was to assess the structural safety of the various portions of the building so that Environmental Restoration LLC could perform an environmental cleanup of this US EPA Superfund Site. A portion of the building complex roof had collapsed bringing into question the safety of the building. Those accompanying Mr. Keller included Paul Atkociunas, Federal On-Scene Coordinator U.S. EPA Region 5 and Toby Viehweg of Environmental Restorations LLC.



The building housed the former Baycote Metal Finishing operations which incorporated corrosive chemicals into their processes and created corrosive environments which have attacked portions of the building structure from the inside. The level of deterioration varied throughout the facility depending on its proximity to the corrosive operations, the age, and the type of building. The concrete portions of the structure were largely unaffected, but metal components were in various stages of decay. In general hot rolled shapes such as beams, columns and plates still had adequate strength. Thin sheet metal components such as metal decking, light gage purlins, and light-weight bar joists were questionable. Since they were made of thin metal parts, even minor corrosion caused significant losses of strength.

The facility consisted of a conglomeration of several structures joined together. The diagram to the left produced from US EPA Figure 3-1 shows the various areas. A copy of this figure with our comments is attached. Areas that were most severely affected were W, J, and U. This report will discuss those areas in depth, and includes a brief review of the other areas of the plant.



BUILDING E AND Z

We entered the plant through buildings E and Z. These were newer pre-engineered steel warehouse type buildings. Since they were relatively new and far from the corrosive operations, both buildings were in good condition and were safe for operations.



BUILDING J

Building J was a much older structure that consisted of steel columns and beams, steel bar joists, and a metal roof deck. It was much closer to the corrosive operations and was in poor condition. Areas of the roof deck were rusted away, and many of the bar joists had lost significant strength due to the corrosion. We recommend providing temporary shoring under badly rusted bar joists. If a small section of metal roof deck fails, it is possible that rigid foam insulation and the roofing could fall into the space. The risk of serious injury from these light-weight materials is low, but all occupants should wear hard hats as a precaution.



The shoring could consist of 4x4 adjustable shores placed under a panel point near the center of the joist span. A panel point is where the round bar webbing connects with the bottom chord. If a row of shores is installed under adjacent bar joists, install cross bracing between the posts to prevent side sway of the bottom of the bar joists and top of the columns. When the shoring is installed, do not try to lift the roof, but make sure the shores are snug against the bottom of the joist. The intention is not to raise the joist but to prevent it from sagging farther.



BUILDING W

Building W housed the waste pre-treatment plant. This was a very corrosive environment. A portion of the roof of this structure had collapsed. The building was a pre-engineered steel structure, and it had rigid steel main frames fabricated from plate steel welded to form the beams and columns. The main frames have retained much of their strength. The purlins that span between the main frames are formed sheet metal. Some of them have lost much of their strength, and many have failed causing the partial collapse. Fiberglass insulation with a vinyl liner was draped over the purlins, and it protected the sheet metal roof deck from corrosion. Without the support of the purlins, the roof deck could not span between the main frames.

The purlins, fiberglass insulation and roof deck must be removed before remediation can take place in the building. There was much discussion about whether a crane could reach this area without first demolishing a building on the periphery. In our opinion, that would not be necessary. The purlins and roof decking are light weight, and once cut free of the rest of the building, they could be cut up and removed by hand. Smaller equipment such as a Lull or fork lift could be used to support sections of the roof while other areas are cut away. Since the main frames have retained most of their strength, it would not be necessary to remove them. They should be braced against falling sideways because they depend on the purlins and roof deck for that bracing.



The contractor should be aware that each layer provides lateral bracing for the element below it. Care should be taken to stay out from under the structure as it is being cut away. Do not remove an entire bay before moving to adjacent bays because that could place large lateral loads on the main frames. Instead, we suggest removing one or two rows of purlins across the length of the building before taking the next rows of purlins.

The tanks containing contaminants are supported by bar grates over concrete storage tanks. We do not know how deep the tanks are because they are full of water. We do not recommend walking on the bar grates because they are supported by badly corroded steel beams. Temporary self-supported scaffolding should be constructed over the tanks to provide access to the chemical containers. Once they have been removed, the bar grates should be removed to provide access to the concrete tanks below.



BUILDING U


Building U was also a pre-engineered building, but it had a gable shaped roof. The purlins were light gage Z purlins similar to building W, but they were a little heavier and were not as badly corroded. None of the purlins have failed. One of the columns on the south end wall was corroded at its base badly enough for it to crush downward. Since it was an end wall column, the frame had intermediate columns which eliminate the outward thrust at the bottom of the columns. Therefore, although the bottom of the column has crushed downward, it is not in danger of collapsing.

Since the roof purlins have corroded, we do not believe the building will be safe to enter when it has a significant snow load on the roof. Prior to that, no roof failures are likely. We do not recommend working in the building during periods of high wind. Otherwise, it should be safe to remove the contaminated equipment. We recommend cutting the suspending wires loose from the roof in a way that does not increase loads to the roof.

In our opinion it is possible to safely complete the remediation if these recommendations are followed. This was a visual inspection only. The assessment is based solely on the judgment of Mr. Keller based on his visual observations. As demolition proceeds, Keller Engineering should be consulted if any unexpected conditions are uncovered. We are also available to consult with you regarding demolition procedures but remind you that Environmental Restoration LLC is responsible for means and methods for the work.

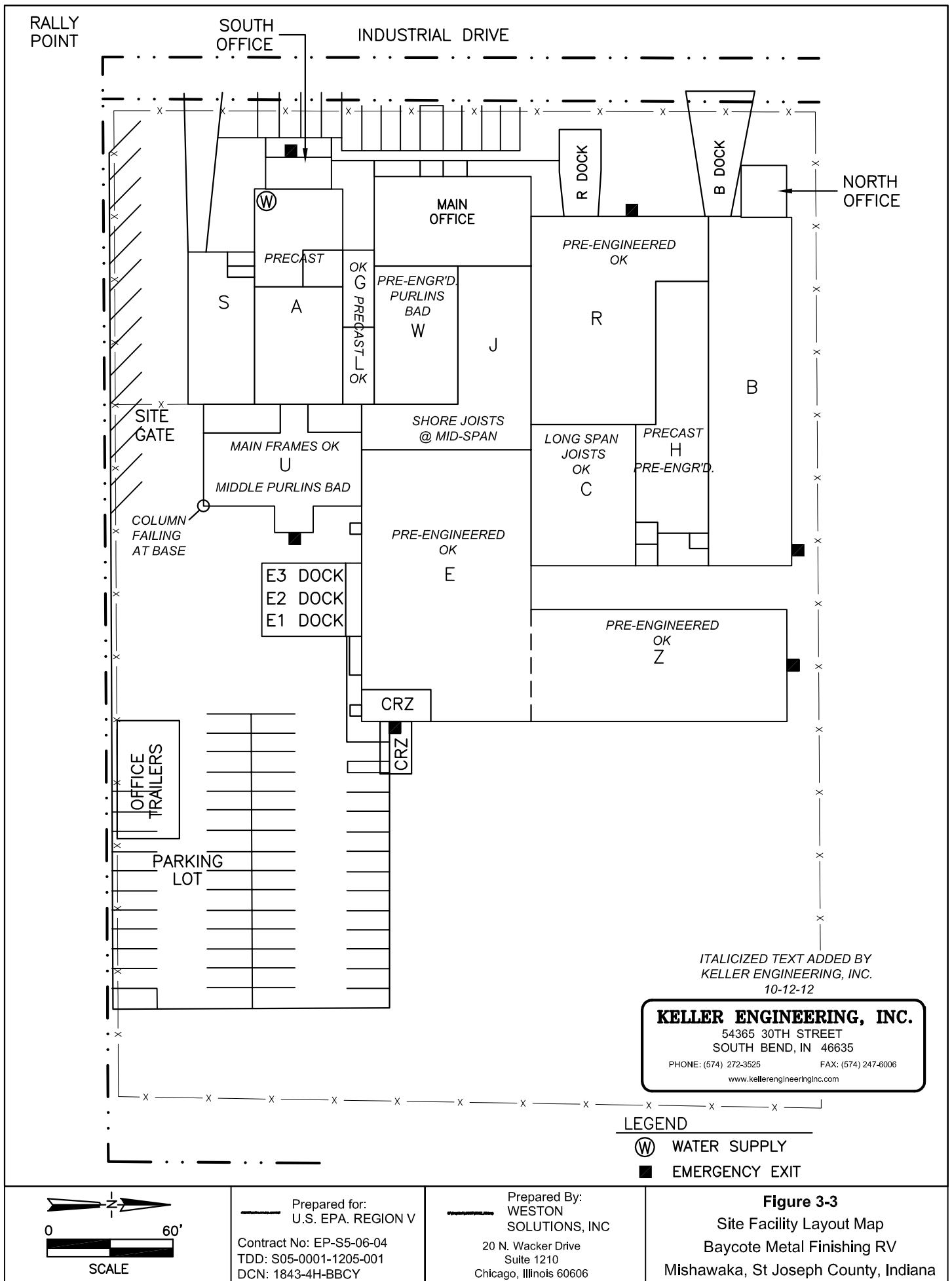
If you have any questions about the report, please call.

Sincerely,



Rick D. Keller P.E.

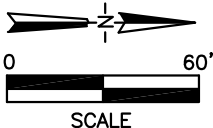




ITALICIZED TEXT ADDED BY
KELLER ENGINEERING, INC.
10-12-12

KELLER ENGINEERING, INC.
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PHONE: (574) 272-3525 FAX: (574) 247-6006
www.kellerengineeringinc.com

- LEGEND
- (W) WATER SUPPLY
 - EMERGENCY EXIT



Prepared for:
U.S. EPA. REGION V

Contract No: EP-S5-06-04
TDD: S05-0001-1205-001
DCN: 1843-4H-BBCY

Prepared By:
WESTON
SOLUTIONS, INC

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Suite 1210
Chicago, Illinois 60606

Figure 3-3
Site Facility Layout Map
Baycote Metal Finishing RV
Mishawaka, St Joseph County, Indiana

ATTACHMENT D
U.S. EPA FIELDS TEAM GEOPHYSICAL SURVEY REPORT

**Geophysical Survey Report
Baycote Metal Finishing Site
Mishawaka, Indiana**

**Date of Survey
October 16, 2012**



**James Ursic
Superfund Division - Field Services Section
United States Environmental Protection Agency
Region 5
Chicago, Illinois**

Introduction

At the request of Paul Atkociunas, USEPA On-Scene Coordinator Region 5, a geophysical survey was conducted at the Baycote Metal Finishing site, 1302 Industrial Drive in Mishawaka, Indiana (see Figures 1 and 2) on October 16, 2012. The purpose of the survey was to locate possible buried tanks or other significant subsurface metallic objects, if any, on the subject property. Present during the survey besides the survey operator were Paul Atkociunas and several USEPA contractors.

Several geophysical instruments were used at this site and included a cesium vapor gradient magnetometer, a high sensitivity time domain electromagnetic metal detector, a broadband frequency domain electromagnetic sensor and ground penetrating radar.

Site Conditions

The site consists of several vacant buildings some of which were actively being remediated and a vacant lot at the rear, or eastern portion, of the property. The vacant lot was fairly level with vegetation to the north and east; scrap metal at the northwest boundary and a ditch at the eastern boundary. Portions of the vacant lot were recently brush hogged and cleared areas had abundant vegetative stubble which would prevent good ground coupling for using ground penetrating radar.

Access to the site for maneuvering geophysical equipment was hampered by three obstructions; vegetation, a post supporting an AreaRAE™ device and cut vegetation which was consolidated and piled in several areas the survey area. Such obstacles had a larger impact on the wheeled metal detector cart. One pile of cut vegetation at the southwest corner of the site was moved between operation of the magnetometer and electromagnetic tools to allow access to the area.

Weather conditions during the survey were mild.

Field Procedures

Geophysical instruments were deployed in the following order, gradient magnetometer, high sensitivity metal detector, broadband electromagnetic sensor and ground penetrating radar. Only the magnetometer and broadband electromagnetic sensor were traversed over a systematic grid. The high sensitivity electromagnetic metal detector and ground penetrating radar were only used on areas suspected of having anomalies.

Gradient Magnetometer

This instrument is limited to detecting ferrous metals (materials containing iron) and was the first instrument deployed at the site. Depth detection limits are dependent on the size and mass of the ferrous metal. Lateral sensor detection extents are also dependent on the amount of mass present and may extend slightly beyond the actual source limits.

The magnetic survey was conducted using a Geometrics G-858G cesium vapor gradient magnetometer in a vertical gradient mode, one meter spacing. Sensor orientation had a configuration of rotation at 45 degrees with a tilt angle set to 0 degrees, per manufacture's guidance document. Units were measured in gammas per meter. An instrument self-test was initiated and passed prior to the survey.

Data collection was guided by a Trimble AgGPS parallel swathing unit set to an interval of 5 feet. The AgGPS unit was augmented with a differential correction process using OmniSTAR service for sub-meter accuracy. Traverses were walked in alternating paths trending north and south, and also in east-west alternating paths in an effort to collect additional data. These traverses are shown as yellow dots in Figures 3, & 4. In some areas these yellow dots indicate circular patterns, this occurred when an above ground obstacle was encountered and the operator walked in a circle around the object thus making this information part of the data set.

The area investigated was bounded by the building to the west; vegetation and trees to the north; trees, vegetation and a ditch to the east; and the asphalt parking lot to the south. This boundary is illustrated on Figure 1.

A definitive description of any ferrous anomalies such as scrap metal, automobiles, drums, etc. is almost impossible to determine since no one value is unique to a specific object. However, an idea of metal mass concentrations can be inferred since the magnetic intensity of an anomaly increases as mass of the metal increases.

Broadband Electromagnetic Induction Tool

The Geophex - Aeroquest GEM-2 is a frequency domain electromagnetic induction tool which measures simultaneously in two modes, a metal detection mode and a ground conductivity mode. The unit has selectable frequency options allowing the operator to have *some* control of the certain depth intervals. However, each frequency is not definitively depth specific due to variability of soil/rock type, moisture content, chemical composition, and metals present.

The tool's capabilities in the metal detection mode can detect any type of metal while in the ground conductivity mode can detect changes in electrical properties in the soil and under the right conditions could detect contaminant plumes if there is a strong enough difference between native soils and the contaminate.

Five frequencies were used for this survey and were: 450 Hz, 1,130 Hz, 3,930 Hz, 13,590 Hz, and 35,010 Hz. Each frequency enables data to be collected from differing intervals with the highest frequencies being near surface and the lowest frequencies collecting data deeper within the subsurface. It is estimated that the highest frequency (35,010 Hz) is collecting data at -3 feet below ground surface with subsequent frequencies each collecting data another -3 feet below the previous frequency. So the lowest frequency (450 Hz) is estimated to be collecting data -15 feet below ground level. An instrument self-test was initiated and passed prior to the survey.

Geophex - Aeroquest GEM-2 data were collected in alternating north-south traverses approximating the same traverses as the magnetometer, and line spacing was established every five feet. No east-west traverses were used to collect data. The operator wore a Garmin puck type GPS antenna on his hard hat to document traverses using a WAAS based system and plotted using WGS 1984. The accuracy of the Garmin is probably within 10 feet and the traverse paths shown in Figures 5 and 8 do not exactly represent the true paths since the operator was following flagging markers which provided a more accurate straight line traverse.

High Sensitivity Electromagnetic Metal Detector

The Geonics EM61-MK2 instrument is capable of sensing any type of metal to a depth approximately 12 to 15 feet below the sensors and was the second instrument deployed at the site. The lateral extent of detection is narrowly limited to the size of the antennas which are 1 Meter wide (parallel to direction of travel) and 0.5 Meter long (perpendicular to direction of travel).

The EM61-MK2 was only used for this project on anomalous areas established by magnetic and electromagnetic methods to take advantage of this instrument's capability to delineate shapes of metallic anomalies. An instrument self-test was initiated and passed prior to the survey.

Ground Penetrating Radar (GPR)

The unit used at this site was a Sensors and software Noggin system with a 250 MHz antenna. It consists of a housing containing transmitting and receiving antennas suspended at the ground surface by a four wheeled cart somewhat similar to a baby stroller. On the handle-bar used to push the instrument, is attached the control console, data recorder and screen. Data collection was initiated by an on-board wheel encoder which automatically collected and linked data at uniform intervals. Since this is a wheeled unit and must maintain coupling with the ground-pavement surface, it is less mobile than hand carried geophysical tools and could not be used in areas of discarded tree branches.

GPR was only used for this project on anomalous areas established by magnetic and electromagnetic methods to take advantage of GPR higher resolution to determine if targets had rounded tops, typical of tanks and pipes. An instrument self-test was initiated and passed prior to the survey.

Site Photographs

Two sets of photographs were taken, the first on October 17, 2012 by J. Ursic after the geophysical survey and the later on November 11, 2012 by a USEPA contractor when the one anomaly area was excavated.

Data Processing

Several programs and operations were used to interpolate data: Geometrics Magmap 2000 was used to transfer magnetic data to a laptop; Geonics EM61-MK2 data were downloaded using

DATeM61-MK2 program; GEM2 data were transferred using WinGEMv3; aerial photographs were downloaded from Bing Map Images and geo-referenced to latitude and longitude using ArcMap 10. Illustrations used to show the spatial distribution of the data, and contour intervals, were created from Golden Software's Surfer 9 program using a Kriging algorithm. Final GPS values are shown using UTM Zone 16N and converted to WGS 84 decimal degrees.

Results

Magnetics (Geometrics G-858G Gradient Magnetometer)

Four figures are presented to show the results of magnetic data, Figures 3 and 4 indicate the traverses taken to collect data. Figures 6 and 7 are the contour maps and both have a contour level of 200 gammas per meter to illustrate large anomaly areas. Figures 6 and 7 are summarized as follows:

Figure 6.

Magnetic data for this figure are plotted with 200 gammas per meter contours and illustrates stronger anomalous mass details of the area. Anomalies located at the west end of the survey area are due to the metal building and interior metal objects which was approximately seven feet west of the first traverse line. Minor anomalous area near -86.16360, 41.64960 are due to the AreaRAE instrument. The anomalous areas near -86.16355, 41.64936 appear to be from unknown ferrous source.

Figure 7.

Magnetic data in this figure was collected on east-west traverses. Less anomalous areas are noted near the building since no one line is closely paralleling the building and the operator made some effort to keep some distance from the building. Anomaly near -86.16365, 41.64980 is from the corner of the metal building. Another anomaly near -86.16325, 41.64984 is due to surface scrap in the area. Anomalies from an unknown source, also seen in Figure 6, is apparent near -86.16355, 41.64936.

Frequency Domain Electromagnetic Detector (Geophex-Aeroquest GEM-2)

Figure 8 is a plot of electromagnetic conductivity, in the quadrature phase, from frequency 3,930 Hz which represents an area estimated to be approximately 6-9 feet below ground surface. The purpose of this data set is to determine if any subsurface changes in ground conductivity exists which would indicate possible contaminate plume.

Figure 8

This Figure is a plot of electromagnetic conductivities in the quadrature phase indicated by black contour lines. The orange lines show the traverses taken to obtain data and recorded using a WAAS GPS system. Note that the WAAS system is not sub-meter corrected and has additional error when compared to traverses in Figures 6 and 7. The large anomalous areas on the west side of the survey area are due to the antenna coupling into the side of the metal building up to about 12' east of the structure. Anomalous areas near -86.16360, 41.64935 appear to be in the same area as the magnetic anomalies.

Time Domain Electromagnetic Metal Detector (Geonics EM61-MK2)

This tool was not used to collect data on a systematic grid, but was used in the southern anomalous area to delineate the shape of the magnetic anomalies. Photograph numbers 4 and 66 illustrates the flagged area of anomalous area which had a rectangular shape based on data from this tool. This area appears to have significant scrap metal at the surface.

Ground Penetrating Radar (Sensors and Software Noggin system with a 250 MHz antenna)

Radar was also used over the anomalous area in an effort to determine the presence of a tank. The data was inconclusive as to the presence of a tank.

Conclusions

After this survey was completed, data were plotted on-site and draft contour maps were given to the On-Scene Coordinator (OSC). Before this final report was written the OSC, guided by recommendations from J. Ursic, a test pit was excavated in the anomalous area near -86.16360, 41.64935 to determine the source of the anomaly. Photographs 54 thru 72 document the excavation process, and no tank was found.

The magnetic anomalous areas were most likely the surface metal that was found just below the ground surface.

The electromagnetic anomaly, although it was quadrature phase data, was influenced by the mass of near surface metal and overwhelmed the instrument. The anomaly is not due to a plume but rather the surface metal.

The radar was inconclusive due to the surface metal which limited the depth radar waves propagated in the ground.

Attached to this document are site photographs taken during the day of the survey, these are photographs numbered 1 thru 73.

DISCLAIMERS & WARNINGS:

Geophysical instruments used at this site were not configured to locate utility lines, although they could be influenced by such lines under certain conditions. It is critical *not to use this data* for utility line location since methods applied were only directed towards larger sub-surface targets, other than utility lines.

It is strongly recommended that before any intrusive sampling, test pits, or other excavation methods are applied at the site, that *all* utility services be contacted to verify that none of the anomalies are the result of or near any buried utilities. Note that not all buried utilities and pipelines are members of local utility location services.

If any excavations are attempted near anomalies mentioned in this report, it is recommended that initial ground breaking be conducted outside the anomalous area and slowly moved towards the anomaly. This procedure will reduce the probability of damaging, puncturing, or disturbing the unknown source of the anomaly.

It is extremely difficult to discriminate specific sources of targets (metal scrap, etc.) based on geophysical responses since no one example can adequately describe each possible

configuration. In addition, any distortions or deteriorations of objects will also affect anomaly signatures.

Disclosure of product names in this report is not an implied or direct recommendation of the equipment used for this survey. It is only provided for its scientific value related to a specific method or tool used.

Attachments



Aerial Photograph Base Map of Area

Baycote Metal Finishing Site
1302 Industrial Drive
Mishawaka, Indiana



Figure 1



Aerial Photograph Base Map of Baycote Property

Baycote Metal Finishing Site
1302 Industrial Drive
Mishawaka, Indiana

Figure 2





Aerial Photograph of North-South
Magnetometer Survey Traverses



Baycote Metal Finishing Site
1302 Industrial Drive
Mishawaka, Indiana



Figure 3



Aerial Photograph of East-West
Magnetometer Survey Traverses



Baycote Metal Finishing Site
1302 Industrial Drive
Mishawaka, Indiana



Figure 4



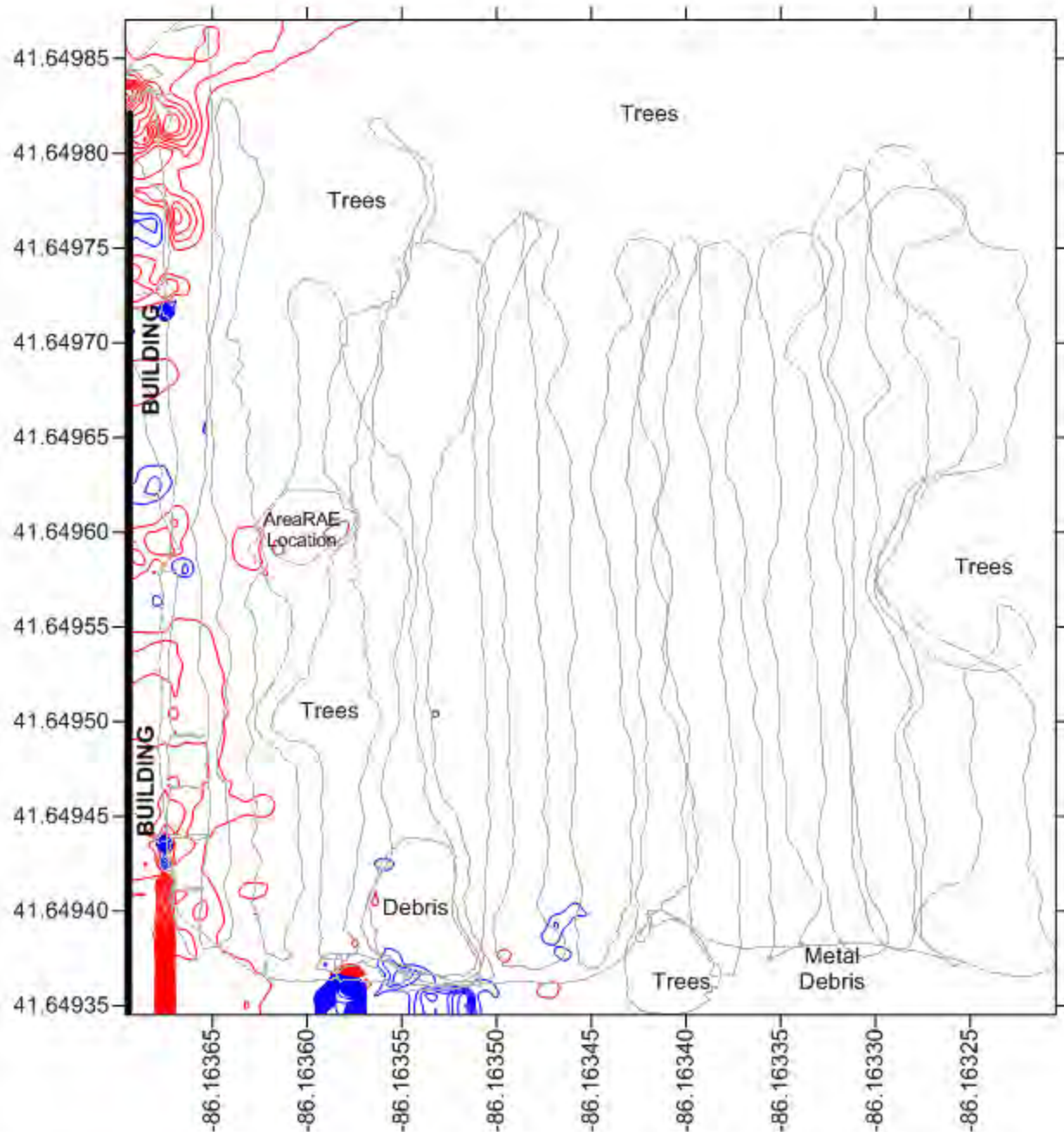
Aerial Photograph of North-South
Electromagnetic Survey Traverses



Baycote Metal Finishing Site
1302 Industrial Drive
Mishawaka, Indiana



Figure 5



**Magnetic Gradiometer Survey
200 Gammas Per Meter Contour Interval Map
North-South Traverses
Baycote Metal Finishing Site
October 16, 2012**

Color Illustration, Do Not Photocopy in BW



USEPA - Region 5
Chicago, Illinois

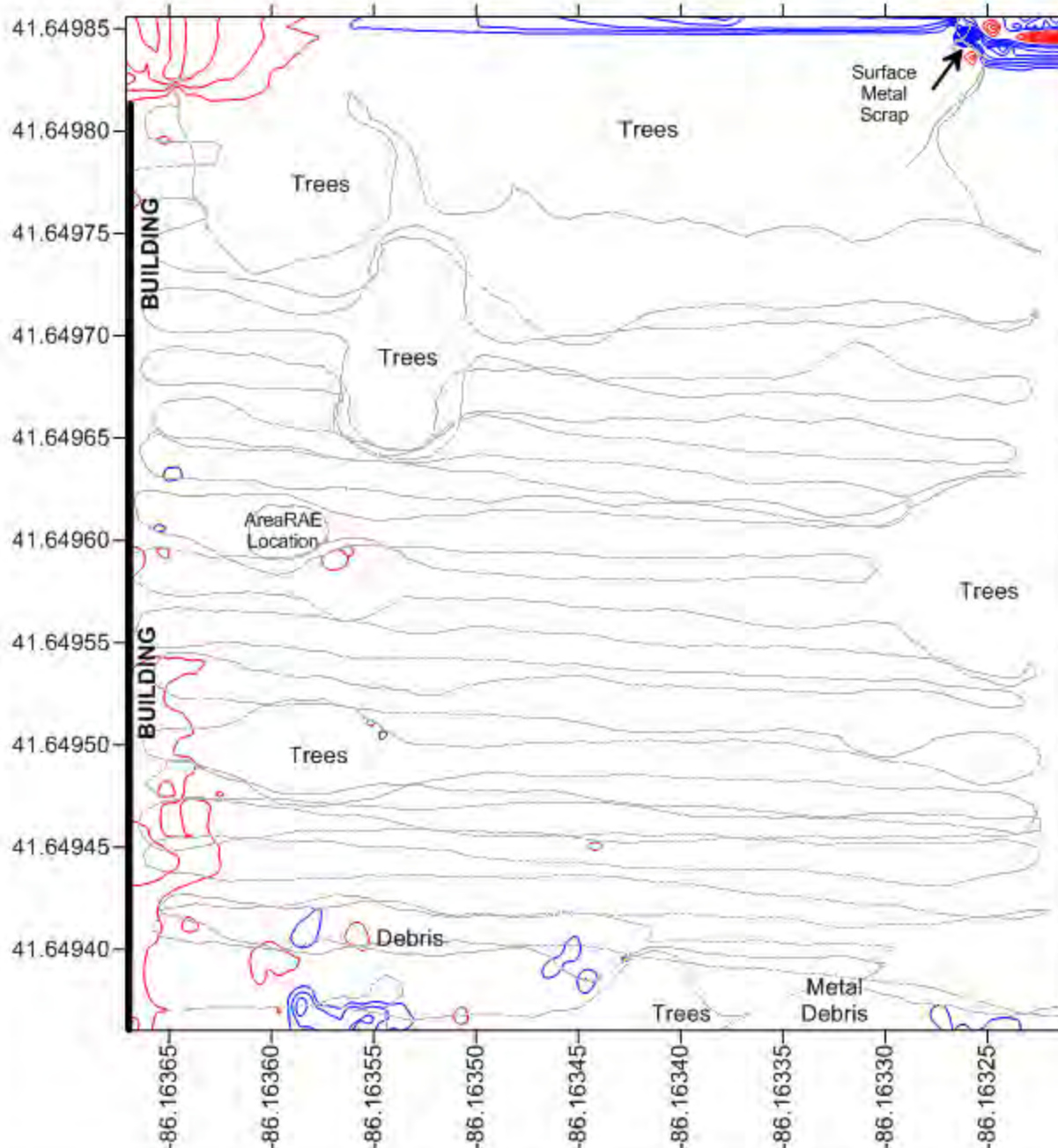
GPS OmniSTAR Real Time
Differential Correction Applied
Projection = WGS 84

Approximate Scale in Feet
0 10 20

Blue Lines = Positive Contours
Red Lines = Negative Contours

Grey Dots = Traverse Lines
One Dot Per Each Data Point

Figure 6



Magnetic Gradiometer Survey
 200 Gamma Per Meter Contour Interval Map
 East-West Traverses
 Baycote Metal Finishing Site
 October 16, 2012

Color Illustration, Do Not Photocopy in BW



USEPA - Region 5
 Chicago, Illinois

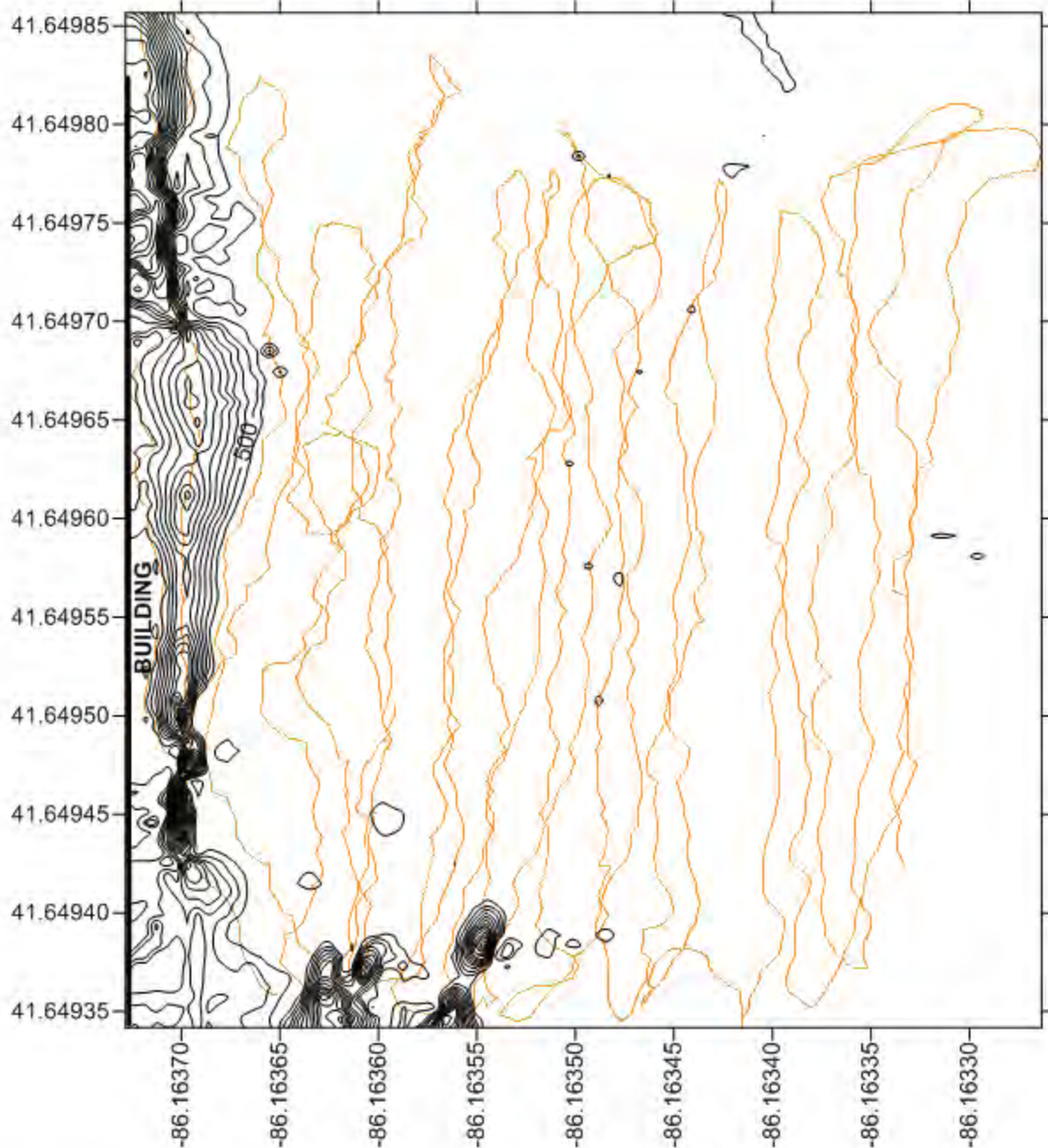
GPS OmniSTAR Real Time
 Differential Correction Applied
 Projection = WGS 84

Approximate Scale in Feet
 0 10 20

Blue Lines = Positive Contours
 Red Lines = Negative Contours

Grey Dots = Traverse Lines
 One Dot Per Each Data Point

Figure 7



Frequency Domain Electromagnetic Survey
 Quadrature Phase 3930 Hz Plotted @ 200 ppt
 Baycote Metal Finishing Site
 Mishawaka, Indisna
 October 16, 2012

Note: 100 and -100 contours omitted for clarity

Color Illustration, Do Not Photocopy in BW



USEPA - Region 5
 Chicago, Illinois

Not Corrected to Sub-Meter Accuracy
 Projection = WGS 84

Approximate Scale in Feet
 0 10 20

Orange Dots = Traverse Lines
 One Dot Per Each Data Point

Figure 8

Baycote Site Photos October 17, 2012



1. Looking E from grid origin



2. Looking W at grid origin



3. Metal scrap found near X-axis baseline



4. Anomalous area (red flagging)

Baycote Site Photos October 17, 2012



5. Looking W at grid origin



6. Looking N from grid origin (Y-axis baseline)



7. Looking N from X-axis baseline



8. Looking NW from grid origin

Baycote Site Photos October 17, 2012



9. Looking N from X-axis baseline



10. Looking SW from NW corner of site



11. Looking SSW from center of site



12. Looking E from N-Central portion of site

Baycote Site Photos October 17, 2012



13. Looking NE at the NE corner of grid



14. Metal Scrap at NE corner of site



15. Metal debris at NE corner of site



16. Looking NE at the NE corner of grid

Baycote Site Photos October 17, 2012



17. Looking W from E-central portion of site



18. Looking N along E-central portion of site



19. Looking SE at SE corner of site



20. Looking W from SE corner of site

Baycote Site Photos October 17, 2012



21. Looking W from SE corner of site



22. Looking E near grid origin



23. Metal scrap near X-axis baseline

Baycote Site Photos November 11, 2012



24. Looking N near grid origin



25. Looking NNE from anomalous area



26. Looking NNE from anomalous area



27. Looking NE from anomalous area

Baycote Site Photos November 11, 2012



28.



29.



30. Looking N from SE corner of grid



31. Looking NE from SE corner of grid

Baycote Site Photos November 11, 2012



32. Looking W from SE corner of grid



33. Looking WNW from SE corner of grid



34. Looking W from E boundary of site



35. Looking W from E central boundary of site

Baycote Site Photos November 11, 2012



36. Looking W from E central portion of site



37. Looking W from E central portion of site



38. Looking W from NE corner of site



39. Looking S from NE corner of site

Baycote Site Photos November 11, 2012



40. Looking south from NE corner of site



41. Looking S from N central portion of site



42. Looking S from N central portion of site



43. Looking S from N central portion of site

Baycote Site Photos November 11, 2012



44. Looking S from N central portion of site



45. Looking S from NW corner of site



46. Looking SE from NW corner of site



47. Looking E from NW corner of site

Baycote Site Photos November 11, 2012



48. Looking E from W central portion along Y-axis



49. Looking NE from W central portion of Y-axis



50. Looking NE from grid origin note AreaRAE



51. Looking NE from grid origin

Baycote Site Photos November 11, 2012



52. Looking E from grid origin



53. Looking E at anomalous area



54. Excavating anomalous area



55. Excavating anomalous area

Baycote Site Photos November 11, 2012



56. Excavating anomalous area



57. Excavating anomalous area



58. Excavating anomalous area



59. Excavating anomalous area

Baycote Site Photos November 11, 2012



60. Excavating anomalous area



61. Excavating anomalous area



62. Excavating anomalous area



63. Excavating anomalous area

Baycote Site Photos November 11, 2012



64. Excavating anomalous area



65. Excavating anomalous area



66. Excavating anomalous area

Baycote Site Photos November 11, 2012



67. Excavating anomalous area



68. Excavating anomalous area



69. Excavating anomalous area



70. Excavating anomalous area

Baycote Site Photos November 11, 2012



71. Excavating anomalous area



72. Excavating anomalous area



73. Looking E from anomalous area

ATTACHMENT E
SAMPLING SUMMARY TABLES

Table 1
Tank J-12 Sludge Sample Analytical Results
Baycote Metals Finishing Site
Mishawaka, Saint Joseph County, Indiana

Chemical Name	Field Sample ID	BMF-WS01-092612
	Sampling Date	9/26/2012
	40 CFR ¹	Result
Cyanide (mg/kg)		
Cyanide, Total	NL	29
Cyanide, Reactive	NL	2 U
TAL Metals (mg/kg)		
Antimony	NL	0.85
Arsenic	NL	0.5 U
Barium	NL	3.7
Cadmium	NL	72
Chromium	NL	2,000
Chromium, Hexavalent	NL	20 UJ
Cobalt	NL	150
Copper	NL	22 J
Lead	NL	9.9
Mercury	NL	0.048
Nickel	NL	110 J
Selenium	NL	0.32 U
Silver	NL	13 J
Thallium	NL	0.24
Vanadium	NL	20 U
Zinc	NL	16,000
TCLP Metals (mg/L)		
Arsenic, TCLP	5	0.033
Barium, TCLP	100	0.5 U
Cadmium, TCLP	1	6.66
Chromium, TCLP	5	31.2
Lead, TCLP	5	0.0125
Mercury, TCLP	0.2	0.001 U
Selenium, TCLP	1	0.03 U
Silver, TCLP	5	0.01 U

Notes:

Result exceeds 40 CFR screening criterion

CFR = *Code of Federal Regulations*

ID = Identification

J = Estimated value

mg/kg = Milligram per kilogram

mg/L = Milligram per liter

NL = Not listed

TAL = Target Analyte List

TCLP = Toxicity Characteristic Leaching Procedure

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

UJ = Not detected at the associated estimated numerical reporting limit

¹From 40 CFR, Part 261, Subpart C

Table 2
Soil Sample Analytical Results
Baycote Metals Finishing Site
Mishawaka, Saint Joseph County, Indiana

Chemical Name	Field Sample ID		BMF-S01-102212	BMF-S02-102212	BMF-S03-102212	BMF-S03-102212D	BMF-S04-102212	BMF-S05-102212
	Sampling Date		10/22/2012	10/22/2012	10/22/2012	10/22/2012	10/22/2012	10/22/2012
	40 CFR ¹	RSL ²	Results					
Cyanide (mg/kg)								
Cyanide, Total	NL	20,000	16.3	20.3	0.61 U	0.72	0.82 U	1.4
Cyanide, Reactive	NL	610	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Total RCRA Metals (mg/kg)								
Arsenic	NL	1.6	6.7	9.9	6.2	6.4	12.7	14.6
Barium	NL	190,000	59.5	73.4	31.4	38.9	88.7	85.7
Cadmium	NL	800	17.8	35.3	2.2 U	2.8	6	5.8
Chromium	NL	NL	115	411	12.9	29	28.4	34.3
Chromium, Hexavalent	NL	5.6	12.7 UJ	14.3 UJ	12.3 UJ	12.7 UJ	16.3 UJ	15.1 UJ
Lead	NL	800	18.3	24.5	8.1	9.7	23.2	23.2
Mercury	NL	43	0.3	0.3 U	0.26 U	0.27 U	0.34 U	0.32 U
Selenium	NL	5,100	2.5 U	2.7	2.2 U	2.4 U	3.9	3.6
Silver	NL	5,100	2.5 U	12.5	2.2 U	2.4 U	3.2 U	2.8 U
TCLP Metals (mg/L)								
Arsenic, TCLP	5	NL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Barium, TCLP	100	NL	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium, TCLP	1	NL	0.087	0.17	0.05 U	0.05 U	0.05 U	0.05 U
Chromium, TCLP	5	NL	0.1 U	0.18	0.1 U	0.1 U	0.1 U	0.1 U
Lead, TCLP	5	NL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Selenium, TCLP	1	NL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Silver, TCLP	5	NL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TCLP VOCs (µg/L)								
1,1-Dichloroethene, TCLP	700	NL	50 U	50 U	50 U	50 U	50 U	50 U
1,2-Dichloroethane, TCLP	500	NL	50 U	50 U	50 U	50 U	50 U	50 U
1,4-Dichlorobenzene, TCLP	7,500	NL	100 U	100 U	100 U	100 U	100 U	100 U
2-Butanone (MEK), TCLP	200,000	NL	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Benzene, TCLP	500	NL	50 U	50 U	50 U	50 U	50 U	50 U
Carbon tetrachloride, TCLP	500	NL	50 U	50 U	50 U	50 U	50 U	50 U
Chlorobenzene, TCLP	100,000	NL	50 U	50 U	50 U	50 U	50 U	50 U
Chloroform, TCLP	6,000	NL	50 U	50 U	50 U	50 U	50 U	50 U
Tetrachloroethene, TCLP	700	NL	91.2	50 U	50 U	50 U	50 U	50 U
Trichloroethene, TCLP	500	NL	50 U	50 U	50 U	50 U	50 U	50 U
Vinyl chloride, TCLP	200	NL	20 U	20 U	20 U	20 U	20 U	20 U
TCLP SVOCs (µg/L)								
2,4,5-Trichlorophenol, TCLP	400,000	NL	500 U	500 U	500 U	500 U	500 U	500 U
2,4,6-Trichlorophenol, TCLP	2,000	NL	100 U	100 U	100 U	100 U	100 U	100 U
2,4-Dinitrotoluene, TCLP	130	NL	100 U	100 U	100 U	100 U	100 U	100 U
2-Methylphenol(o-Cresol), TCLP	200,000	NL	100 U	100 U	100 U	100 U	100 U	100 U
3&4-Methylphenol(m&p Cresol), TCLP	200,000	NL	200 U	200 U	200 U	200 U	200 U	200 U
Hexachloro-1,3-butadiene, TCLP	500	NL	100 U	100 U	100 U	100 U	100 U	100 U
Hexachlorobenzene, TCLP	130	NL	100 U	100 U	100 U	100 U	100 U	100 U
Hexachloroethane, TCLP	3,000	NL	100 U	100 U	100 U	100 U	100 U	100 U
Nitrobenzene, TCLP	2,000	NL	100 U	100 U	100 U	100 U	100 U	100 U
Pentachlorophenol, TCLP	100,000	NL	500 U	500 U	500 U	500 U	500 U	500 U
Pyridine, TCLP	5,000	NL	100 U	100 U	100 U	100 U	100 U	100 U

Table 2
Soil Sample Analytical Results
Baycote Metals Finishing Site
Mishawaka, Saint Joseph County, Indiana

Chemical Name	Field Sample ID		BMF-S01-102212	BMF-S02-102212	BMF-S03-102212	BMF-S03-102212D	BMF-S04-102212	BMF-S05-102212
	Sampling Date		10/22/2012	10/22/2012	10/22/2012	10/22/2012	10/22/2012	10/22/2012
	40 CFR ¹	RSL ²	Results					
PCBs (µg/kg)								
Aroclor 1016	NL	21,000	127 U	143 U	123 U	127 U	57.1 U	151 U
Aroclor 1221	NL	540	127 U	143 U	123 U	127 U	57.1 U	151 U
Aroclor 1232	NL	540	127 U	143 U	123 U	127 U	57.1 U	151 U
Aroclor 1242	NL	740	127 U	143 U	123 U	127 U	57.1 U	151 U
Aroclor 1248	NL	740	127 U	143 U	123 U	127 U	57.1 U	151 U
Aroclor 1254	NL	740	127 U	143 U	123 U	127 U	57.1 U	151 U
Aroclor 1260	NL	740	127 U	143 U	123 U	127 U	57.1 U	151 U
Percent Moisture (%)								
Percent Moisture	NL	NL	21.1	30	18.4	21.4	38.7	33.9

Notes:

Result exceeds U.S. EPA RSL

% = Percent

µg/kg = Microgram per kilogram

µg/L = Microgram per liter

CFR = *Code of Federal Regulations*

ID = Identification

mg/kg = Milligram per kilogram

mg/L = Milligram per liter

NL = Not listed

PCB = Polychlorinated biphenyl

RCRA = Resource Conservation and Recovery Act

RSL = Regional Screening Level

SVOC = Semivolatile organic compound

TCLP = Toxicity Characteristic Leaching Procedure

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

UJ = Not detected at the estimated associated numerical reporting limit

VOC = Volatile organic compound

¹From 40 CFR, Part 261, Subpart C

²From U.S. EPA RSLs - Industrial Soil

Table 3
Former Wastewater Treatment Area Liquid Sample Analytical Results
Baycote Metals Finishing Site
Mishawaka, Saint Joseph County, Indiana

Chemical Name	Field Sample ID	BMF-WL01-102912	BMF-WL01-102912D	BMF-WL02-102912	BMF-WL03-102912	BMF-WL04-102912	BMF-WL05-102912
	Sampling Date	10/29/2012	10/29/2012	10/29/2012	10/29/2012	10/29/2012	10/29/2012
	40 CFR ¹	Results					
Cyanide (mg/L)							
Reactive Cyanide	NL	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U
Cyanide	NL	0.015	0.022	0.13	0.077	2.8	< 0.01 U
Ignitability (°F)							
Ignitability	<140	>180	>180	>180	>180	>180	>180
Flashpoint (S.U.)							
pH	≤2.5 or ≥12.5	8.6	8.7	7.7	7.5	9.8	7
Total RCRA Metals (µg/L)							
Arsenic	NL	< 10 U	< 10 U	< 10 U	< 10 U	27.6	< 10 U
Barium	NL	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U
Cadmium	NL	< 5 U	5.5	36	183	12.2	334
Chromium	NL	41.5	49	362	408	3310	103
Chromium, Hexavalent	NL	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Lead	NL	< 10 U	< 10 U	< 10 U	10.4	< 10 U	< 10 U
Mercury	NL	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Selenium	NL	< 10 U	< 10 U	< 10 U	< 10 U	23.1	< 10 U
Silver	NL	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Notes:

µg/L = Microgram per liter

CFR = *Code of Federal Regulations*

ID = Identification

mg/L = Milligram per liter

NL = Not listed

RCRA = Resource Conservation and Recovery Act

S.U. = Standard Unit

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

¹From 40 CFR, Part 261, Subpart C

Table 4
Former Wastewater Treatment Area Sludge Sample Analytical Results
Baycote Metals Finishing Site
Mishawaka, Saint Joseph County, Indiana

Chemical Name	Field Sample ID	BMF-WS01-102912	BMF-WS01-102912D	BMF-WS02-102912	BMF-WS03-102912	BMF-WS04-102912	BMF-WS05-102912
	Sampling Date	10/29/2012	10/29/2012	10/29/2012	10/29/2012	10/29/2012	10/29/2012
	40 CFR ¹	Results					
Cyanide (mg/kg)							
Cyanide	NL	813	1,880	12.9	39.3	36.3	0.65
Reactive Cyanide	NL	0.025 U	0.025 U	0.025 U	0.31	0.025 U	0.025 U
TCLP Metals (mg/L)							
Arsenic, TCLP	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Barium, TCLP	100	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium, TCLP	1	0.64	5.1	4.6	0.05 U	3	0.05 U
Chromium, TCLP	5	0.1 U	0.1 U	0.6	0.1 U	9.5	0.5
Lead, TCLP	5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Mercury, TCLP	0.2	0.0026	0.0024	0.002 U	0.002 U	0.002 U	0.002 U
Selenium, TCLP	1	0.21	0.31	0.1 U	0.1 U	0.1 U	0.1 U
Silver, TCLP	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total RCRA Metals (mg/kg)							
Arsenic	NL	6.4	4.5	2	6.3	47.1	4.8
Barium	NL	17.2	12.8	2.8	35.9	1.2	1.9 U
Cadmium	NL	1,520	1,050	76.3	72.9	188	1.9 U
Chromium	NL	704	415	1,370	1,280	9,380	61.4
Chromium, Hexavalent	NL	20 UJ	10 UJ	1.2 J	2 UJ	2 UJ	5 UJ
Lead	NL	619	558	16.2	25.1	20 U	37.4 U
Mercury	NL	0.88 J	0.85	0.02 U	0.46	0.02 U	0.19 U
Selenium	NL	102	126	4 U	0.78	20.7	37.4 U
Silver	NL	10	17.6 U	10.3	110	38.8	2.9
Percent Moisture (%)							
Percent Moisture	NL	18.5	19	96.5	80.1	92.2	29.5

Notes:

Result exceeds 40 CFR screening criterion

% = Percent

CFR = *Code of Federal Regulations*

ID = Identification

J = Estimated value

mg/kg = Milligram per kilogram

mg/L = Milligram per liter

¹From 40 CFR, Part 261, Subpart C

NL = Not listed

RCRA = Resource Conservation and Recovery Act

TCLP = Toxicity Characteristic Leaching Procedure

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

UJ = Not detected at the estimated associated numerical reporting limit

ATTACHMENT F
LABORATORY ANALYTICAL RESULTS AND DATA VALIDATION
REPORT



October 4, 2012

Environmental Restoration
16660 South Canal Street
South Holland, IL 60437-

Work Order No.: 12I0947

Re: Baycote RV Mishawaka, IN

Dear John Behrens:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 9/27/2012 10:26:00AM for the analyses presented in the following report as Work Order 12I0947.

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 contact your project manager. For any feedback, please contact Robert Crookston, Interim Managing Director, at robert.crookston@microbac.com. You may also contact Sean Hyde, Chief Operating Officer, at sean.hyde@microbac.com or James Nokes, President, at james.nokes@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

A handwritten signature in black ink, appearing to read "Kevin A. Falvey", is written over a light blue horizontal line.

Kevin Falvey
Account Manager



WORK ORDER SAMPLE SUMMARY**Date:** *Thursday, October 4, 2012*

Client: Environmental Restoration
Project: Baycote RV Mishawaka, IN
Lab Order: 12I0947

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
12I0947-01	BMF-W501-092612		09/26/2012 17:00	9/27/2012 10:26:00AM
12I0947-02	BMF-W501-092612-TCLP		09/26/2012 17:00	9/27/2012 10:26:00AM



CASE NARRATIVE

Date: Thursday, October 4, 2012

Client: Environmental Restoration
Project: Baycote RV Mishawaka, IN
Lab Order: 12I0947

B - the Method Blank associated with the sample contained Iron at a level above the reporting limit. This is considered insignificant, as the concentration in the sample was more than ten-times that measured in the blank.

B - the Method Blank associated with the BMF-W501-092612 sample contained Chromium at a level above the reporting limit. This is considered insignificant, as the concentration in the sample was more than ten-times that measured in the blank.

The Matrix Spike and Matrix Spike Duplicate performed on the BMF-W501-092612 sample failed the accuracy and precision criteria for Cadmium, Chromium, Cobalt, and Zinc with a low bias. This bias is due to the high indigenous analyte concentration (relative to the spike amount).

The Matrix Spike and Matrix Spike Duplicate performed on the BMF-W501-092612 sample failed the accuracy criteria for Copper and Nickel with a high bias. The precision criteria were met. A Post Digestion Spike was performed and the acceptance criteria met, indicating accurate measurement at the instrument. This data is indicative of matrix interference at the preparation level. The Matrix Spike and Matrix Spike Duplicate failed the accuracy criteria for Vanadium with a low bias. The precision criteria were met. A Post Digestion Spike was performed and the acceptance criteria were not met, indicating sample matrix interference.



Analytical Results

Date: Thursday, October 4, 2012

Client: Environmental Restoration
 Client Project: Baycote RV Mishawaka, IN
 Client Sample ID: BMF-W501-092612
 Sample Description:
 Matrix: Solid

Work Order/ID: 12I0947-01
 Sampled: 09/26/2012 17:00
 Received: 09/27/2012 10:26

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
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Method: SW-846 6010B					Analyst: SA		
Total Metals by ICP		Prep Method: SW846 3050B			Prep Date/Time: 09/28/2012 08:32		
Aluminum	A	55	40		mg/Kg	4	09/28/2012 21:38
Beryllium	A	ND	0.20		mg/Kg	4	09/28/2012 21:38
Calcium	A	3200	100		mg/Kg	4	09/28/2012 21:38
Iron	A	4900	10	B	mg/Kg	4	09/28/2012 21:38
Magnesium	A	1200	100		mg/Kg	4	09/28/2012 21:38
Manganese	A	58	0.80		mg/Kg	4	09/28/2012 21:38
Potassium	A	290	100		mg/Kg	4	09/28/2012 21:38
Sodium	A	1400	100		mg/Kg	4	10/01/2012 11:26

Total Metals by ICP/MS		Method: SW-846 6020A					Analyst: RPL	
		Prep Method: SW846 3050B					Prep Date/Time: 09/28/2012 08:32	
Antimony	A	0.85	0.20		mg/Kg	20	09/28/2012 16:06	
Arsenic	A	ND	0.50		mg/Kg	20	09/28/2012 16:06	
Barium	A	3.7	0.20		mg/Kg	20	09/28/2012 16:06	
Cadmium	A	72	0.20		mg/Kg	20	09/28/2012 16:06	
Chromium	A	2000	10	B	mg/Kg	1000	10/02/2012 17:38	
Cobalt	A	150	0.20		mg/Kg	20	09/28/2012 16:06	
Copper	A	22	0.50		mg/Kg	20	09/28/2012 16:06	
Lead	A	9.9	0.38		mg/Kg	20	09/28/2012 16:06	
Nickel	A	110	0.50		mg/Kg	20	09/28/2012 16:06	
Selenium	A	0.58	0.32	B	mg/Kg	20	09/28/2012 16:06	
Silver	A	13	0.50		mg/Kg	20	09/28/2012 16:06	
Thallium	A	0.24	0.20		mg/Kg	20	09/28/2012 16:06	
Vanadium	A	ND	20		mg/Kg	1000	10/02/2012 17:38	
Zinc	A	16000	50		mg/Kg	1000	10/02/2012 17:38	

Method: SW-846 7471A				Analyst: RPL			
Prep Method: SW-846 7471				Prep Date/Time: 09/28/2012 08:20			
Total Mercury by CVAA							
Mercury	A	0.048	0.042		mg/Kg	1	09/28/2012 14:23

Method: SW-846 9012B					Analyst: AGRIE		
Total Cyanide		Prep Method: Solid CN Distillation			Prep Date/Time: 10/03/2012 10:35		
Cyanide, Total	A	29	5.0		mg/Kg	10	10/03/2012 13:24

Method: SW-846 7196A				Analyst: AGRIE			
Prep Method: SW846 3060A				Prep Date/Time: 10/03/2012 14:20			
Hexavalent Chromium							
Chromium, Hexavalent	A	ND	20	mg/Kg	50	10/04/2012 15:43	



Analytical Results

Date: Thursday, October 4, 2012

Client: Environmental Restoration
Client Project: Baycote RV Mishawaka, IN
Client Sample ID: BMF-W501-092612-TCLP
Sample Description:
Matrix: Solid

Work Order/ID: 12I0947-02

Sampled: 09/26/2012 17:00

Received: 09/27/2012 10:26

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
Method: 1311/7470A Analyst: RPL							
Prep Method: SW-846 1311/SW-846 7470 Prep Date/Time: 10/01/2012 10:00							
TCLP Mercury by CVAA	A	ND	0.00100		mg/L	1	10/01/2012 14:01
Method: 1311/6010B Analyst: SA							
Prep Method: SW-846 1311/SW846 3005A Prep Date/Time: 10/01/2012 09:50							
TCLP Metals by ICP	A	0.0330	0.0100		mg/L	1	10/01/2012 16:52
Arsenic	A	ND	0.500		mg/L	1	10/01/2012 16:52
Barium	A	6.66	0.00200		mg/L	1	10/01/2012 16:52
Cadmium	A	31.2	0.00300		mg/L	1	10/01/2012 16:52
Chromium	A	0.0125	0.00750		mg/L	1	10/01/2012 16:52
Lead	A	ND	0.0300		mg/L	1	10/01/2012 16:52
Selenium	A	ND	0.0100		mg/L	1	10/01/2012 16:52
Silver	A						
Method: Chapter 7/9014 Analyst: AGRIE							
Prep Method: Solid Reactive CN Distillation Prep Date/Time: 10/01/2012 10:30							
Reactive Cyanide	A	ND	2.0		mg/Kg	1	10/03/2012 8:48



FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

B = Detected in the associated method Blank at a concentration above the routine RL
b = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL
b* = Detected in the associated method Blank at a concentration greater than half the RL
CFU = Colony forming units
D = Dilution performed on sample
DF = Dilution Factor
g = Gram
E = Value above quantitation range
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference
J = Analyte concentration detected between RL and MDL (Metals / Organics)
LOD = Limit of Detection
m3 = Meters cubed
MDL = Method Detection Limit
mg/Kg = Milligrams per Kilogram (ppm)
mg/L = Milligrams per Liter (ppm)
NA = Not Analyzed
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
NR = Not Recovered
R = RPD outside accepted recovery limits
RL = Reporting Limit
S = Spike recovery outside recovery limits
Surr = Surrogate
U = Undetected
> = Greater than
< = Less than
% = Percent

ANALYTE TYPES: (AT)

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

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank	ICSA = Interference Check Standard "A"
DUP = Method Duplicate	ICSAB = Interference Check Standard "AB"
BS = Method Blank Spike	BSD = Method Blank Spike Duplicate
MS = Matrix Spike	MSD = Matrix Spike Duplicate
ICB = Initial Calibration Blank	ICV = Initial Calibration Verification
CCB = Continuing Calibration Blank	CCV = Continuing Calibration Verification
CRL = Client Required Reporting Limit	OPR = Ongoing Precision and Recovery Standard
PDS = Post Digestion Spike	SD = Serial Dilution
QCS = Quality Control Standard	

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.

- ^a The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)
- ^b The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)
- ^c Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)
- ^d Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)
- ^e Indiana DEM approved support laboratory for solid waste and wastewater analyses
- ^f Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)
- ^f Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)
- ^g Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)
- ^h Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)
- ⁱ North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations (certificate #597)
- ^j Pennsylvania Department of Environmental Protection (Registration No.: 68-04863)
- ^j Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



COOLER INSPECTION

Client Name: Environmental Restoration

Date: Thursday, October 4, 2012

Date/Time Received: 09/27/2012 10:26

Work Order Number: 1210947

Received by: Dave Bryant

Checklist completed by: 9/27/2012 5:51:00PM Dave Bryant

Reviewed by: 9/28/2012 KGF

Carrier Name: Microbac

Cooler ID: Default Cooler

Container/Temp Blank Temperature: 10.00°C

After-Hour Arrival?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
Shipping container/cooler in good condition?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample containers?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
COC present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC included sufficient client identification?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC included sufficient sample collector information?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC included a sample description?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC agrees with sample labels?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC identified the appropriate matrix?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC included date of collection?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC included time of collection?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC identified the appropriate number of containers?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Samples in proper container/bottle?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Sample containers intact?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
All samples received within holding time?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
If the samples are preserved, are the preservatives identified?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	

If No, adjusted by? _____

COC included the requested analyses?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
COC signed when relinquished and received?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Samples received on ice?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
Samples properly preserved?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	
Voa vials for aqueous samples have zero headspace?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>

Cooler Comments: _____

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.

Sample ID	Client Sample ID	Comments
1210947-01	BMF-W501-092612	
1210947-02	BMF-W501-092612-TCLP	



Analytical QC Summary

Client: Environmental Restoration
Work Order: 1210947
Project: Baycote RV Mishawaka, IN

Metals - Quality Control

Batch: B033242 **Prep:** SW846 3050B

Total Metals by ICP

Sample ID:	Blank (B033242-BLK1)			Method:	SW-846 6010B			Prepped:	09/28/2012 08:32		
Source:								Analyzed:	09/28/2012 20:18		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Aluminum	ND	10	mg/Kg								
Beryllium	ND	0.050	mg/Kg								
Calcium	ND	25	mg/Kg								
Iron	2.6	2.5	mg/Kg								
Magnesium	ND	25	mg/Kg								
Manganese	ND	0.20	mg/Kg								
Potassium	ND	25	mg/Kg								

Sample ID:	Blank (B033242-BLK2)				Method:	SW-846 6010B		Prepped:	09/28/2012 08:32		
Source:								Analyzed:	10/01/2012 11:15		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Sodium	ND	25	mg/Kg								

Sample ID:	LCS (B033242-BS1)				Method:	SW-846 6010B		Prepped:	09/28/2012 08:32	
Source:								Analyzed:	09/28/2012 20:23	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Aluminum	9380	20	mg/Kg	6130		153	71.5-250			
Beryllium	249	0.10	mg/Kg	316.0		78.9	61.1-110			
Calcium	12500	50	mg/Kg	11900		105	85.7-139			
Iron	10100	5.0	mg/Kg	9630		105	26.8-193			
Magnesium	4830	50	mg/Kg	5230		92.3	62.5-114			
Manganese	383	0.40	mg/Kg	445.0		86.2	66.7-110			
Potassium	12100	50	mg/Kg	14200		85.2	57.1-110			
Sodium	6990	50	mg/Kg	8160		85.6	55.4-110			

Sample ID:	Matrix Spike (B033242-MS1)			Method:	SW-846 6010B		Prepped:	09/28/2012 08:32		
Source:	1210924-02						Analyzed:	09/28/2012 20:35		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Aluminum	3840	10	mg/Kg	100.0	3330	510	75-125			S
Beryllium	13.5	0.050	mg/Kg	10.00	3.12	104	75-125			
Calcium	24700	25	mg/Kg	1000	23400	132	75-125			ES
Iron	33600	2.5	mg/Kg	100.0	33800	NR	75-125			ES
Magnesium	11900	25	mg/Kg	1000	10200	166	75-125			S
Manganese	968	0.20	mg/Kg	10.00	936	320	75-125			ES
Potassium	1300	25	mg/Kg	1000	158	114	75-125			
Sodium	1350	25	mg/Kg	1000	204	114	75-125			

Sample ID:	Matrix Spike Dup (B033242-MSD1)				Method:	SW-846 6010B		Prepped:	09/28/2012 08:32		
Source:	1210924-02							Analyzed:	09/28/2012 20:40		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Aluminum	3950	10	mg/Kg	100.0	3330	622	75-125	2.89	20	S	



Analytical QC Summary

Client: Environmental Restoration
Work Order: 12I0947
Project: Baycote RV Mishawaka, IN

Metals - Quality Control

Batch: B033242 **Prep:** SW846 3050B

Sample ID: Matrix Spike Dup (B033242-MSD1) **Method:** SW-846 6010B **Prepped:** 09/28/2012 08:32
Source: 12I0924-02 **Analyzed:** 09/28/2012 20:40

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Beryllium	13.6	0.050	mg/Kg	10.00	3.12	105	75-125	0.958	20	
Calcium	25100	25	mg/Kg	1000	23400	168	75-125	1.47	20	ES
Iron	33400	2.5	mg/Kg	100.0	33800	NR	75-125	0.672	20	ES
Magnesium	12100	25	mg/Kg	1000	10200	194	75-125	2.25	20	S
Manganese	987	0.20	mg/Kg	10.00	936	510	75-125	1.94	20	ES
Potassium	1330	25	mg/Kg	1000	158	117	75-125	2.44	20	
Sodium	1360	25	mg/Kg	1000	204	115	75-125	0.814	20	

Batch: B033243 **Prep:** SW846 3050B



Analytical QC Summary

Client: Environmental Restoration

Metals - Quality Control

Work Order: 1210947

Project: Baycote RV Mishawaka, IN

Batch: B033243 **Prep:** SW846 3050B

Total Metals by ICP/MS

Sample ID: Blank (B033243-BLK1)

Method: SW-846 6020A

Prepped: 09/28/2012 08:32

Source:

Analyzed: 09/28/2012 15:54

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Antimony	ND	0.20	mg/Kg							
Arsenic	ND	0.50	mg/Kg							
Barium	ND	0.20	mg/Kg							
Cadmium	ND	0.20	mg/Kg							
Chromium	0.28	0.20	mg/Kg							
Cobalt	ND	0.20	mg/Kg							
Copper	ND	0.50	mg/Kg							
Lead	ND	0.38	mg/Kg							
Nickel	ND	0.50	mg/Kg							
Selenium	0.30	0.20	mg/Kg							
Silver	ND	0.50	mg/Kg							
Thallium	ND	0.20	mg/Kg							
Vanadium	ND	0.40	mg/Kg							
Zinc	ND	1.0	mg/Kg							

Sample ID: LCS (B033243-BS1)

Method: SW-846 6020A

Prepped: 09/28/2012 08:32

Source:

Analyzed: 09/28/2012 16:00

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Antimony	71.3	0.40	mg/Kg	281.0		25.4	10-110			
Arsenic	150	1.0	mg/Kg	192.0		78.1	58.3-110			
Barium	160	0.40	mg/Kg	191.0		83.9	61.3-110			
Cadmium	191	0.40	mg/Kg	245.0		78.1	60.4-110			
Chromium	249	0.40	mg/Kg	303.0		82.2	58.4-110			
Cobalt	195	0.40	mg/Kg	249.0		78.4	61.4-110			
Copper	74.8	1.0	mg/Kg	93.00		80.4	60.5-110			
Lead	180	0.75	mg/Kg	225.0		80.2	60.9-110			
Nickel	207	1.0	mg/Kg	255.0		81.0	61.6-110			
Selenium	76.3	0.40	mg/Kg	112.0		68.1	43.4-111			
Silver	20.9	1.0	mg/Kg	28.80		72.5	50.3-110			
Thallium	187	0.40	mg/Kg	233.0		80.4	55.4-110			
Vanadium	130	0.80	mg/Kg	177.0		73.5	47.1-110			
Zinc	257	2.0	mg/Kg	314.0		81.9	58.6-110			

Sample ID: Matrix Spike (B033243-MS1)

Method: SW-846 6020A

Prepped: 09/28/2012 08:32

Source: 1210947-01

Analyzed: 09/28/2012 16:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Antimony	94.3	0.20	mg/Kg	100.0	0.851	93.4	70-130			
Arsenic	99.5	0.50	mg/Kg	100.0	ND	99.5	70-130			
Barium	112	0.20	mg/Kg	110.0	3.68	98.5	70-130			
Cadmium	70.8	0.20	mg/Kg	10.00	71.6	NR	70-130			S



Analytical QC Summary

Client: Environmental Restoration
Work Order: 12I0947
Project: Baycote RV Mishawaka, IN

Metals - Quality Control

Batch: B033243 **Prep:** SW846 3050B

Sample ID: Matrix Spike (B033243-MS1) **Method:** SW-846 6020A **Prepped:** 09/28/2012 08:32
Source: 12I0947-01 **Analyzed:** 09/28/2012 16:12

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium	2540	0.20	mg/Kg	100.0	1880	660	70-130			ES
Cobalt	155	0.20	mg/Kg	10.00	152	31.9	70-130			S
Copper	35.3	0.50	mg/Kg	10.00	21.7	137	70-130			S
Lead	113	0.38	mg/Kg	100.0	9.88	103	70-130			
Nickel	460	0.50	mg/Kg	100.0	115	345	70-130			S
Selenium	97.2	0.20	mg/Kg	100.0	0.582	96.6	70-130			
Silver	22.2	0.50	mg/Kg	10.00	12.8	93.9	70-130			
Thallium	103	0.20	mg/Kg	100.0	0.241	102	70-130			
Vanadium	45.3	0.40	mg/Kg	100.0	ND	45.3	70-130			S
Zinc	15100	1.0	mg/Kg	100.0	14900	260	70-130			ES

Sample ID: Matrix Spike Dup (B033243-MSD1) **Method:** SW-846 6020A **Prepped:** 09/28/2012 08:32
Source: 12I0947-01 **Analyzed:** 09/28/2012 16:18

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Antimony	94.9	0.20	mg/Kg	100.0	0.851	94.0	70-130	0.600	20	
Arsenic	96.1	0.50	mg/Kg	100.0	ND	96.1	70-130	3.45	20	
Barium	107	0.20	mg/Kg	110.0	3.68	94.1	70-130	4.38	20	
Cadmium	54.8	0.20	mg/Kg	10.00	71.6	NR	70-130	25.4	20	RS
Chromium	1890	0.20	mg/Kg	100.0	1880	9.15	70-130	29.4	20	ERS
Cobalt	112	0.20	mg/Kg	10.00	152	NR	70-130	32.8	20	RS
Copper	38.8	0.50	mg/Kg	10.00	21.7	171	70-130	9.19	20	S
Lead	117	0.38	mg/Kg	100.0	9.88	107	70-130	3.67	20	
Nickel	390	0.50	mg/Kg	100.0	115	275	70-130	16.5	20	S
Selenium	93.3	0.20	mg/Kg	100.0	0.582	92.7	70-130	4.05	20	
Silver	18.9	0.50	mg/Kg	10.00	12.8	61.2	70-130	15.9	20	S
Thallium	100	0.20	mg/Kg	100.0	0.241	99.8	70-130	2.42	20	
Vanadium	52.3	0.40	mg/Kg	100.0	ND	52.3	70-130	14.5	20	S
Zinc	12000	1.0	mg/Kg	100.0	14900	NR	70-130	23.3	20	ERS

Sample ID: Post Spike (B033243-PS1) **Method:** SW-846 6020A **Prepped:** 09/28/2012 08:32
Source: 12I0947-01 **Analyzed:** 10/02/2012 17:50

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Copper	637		µg/Kg	200.0	433	102	75-125			
Nickel	4610		µg/Kg	2000	2300	116	75-125			
Vanadium	2040		µg/Kg	2000	-1080	156	75-125			S

Batch: B033244 **Prep:** SW-846 7471



Analytical QC Summary

Client: Environmental Restoration **Metals - Quality Control**
Work Order: 1210947
Project: Baycote RV Mishawaka, IN
Batch: B033244 **Prep:** SW-846 7471

Total Mercury by CVA

Sample ID: Blank (B033244-BLK1) **Method:** SW-846 7471A **Prepped:** 09/28/2012 08:50
Source: **Analyzed:** 09/28/2012 14:14

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	ND	0.042	mg/Kg							

Sample ID: LCS (B033244-BS1) **Method:** SW-846 7471A **Prepped:** 09/28/2012 08:50
Source: **Analyzed:** 09/28/2012 14:15

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	10.2	2.0	mg/Kg	13.30		76.7	41.9-122			

Sample ID: Matrix Spike (B033244-MS1) **Method:** SW-846 7471A **Prepped:** 09/28/2012 08:50
Source: 1210904-01 **Analyzed:** 09/28/2012 14:19

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	0.475	0.042	mg/Kg	0.08333	0.348	153	70-130			ES

Sample ID: Matrix Spike Dup (B033244-MSD1) **Method:** SW-846 7471A **Prepped:** 09/28/2012 08:50
Source: 1210904-01 **Analyzed:** 09/28/2012 14:20

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	0.412	0.042	mg/Kg	0.08333	0.348	77.5	70-130	14.1	20	

Batch: B033284 **Prep:** SW-846 1311/SW-846 7470

TCLP Mercury by CVA

Sample ID: Blank (B033284-BLK1) **Method:** 1311/7470A **Prepped:** 10/01/2012 10:10
Source: **Analyzed:** 10/01/2012 13:52

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	ND	0.00100	mg/L							

Sample ID: LCS (B033284-BS1) **Method:** 1311/7470A **Prepped:** 10/01/2012 10:10
Source: **Analyzed:** 10/01/2012 13:53

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	0.00198	0.00100	mg/L	0.002000		99.0	80-120			

Sample ID: Matrix Spike (B033284-MS1) **Method:** 1311/7470A **Prepped:** 10/01/2012 10:10
Source: 1210946-01 **Analyzed:** 10/01/2012 13:59

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	0.00252	0.00100	mg/L	0.002000	0.000353	108	50-200			

Sample ID: Matrix Spike Dup (B033284-MSD1) **Method:** 1311/7470A **Prepped:** 10/01/2012 10:10
Source: 1210946-01 **Analyzed:** 10/01/2012 14:00

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Mercury	0.00251	0.00100	mg/L	0.002000	0.000353	108	50-200	0.398	20	



Analytical QC Summary

Client: Environmental Restoration
Work Order: 1210947
Project: Baycote RV Mishawaka, IN

TCLP Metals - Quality Control

Batch: B033288 **Prep:** SW-846 1311/SW846 3005A

TCLP Metals by ICP

Sample ID:	Blank (B033288-BLK1)			Method:	1311/6010B			Prepped:	10/01/2012 09:50		
Source:								Analyzed:	10/01/2012 16:19		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Arsenic	ND	0.0100	mg/L								
Barium	ND	0.500	mg/L								
Cadmium	ND	0.00200	mg/L								
Chromium	ND	0.00300	mg/L								
Lead	ND	0.00750	mg/L								
Selenium	ND	0.0300	mg/L								
Silver	ND	0.0100	mg/L								

Sample ID:	LCS (B033288-BS1)			Method:	1311/6010B		Prepped:	10/01/2012 09:50		
Source:							Analyzed:	10/01/2012 16:24		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Arsenic	2.02	0.0100	mg/L	2.000		101	80-120			
Barium	2.35	0.500	mg/L	2.200		107	80-120			
Cadmium	0.219	0.00200	mg/L	0.2000		109	80-120			
Chromium	2.04	0.00300	mg/L	2.000		102	80-120			
Lead	1.98	0.00750	mg/L	2.000		99.2	80-120			
Selenium	2.16	0.0300	mg/L	2.000		108	80-120			
Silver	0.207	0.0100	mg/L	0.2000		104	80-120			

Sample ID:	Matrix Spike (B033288-MS1)			Method:	1311/6010B		Prepped:	10/01/2012 09:50		
Source:	1210938-02						Analyzed:	10/01/2012 16:35		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Arsenic	2.04	0.0100	mg/L	2.000	ND	102	50-200			
Barium	3.07	0.500	mg/L	2.200	0.699	108	50-200			
Cadmium	0.210	0.00200	mg/L	0.2000	0.00110	105	50-200			
Chromium	2.05	0.00300	mg/L	2.000	ND	102	50-200			
Lead	1.90	0.00750	mg/L	2.000	0.00390	94.7	50-200			
Selenium	2.17	0.0300	mg/L	2.000	ND	109	50-200			
Silver	0.210	0.0100	mg/L	0.2000	ND	105	50-200			

Sample ID:	Matrix Spike Dup (B033288-MSD1)			Method:	1311/6010B		Prepped:	10/01/2012 09:50		
Source:	1210938-02						Analyzed:	10/01/2012 16:41		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Arsenic	2.06	0.0100	mg/L	2.000	ND	103	50-200	1.03	20	
Barium	3.02	0.500	mg/L	2.200	0.699	105	50-200	1.61	20	
Cadmium	0.212	0.00200	mg/L	0.2000	0.00110	105	50-200	0.758	20	
Chromium	2.07	0.00300	mg/L	2.000	ND	104	50-200	1.26	20	
Lead	1.91	0.00750	mg/L	2.000	0.00390	95.5	50-200	0.892	20	
Selenium	2.18	0.0300	mg/L	2.000	ND	109	50-200	0.643	20	
Silver	0.210	0.0100	mg/L	0.2000	ND	105	50-200	0.429	20	



Analytical QC Summary

Client: Environmental Restoration **Wet Chemistry - Quality Control**
Work Order: 1210947
Project: Baycote RV Mishawaka, IN
Batch: B033308 **Prep:** Solid Reactive CN Distillation

Reactive Cyanide

Sample ID: Blank (B033308-BLK1) **Method:** Chapter 7/9014 **Prepped:** 10/01/2012 10:30
Source: **Analyzed:** 10/03/2012 08:15

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Reactive Cyanide	ND	2.0	mg/Kg							

Sample ID: LCS (B033308-BS1) **Method:** Chapter 7/9014 **Prepped:** 10/01/2012 10:30
Source: **Analyzed:** 10/03/2012 08:17

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Reactive Cyanide	16.7	2.0	mg/Kg	250.0		6.67	2.5-51.6			

Sample ID: LCS Dup (B033308-BSD1) **Method:** Chapter 7/9014 **Prepped:** 10/01/2012 10:30
Source: **Analyzed:** 10/03/2012 08:18

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Reactive Cyanide	17.2	2.0	mg/Kg	250.0		6.89	2.5-51.6	3.15	20	

Batch: B033386 **Prep:** Solid CN Distillation

Total Cyanide

Sample ID: Blank (B033386-BLK1) **Method:** SW-846 9012B **Prepped:** 10/03/2012 10:35
Source: **Analyzed:** 10/03/2012 13:40

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Cyanide, Total	ND	0.0050	mg/Kg							

Sample ID: LCS (B033386-BS1) **Method:** SW-846 9012B **Prepped:** 10/03/2012 10:35
Source: **Analyzed:** 10/03/2012 13:40

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Cyanide, Total	0.186	0.0050	mg/Kg	0.2000		93.1	90-110			

Sample ID: LCS Dup (B033386-BSD1) **Method:** SW-846 9012B **Prepped:** 10/03/2012 10:35
Source: **Analyzed:** 10/03/2012 13:40

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Cyanide, Total	0.182	0.0050	mg/Kg	0.2000		91.2	90-110	2.09	20	

Batch: B033417 **Prep:** SW846 3060A



Analytical QC Summary

Client: Environmental Restoration **Wet Chemistry - Quality Control**
Work Order: 12I0947
Project: Baycote RV Mishawaka, IN
Batch: B033417 **Prep:** SW846 3060A

Hexavalent Chromium

Sample ID: Blank (B033417-BLK1) **Method:** SW-846 7196A **Prepped:** 10/03/2012 14:20
Source: **Analyzed:** 10/04/2012 15:38

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium, Hexavalent	ND	20	mg/Kg							

Sample ID: LCS (B033417-BS1) **Method:** SW-846 7196A **Prepped:** 10/03/2012 14:20
Source: **Analyzed:** 10/04/2012 15:39

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium, Hexavalent	364	20	mg/Kg	400.0		91.0	80-120			

Sample ID: LCS Dup (B033417-BSD1) **Method:** SW-846 7196A **Prepped:** 10/03/2012 14:20
Source: **Analyzed:** 10/04/2012 15:41

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium, Hexavalent	357	20	mg/Kg	400.0		89.3	80-120	1.90	20	

Sample ID: Matrix Spike (B033417-MS1) **Method:** SW-846 7196A **Prepped:** 10/03/2012 14:20
Source: 12I0947-01 **Analyzed:** 10/04/2012 15:44

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium, Hexavalent	337	20	mg/Kg	400.0	15.1	80.4	75-125			

Sample ID: Matrix Spike (B033417-MS2) **Method:** SW-846 7196A **Prepped:** 10/03/2012 14:20
Source: 12I0947-01 **Analyzed:** 10/04/2012 15:47

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium, Hexavalent	26.4	39	mg/Kg	6977	15.1	0.163	75-125			S

Sample ID: Matrix Spike Dup (B033417-MSD1) **Method:** SW-846 7196A **Prepped:** 10/03/2012 14:20
Source: 12I0947-01 **Analyzed:** 10/04/2012 15:46

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Chromium, Hexavalent	323	20	mg/Kg	393.7	15.1	78.3	75-125	4.00	20	

**BAYCOTE METAL FINISHING
MISHIWAKA, INDIANA
DATA VALIDATION REPORT**

Date: October 5, 2012

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

Laboratory Project #: 12I0947

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

Weston Work Order #: 20405.012.001.1843.00

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for one solid sample collected for the Baycote Metal Finishing Site that was analyzed for the following parameters and U.S. Environmental Protection Agency (U.S. EPA) methods:

- Metals by SW-846 Methods 6010B, 6020A, and 7471A
- Toxicity Characteristic Leaching Procedure (TCLP) Metals by SW-846 Methods 1311, 6010B, and 7470A
- Hexavalent Chromium by SW-846 Method 7196A
- Total Cyanide by SW-846 Method 9012B
- Reactive Cyanide by SW-846 Method 7.3.3.2

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 Guidelines for Inorganic Superfund Data Review” dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

TOTAL METALS BY SW-846 METHODS 6010B, 6020A, AND 7471A

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-WS01-092612	12I0947-01	Solid	9/26/2012	9/28/2012 – 10/2/2012

2. Holding Times

The sample was 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

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits except for iron, chromium, and selenium. Iron and chromium were detected at much higher concentrations in the sample than in the blank and no qualifications were required. The detected selenium result was flagged “U” as not detected because it was detected at a similar concentration as the blank.

4. Laboratory Control Sample (LCS) Results

The LCS recoveries were within the laboratory-established quality control (QC) limits for target analytes.

5. MS and MSD Results

Microbac analyzed site-specific MS and MSDs for the metals analysis. The percent recoveries and relative percent difference (RPD) were within QC limits except for as follows.

Some of the metals could not be adequately recovered because the spike amount was much less (more than four times less) than the sample concentrations. No qualifications are required in these instances.

The exceptions were copper, silver, and nickel. These metal results were flagged “J” as estimated due to matrix interference.

6. Overall Assessment

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

TCLP METALS BY SW-846 METHODS 1311, 6020, AND 7470A

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-WS01-092612	12I0947-02	Solid	9/26/2012	10/1/2012

2. Holding Times

The sample was 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

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

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

5. MS and MSD Results

Microbac did not analyze site-specific MS and MSDs. No qualifications are required.

6. Overall Assessment

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

GENERAL CHEMISTRY PARAMETERS (Hexavalent Chromium by 7196A, Total Cyanide by 9012B, and Reactive Cyanide by 7.3.3.2)

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-WS01-092612	12I0947-01	Solid	9/26/2012	10/3/2012 – 10/4/2012

2. Holding Times

The holding times were acceptable for all analyses.

3. Method Blanks

Method blanks were analyzed with the total cyanide, reactive cyanide, and hexavalent chromium analyses. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

The percent recoveries and relative percent differences were within laboratory-established QC limits for all LCS and LCS duplicates analyzed.

6. MS and MSD Results

A site-specific MS and MSD were analyzed with the hexavalent chromium analysis only. The percent recovery for the MSD was within QC limits; however, the percent recovery for the MS was very low. In addition, the RPD was outside QC limits. The quantitation limits for the non-detected hexavalent chromium result was flagged “UJ” as estimated due to potential matrix interferences.

7. Overall Assessment

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

Data Validation Report
Baycote Metal Finishing Site
Microbac Laboratories, Inc.
Laboratory Project #: 12I0947

ATTACHMENT

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

Analytical Results

Date: Thursday, October 4, 2012

Client: Environmental Restoration
 Client Project: Baycote RV Mishawaka, IN
 Client Sample ID: BMF-W501-092612
 Sample Description:
 Matrix: Solid

Work Order/ID: 1210947-01
 Sampled: 09/26/2012 17:00
 Received: 09/27/2012 10:26

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
Method: SW-846 6010B			Analyst: SA				
Prep Method: SW846 3050B			Prep Date/Time: 09/28/2012 08:32				
Total Metals by ICP							
Aluminum	A	55	40		mg/Kg	4	09/28/2012 21:38
Beryllium	A	ND	0.20		mg/Kg	4	09/28/2012 21:38
Calcium	A	3200	100		mg/Kg	4	09/28/2012 21:38
Iron	A	4900	10	B	mg/Kg	4	09/28/2012 21:38
Magnesium	A	1200	100		mg/Kg	4	09/28/2012 21:38
Manganese	A	58	0.80		mg/Kg	4	09/28/2012 21:38
Potassium	A	290	100		mg/Kg	4	09/28/2012 21:38
Sodium	A	1400	100		mg/Kg	4	10/01/2012 11:26

Method: SW-846 6020A			Analyst: RPL				
Prep Method: SW846 3050B			Prep Date/Time: 09/28/2012 08:32				
Total Metals by ICP/MS							
Antimony	A	0.85	0.20		mg/Kg	20	09/28/2012 16:06
Arsenic	A	ND	0.50		mg/Kg	20	09/28/2012 16:06
Barium	A	3.7	0.20		mg/Kg	20	09/28/2012 16:06
Cadmium	A	72	0.20		mg/Kg	20	09/28/2012 16:06
Chromium	A	2000	10	B	mg/Kg	1000	10/02/2012 17:38
Cobalt	A	150	0.20		mg/Kg	20	09/28/2012 16:06
Copper	A	22 J	0.50		mg/Kg	20	09/28/2012 16:06
Lead	A	9.9	0.38		mg/Kg	20	09/28/2012 16:06
Nickel	A	110 J	0.50		mg/Kg	20	09/28/2012 16:06
Selenium	A	0.58 J	0.32	B	mg/Kg	20	09/28/2012 16:06
Silver	A	13 J	0.50		mg/Kg	20	09/28/2012 16:06
Thallium	A	0.24	0.20		mg/Kg	20	09/28/2012 16:06
Vanadium	A	ND	20		mg/Kg	1000	10/02/2012 17:38
Zinc	A	16000	50		mg/Kg	1000	10/02/2012 17:38

Method: SW-846 7471A				Analyst: RPL		
Prep Method: SW-846 7471				Prep Date/Time: 09/28/2012 08:20		
Total Mercury by CVAA						
Mercury	A	0.048	0.042	mg/Kg	1	09/28/2012 14:23

Method: SW-846 9012B					Analyst: AGRIE		
Prep Method: Solid CN Distillation					Prep Date/Time: 10/03/2012 10:35		
Total Cyanide							
Cyanide, Total	A	29	5.0	mg/Kg	10	10/03/2012 13:24	

Method: SW-846 7196A					Analyst: AGRIE		
Prep Method: SW846 3060A					Prep Date/Time: 10/03/2012 14:20		
Hexavalent Chromium							
Chromium, Hexavalent	A	ND	1.5	20	mg/Kg	50	10/04/2012 15:43

28
10/5/12

Analytical Results

Date: Thursday, October 4, 2012

Client: Environmental Restoration
 Client Project: Baycote RV Mishawaka, IN
 Client Sample ID: BMF-W501-092612-TCLP
 Sample Description:
 Matrix: Solid

Work Order/ID: 1210947-02
 Sampled: 09/26/2012 17:00
 Received: 09/27/2012 10:26

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
Method: 1311/7470A Prep Method: SW-846 1311/SW-846 7470 Analyst: RPL Prep Date/Time: 10/01/2012 10:00							
TCLP Mercury by CVAA							
Mercury	A	ND	0.00100		mg/L	1	10/01/2012 14:01
Method: 1311/6010B Prep Method: SW-846 1311/SW846 3005A Analyst: SA Prep Date/Time: 10/01/2012 09:50							
TCLP Metals by ICP							
Arsenic	A	0.0330	0.0100		mg/L	1	10/01/2012 16:52
Barium	A	ND	0.500		mg/L	1	10/01/2012 16:52
Cadmium	A	6.66	0.00200		mg/L	1	10/01/2012 16:52
Chromium	A	31.2	0.00300		mg/L	1	10/01/2012 16:52
Lead	A	0.0125	0.00750		mg/L	1	10/01/2012 16:52
Selenium	A	ND	0.0300		mg/L	1	10/01/2012 16:52
Silver	A	ND	0.0100		mg/L	1	10/01/2012 16:52
Method: Chapter 7/9014 Prep Method: Solid Reactive CN Distillation Analyst: AGRIE Prep Date/Time: 10/01/2012 10:30							
Reactive Cyanide							
Reactive Cyanide	A	ND	2.0		mg/Kg	1	10/03/2012 8:48



FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

B = Detected in the associated method Blank at a concentration above the routine RL
b = Detected in the associated method Blank at a concentration greater than 2.2 times the MDL
b* = Detected in the associated method Blank at a concentration greater than half the RL
CFU = Colony forming units
D = Dilution performed on sample
DF = Dilution Factor
g = Gram
E = Value above quantitation range
H = Analyte was prepared and/or analyzed outside of the analytical method holding time
I = Matrix Interference
J = Analyte concentration detected between RL and MDL (Metals / Organics)
LOD = Limit of Detection
m3 = Meters cubed
MDL = Method Detection Limit
mg/Kg = Milligrams per Kilogram (ppm)
mg/L = Milligrams per Liter (ppm)
NA = Not Analyzed
ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)
NR = Not Recovered
R = RPD outside accepted recovery limits
RL = Reporting Limit
S = Spike recovery outside recovery limits
Surr = Surrogate
U = Undetected
> = Greater than
< = Less than
% = Percent

ANALYTE TYPES: (AT)

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

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank	ICSA = Interference Check Standard "A"
DUP = Method Duplicate	ICSAB = Interference Check Standard "AB"
BS = Method Blank Spike	BSD = Method Blank Spike Duplicate
MS = Matrix Spike	MSD = Matrix Spike Duplicate
ICB = Initial Calibration Blank	ICV = Initial Calibration Verification
CCB = Continuing Calibration Blank	CCV = Continuing Calibration Verification
CRL = Client Required Reporting Limit	OPR = Ongoing Precision and Recovery Standard
PDS = Post Digestion Spike	SD = Serial Dilution
QCS = Quality Control Standard	

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.

- ^a The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)
- ^b The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)
- ^c Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)
- ^d Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)
- ^e Indiana DEM approved support laboratory for solid waste and wastewater analyses
- ^f Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)
- ^f Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)
- ^g Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)
- ^h Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)
- ⁱ North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations (certificate #597)
- ^j Pennsylvania Department of Environmental Protection (Registration No.: 68-04863)
- ^j Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)

November 01, 2012

Mr. John Behrens
Environmental Restoration
1666 Fabick Drive
Fenton, MO 63026

RE: Project: Baycote Metal Finishings
Pace Project No.: 5071213

Dear Mr. Behrens:

Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2012.

The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kenneth Hunt

kenneth.hunt@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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Columbus, OH 43215

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Pace Analytical Services, Inc.

7726 Moller Road

Indianapolis, IN 46268

(317)875-5894

CERTIFICATIONS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268

Illinois Certification #: 200074

Indiana Certification #: C-49-06

Kansas Certification #: E-10247

Kentucky Certification #: 0042

Louisiana/NELAC Certification #: 04076

Ohio VAP Certification #: CL0065

Pennsylvania Certification #: 68-04991

West Virginia Certification #: 330

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

A2LA Certification #: 2456.01

Arkansas Certification #: 12-019-0

Illinois Certification #: 002885

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-12-3

Utah Certification #: KS000212012-2

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5071213001	BMF-S01-102212	Solid	10/22/12 11:50	10/24/12 07:35
5071213002	BMF-S02-102212	Solid	10/22/12 12:00	10/24/12 07:35
5071213003	BMF-S03-102212	Solid	10/22/12 13:50	10/24/12 07:35
5071213004	BMF-S03-102212D	Solid	10/22/12 14:00	10/24/12 07:35
5071213005	BMF-S04-102212	Solid	10/22/12 14:10	10/24/12 07:35
5071213006	BMF-S05-102212	Solid	10/22/12 14:20	10/24/12 07:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5071213001	BMF-S01-102212	EPA 8082	DMT	8	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		EPA 8270	KES	18	PASI-I
		EPA 8260	RSW	13	PASI-I
		ASTM D2974-87	DAE	1	PASI-I
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	WDB	1	PASI-I
5071213002	BMF-S02-102212	EPA 8082	DMT	8	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		EPA 8270	KES	18	PASI-I
		EPA 8260	RSW	13	PASI-I
		ASTM D2974-87	DAE	1	PASI-I
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	WDB	1	PASI-I
5071213003	BMF-S03-102212	EPA 8082	DMT	8	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		EPA 8270	KES	18	PASI-I
		EPA 8260	RSW	13	PASI-I
		ASTM D2974-87	DAE	1	PASI-I
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	WDB	1	PASI-I
5071213004	BMF-S03-102212D	EPA 8082	DMT	8	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7470	LLB	1	PASI-I

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5071213005	BMF-S04-102212	EPA 7471	LLB	1	PASI-I
		EPA 8270	KES	18	PASI-I
		EPA 8260	RSW	13	PASI-I
		ASTM D2974-87	DAE	1	PASI-I
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	WDB	1	PASI-I
		EPA 8082	DMT	8	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		EPA 8270	KES	18	PASI-I
		EPA 8260	RSW	13	PASI-I
		ASTM D2974-87	DAE	1	PASI-I
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
5071213006	BMF-S05-102212	EPA 9012	WDB	1	PASI-I
		EPA 8082	DMT	8	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 6010	FRW	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		EPA 8270	KES	18	PASI-I
		EPA 8260	RSW	13	PASI-I
		ASTM D2974-87	DAE	1	PASI-I
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	WDB	1	PASI-I

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S01-102212 **Lab ID: 5071213001** Collected: 10/22/12 11:50 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	69 %.		32-105	1	10/25/12 10:03	10/25/12 17:55	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.7	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-38-2	
Barium	59.5	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-39-3	
Cadmium	17.8	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-43-9	
Chromium	115	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-47-3	
Lead	18.3	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7439-92-1	
Selenium	ND	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7782-49-2	
Silver	ND	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:29	7440-39-3	
Cadmium	0.087	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:29	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:29	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:18	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.30	mg/kg	0.26	1	10/29/12 11:15	10/30/12 14:36	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S01-102212 **Lab ID: 5071213001** Collected: 10/22/12 11:50 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 14:13		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:13	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:13	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:13	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:13	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:13	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	83 %.		33-108	1	10/29/12 14:50	10/30/12 14:13	4165-60-0	
2-Fluorobiphenyl (S)	65 %.		34-106	1	10/29/12 14:50	10/30/12 14:13	321-60-8	
p-Terphenyl-d14 (S)	99 %.		31-122	1	10/29/12 14:50	10/30/12 14:13	1718-51-0	
Phenol-d5 (S)	12 %.		10-56	1	10/29/12 14:50	10/30/12 14:13	4165-62-2	
2-Fluorophenol (S)	23 %.		10-74	1	10/29/12 14:50	10/30/12 14:13	367-12-4	
2,4,6-Tribromophenol (S)	93 %.		32-124	1	10/29/12 14:50	10/30/12 14:13	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 09:41	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 09:41	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 09:41	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 09:41	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 09:41	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 09:41	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 09:41	75-35-4	
Tetrachloroethene	91.2 ug/L		50.0	1		10/27/12 09:41	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 09:41	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 09:41	75-01-4	
Surrogates								
Toluene-d8 (S)	99 %.		81-114	1		10/27/12 09:41	2037-26-5	
4-Bromofluorobenzene (S)	101 %.		72-125	1		10/27/12 09:41	460-00-4	
Dibromofluoromethane (S)	96 %.		83-123	1		10/27/12 09:41	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	21.1 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		12.7	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:18		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	16.3 mg/kg		0.63	1	10/26/12 12:04	10/26/12 13:47	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S02-102212 **Lab ID: 5071213002** Collected: 10/22/12 12:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	43 %		32-105	1	10/25/12 10:03	10/25/12 18:01	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	9.9	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-38-2	
Barium	73.4	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-39-3	
Cadmium	35.3	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-43-9	
Chromium	411	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-47-3	
Lead	24.5	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7439-92-1	
Selenium	2.7	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7782-49-2	
Silver	12.5	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:31	7440-39-3	
Cadmium	0.17	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:31	7440-43-9	
Chromium	0.18	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:31	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:20	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.30	1	10/29/12 11:15	10/30/12 14:38	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S02-102212 **Lab ID: 5071213002** Collected: 10/22/12 12:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/31/12 13:27	10/31/12 18:49		
Nitrobenzene	ND ug/L		100	1	10/31/12 13:27	10/31/12 18:49	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/31/12 13:27	10/31/12 18:49	87-86-5	
Pyridine	ND ug/L		100	1	10/31/12 13:27	10/31/12 18:49	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/31/12 13:27	10/31/12 18:49	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/31/12 13:27	10/31/12 18:49	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	77 %.		33-108	1	10/31/12 13:27	10/31/12 18:49	4165-60-0	
2-Fluorobiphenyl (S)	67 %.		34-106	1	10/31/12 13:27	10/31/12 18:49	321-60-8	
p-Terphenyl-d14 (S)	89 %.		31-122	1	10/31/12 13:27	10/31/12 18:49	1718-51-0	
Phenol-d5 (S)	13 %.		10-56	1	10/31/12 13:27	10/31/12 18:49	4165-62-2	
2-Fluorophenol (S)	23 %.		10-74	1	10/31/12 13:27	10/31/12 18:49	367-12-4	
2,4,6-Tribromophenol (S)	79 %.		32-124	1	10/31/12 13:27	10/31/12 18:49	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 10:57	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 10:57	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 10:57	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 10:57	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 10:57	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 10:57	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 10:57	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 10:57	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 10:57	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 10:57	75-01-4	
Surrogates								
Toluene-d8 (S)	98 %.		81-114	1		10/27/12 10:57	2037-26-5	
4-Bromofluorobenzene (S)	97 %.		72-125	1		10/27/12 10:57	460-00-4	
Dibromofluoromethane (S)	98 %.		83-123	1		10/27/12 10:57	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	30.0 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		14.3	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:18		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	20.3 mg/kg		0.71	1	10/26/12 12:04	10/26/12 13:48	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S03-102212 **Lab ID: 5071213003** Collected: 10/22/12 13:50 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	53469-21-9	
PCB-1248 (Aroclor 1248)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		123	1	10/25/12 10:03	10/25/12 18:07	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	64 %.		32-105	1	10/25/12 10:03	10/25/12 18:07	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.2 mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7440-38-2	
Barium	31.4 mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7440-39-3	
Cadmium	ND mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7440-43-9	
Chromium	12.9 mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7440-47-3	
Lead	8.1 mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7439-92-1	
Selenium	ND mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7782-49-2	
Silver	ND mg/kg		2.2	1	10/25/12 09:50	10/26/12 13:54	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:33	7440-38-2	
Barium	ND mg/L		5.0	1	10/30/12 06:00	10/30/12 13:33	7440-39-3	
Cadmium	ND mg/L		0.050	1	10/30/12 06:00	10/30/12 13:33	7440-43-9	
Chromium	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:33	7440-47-3	
Lead	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:33	7439-92-1	
Selenium	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:33	7782-49-2	
Silver	ND mg/L		0.50	1	10/30/12 06:00	10/30/12 13:33	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND mg/L		0.0020	1	10/30/12 10:10	10/31/12 14:22	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND mg/kg		0.26	1	10/29/12 11:15	10/30/12 14:40	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	106-46-7	
2,4-Dinitrotoluene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	121-14-2	
Hexachloro-1,3-butadiene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	87-68-3	
Hexachlorobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	118-74-1	
Hexachloroethane	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	67-72-1	
2-Methylphenol(o-Cresol)	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S03-102212 **Lab ID: 5071213003** Collected: 10/22/12 13:50 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 14:55		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:55	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:55	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	86 %.		33-108	1	10/29/12 14:50	10/30/12 14:55	4165-60-0	
2-Fluorobiphenyl (S)	72 %.		34-106	1	10/29/12 14:50	10/30/12 14:55	321-60-8	
p-Terphenyl-d14 (S)	86 %.		31-122	1	10/29/12 14:50	10/30/12 14:55	1718-51-0	
Phenol-d5 (S)	13 %.		10-56	1	10/29/12 14:50	10/30/12 14:55	4165-62-2	
2-Fluorophenol (S)	22 %.		10-74	1	10/29/12 14:50	10/30/12 14:55	367-12-4	
2,4,6-Tribromophenol (S)	86 %.		32-124	1	10/29/12 14:50	10/30/12 14:55	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 11:35	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 11:35	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 11:35	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 11:35	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 11:35	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 11:35	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 11:35	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 11:35	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 11:35	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 11:35	75-01-4	
Surrogates								
Toluene-d8 (S)	99 %.		81-114	1		10/27/12 11:35	2037-26-5	
4-Bromofluorobenzene (S)	97 %.		72-125	1		10/27/12 11:35	460-00-4	
Dibromofluoromethane (S)	98 %.		83-123	1		10/27/12 11:35	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	18.4 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		12.3	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:19		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	ND mg/kg		0.61	1	10/26/12 12:04	10/26/12 13:49	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S03-102212D Lab ID: 5071213004 Collected: 10/22/12 14:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	59 %		32-105	1	10/25/12 10:03	10/25/12 18:13	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.4	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-38-2	
Barium	38.9	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-39-3	
Cadmium	2.8	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-43-9	
Chromium	29.0	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-47-3	
Lead	9.7	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7439-92-1	
Selenium	ND	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7782-49-2	
Silver	ND	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:41	7440-39-3	
Cadmium	ND	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:41	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:41	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:24	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.27	1	10/29/12 11:15	10/30/12 14:43	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S03-102212D **Lab ID: 5071213004** Collected: 10/22/12 14:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 15:17		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:17	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:17	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:17	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:17	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:17	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	85 %.		33-108	1	10/29/12 14:50	10/30/12 15:17	4165-60-0	
2-Fluorobiphenyl (S)	69 %.		34-106	1	10/29/12 14:50	10/30/12 15:17	321-60-8	
p-Terphenyl-d14 (S)	92 %.		31-122	1	10/29/12 14:50	10/30/12 15:17	1718-51-0	
Phenol-d5 (S)	13 %.		10-56	1	10/29/12 14:50	10/30/12 15:17	4165-62-2	
2-Fluorophenol (S)	23 %.		10-74	1	10/29/12 14:50	10/30/12 15:17	367-12-4	
2,4,6-Tribromophenol (S)	92 %.		32-124	1	10/29/12 14:50	10/30/12 15:17	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 12:13	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 12:13	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 12:13	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 12:13	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 12:13	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 12:13	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 12:13	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 12:13	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 12:13	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 12:13	75-01-4	
Surrogates								
Toluene-d8 (S)	98 %.		81-114	1		10/27/12 12:13	2037-26-5	
4-Bromofluorobenzene (S)	98 %.		72-125	1		10/27/12 12:13	460-00-4	
Dibromofluoromethane (S)	98 %.		83-123	1		10/27/12 12:13	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	21.4 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		12.7	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:21		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	0.72 mg/kg		0.64	1	10/26/12 12:04	10/26/12 13:50	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S04-102212 **Lab ID: 5071213005** Collected: 10/22/12 14:10 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	53469-21-9	
PCB-1248 (Aroclor 1248)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		57.1	1	10/29/12 11:28	10/29/12 21:24	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	75 %.		32-105	1	10/29/12 11:28	10/29/12 21:24	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	12.7 mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7440-38-2	
Barium	88.7 mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7440-39-3	
Cadmium	6.0 mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7440-43-9	
Chromium	28.4 mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7440-47-3	
Lead	23.2 mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7439-92-1	
Selenium	3.9 mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7782-49-2	
Silver	ND mg/kg		3.2	1	10/25/12 09:50	10/26/12 13:59	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:43	7440-38-2	
Barium	ND mg/L		5.0	1	10/30/12 06:00	10/30/12 13:43	7440-39-3	
Cadmium	ND mg/L		0.050	1	10/30/12 06:00	10/30/12 13:43	7440-43-9	
Chromium	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:43	7440-47-3	
Lead	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:43	7439-92-1	
Selenium	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:43	7782-49-2	
Silver	ND mg/L		0.50	1	10/30/12 06:00	10/30/12 13:43	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND mg/L		0.0020	1	10/30/12 10:10	10/31/12 14:26	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND mg/kg		0.34	1	10/29/12 11:15	10/30/12 12:48	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	106-46-7	
2,4-Dinitrotoluene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	121-14-2	
Hexachloro-1,3-butadiene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	87-68-3	
Hexachlorobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	118-74-1	
Hexachloroethane	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	67-72-1	
2-Methylphenol(o-Cresol)	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S04-102212 Lab ID: 5071213005 Collected: 10/22/12 14:10 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 15:38		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:38	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:38	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	85 %.		33-108	1	10/29/12 14:50	10/30/12 15:38	4165-60-0	
2-Fluorobiphenyl (S)	71 %.		34-106	1	10/29/12 14:50	10/30/12 15:38	321-60-8	
p-Terphenyl-d14 (S)	103 %.		31-122	1	10/29/12 14:50	10/30/12 15:38	1718-51-0	
Phenol-d5 (S)	16 %.		10-56	1	10/29/12 14:50	10/30/12 15:38	4165-62-2	
2-Fluorophenol (S)	28 %.		10-74	1	10/29/12 14:50	10/30/12 15:38	367-12-4	
2,4,6-Tribromophenol (S)	105 %.		32-124	1	10/29/12 14:50	10/30/12 15:38	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 12:51	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 12:51	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 12:51	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 12:51	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 12:51	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 12:51	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 12:51	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 12:51	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 12:51	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 12:51	75-01-4	
Surrogates								
Toluene-d8 (S)	98 %.		81-114	1		10/27/12 12:51	2037-26-5	
4-Bromofluorobenzene (S)	98 %.		72-125	1		10/27/12 12:51	460-00-4	
Dibromofluoromethane (S)	97 %.		83-123	1		10/27/12 12:51	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	38.7 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		16.3	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:22		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	ND mg/kg		0.82	1	10/26/12 12:04	10/26/12 13:51	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S05-102212 **Lab ID: 5071213006** Collected: 10/22/12 14:20 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	12674-11-2	
PCB-1221 (Aroclor 1221)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	11104-28-2	
PCB-1232 (Aroclor 1232)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	11141-16-5	
PCB-1242 (Aroclor 1242)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	53469-21-9	
PCB-1248 (Aroclor 1248)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	12672-29-6	
PCB-1254 (Aroclor 1254)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	11097-69-1	
PCB-1260 (Aroclor 1260)	ND ug/kg		151	1	10/25/12 10:03	10/25/12 18:39	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	51 %.		32-105	1	10/25/12 10:03	10/25/12 18:39	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	14.6 mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7440-38-2	
Barium	85.7 mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7440-39-3	
Cadmium	5.8 mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7440-43-9	
Chromium	34.3 mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7440-47-3	
Lead	23.2 mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7439-92-1	
Selenium	3.6 mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7782-49-2	
Silver	ND mg/kg		2.8	1	10/25/12 09:50	10/26/12 14:14	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:51	7440-38-2	
Barium	ND mg/L		5.0	1	10/30/12 06:00	10/30/12 13:51	7440-39-3	
Cadmium	ND mg/L		0.050	1	10/30/12 06:00	10/30/12 13:51	7440-43-9	
Chromium	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:51	7440-47-3	
Lead	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:51	7439-92-1	
Selenium	ND mg/L		0.10	1	10/30/12 06:00	10/30/12 13:51	7782-49-2	
Silver	ND mg/L		0.50	1	10/30/12 06:00	10/30/12 13:51	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND mg/L		0.0020	1	10/30/12 10:10	10/31/12 14:30	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND mg/kg		0.32	1	10/29/12 11:15	10/30/12 12:54	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	106-46-7	
2,4-Dinitrotoluene	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	121-14-2	
Hexachloro-1,3-butadiene	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	87-68-3	
Hexachlorobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	118-74-1	
Hexachloroethane	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	67-72-1	
2-Methylphenol(o-Cresol)	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S05-102212 **Lab ID: 5071213006** Collected: 10/22/12 14:20 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 16:20		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 16:20	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 16:20	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	76 %.		33-108	1	10/29/12 14:50	10/30/12 16:20	4165-60-0	
2-Fluorobiphenyl (S)	66 %.		34-106	1	10/29/12 14:50	10/30/12 16:20	321-60-8	
p-Terphenyl-d14 (S)	87 %.		31-122	1	10/29/12 14:50	10/30/12 16:20	1718-51-0	
Phenol-d5 (S)	13 %.		10-56	1	10/29/12 14:50	10/30/12 16:20	4165-62-2	
2-Fluorophenol (S)	23 %.		10-74	1	10/29/12 14:50	10/30/12 16:20	367-12-4	
2,4,6-Tribromophenol (S)	92 %.		32-124	1	10/29/12 14:50	10/30/12 16:20	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 04:57	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 04:57	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 04:57	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 04:57	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 04:57	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 04:57	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 04:57	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 04:57	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 04:57	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 04:57	75-01-4	
Surrogates								
Toluene-d8 (S)	94 %.		81-114	1		10/27/12 04:57	2037-26-5	
4-Bromofluorobenzene (S)	99 %.		72-125	1		10/27/12 04:57	460-00-4	
Dibromofluoromethane (S)	97 %.		83-123	1		10/27/12 04:57	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	33.9 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		15.1	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:23		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	1.4 mg/kg		0.76	1	10/26/12 12:04	10/26/12 13:57	57-12-5	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings
Pace Project No.: 5071213

QC Batch: MERP/4215 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

METHOD BLANK: 822401 Matrix: Water
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	10/31/12 13:59	

LABORATORY CONTROL SAMPLE & LCSD: 822402			822403							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Mercury	ma/L	.015	0.016	0.016	109	109	80-120		20	

MATRIX SPIKE SAMPLE: 822404		5071123003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	ND	.015	0.016	108	75-125	

MATRIX SPIKE SAMPLE: 822405		5071194005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	ND	.015	0.014	90	75-125	

MATRIX SPIKE SAMPLE: 822406		5071213005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	ND	.015	0.016	107	75-125	

MATRIX SPIKE SAMPLE: 822407		5071264001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	ND	.015	0.015	101	75-125	

MATRIX SPIKE SAMPLE: 822408		5071332001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	ND	.015	0.016	107	75-125	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: MERP/4218 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

METHOD BLANK: 822422 Matrix: Solid
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.20	10/30/12 14:20	

LABORATORY CONTROL SAMPLE: 822423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.53	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 822424 822425

Parameter	Units	5071213005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.8	.82	0.99	0.94	104	96	75-125	5	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 822426 822427

Parameter	Units	5071268003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	<0.12	.63	.61	0.66	0.67	102	108	75-125	2	20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: MPRP/10079 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

METHOD BLANK: 820847 Matrix: Solid
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	2.0	10/26/12 13:44	
Barium	mg/kg	ND	2.0	10/26/12 13:44	
Cadmium	mg/kg	ND	2.0	10/26/12 13:44	
Chromium	mg/kg	ND	2.0	10/26/12 13:44	
Lead	mg/kg	ND	2.0	10/26/12 13:44	
Selenium	mg/kg	ND	2.0	10/26/12 13:44	
Silver	mg/kg	ND	2.0	10/26/12 13:44	

LABORATORY CONTROL SAMPLE: 820848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	51.8	104	80-120	
Barium	mg/kg	50	52.5	105	80-120	
Cadmium	mg/kg	50	51.2	102	80-120	
Chromium	mg/kg	50	50.6	101	80-120	
Lead	mg/kg	50	50.6	101	80-120	
Selenium	mg/kg	50	51.6	103	80-120	
Silver	mg/kg	25	25.4	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 820849 820850

Parameter	Units	5071213005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	12.7	72.8	76.7	81.0	84.9	94	94	75-125	5	20	
Barium	mg/kg	88.7	72.8	76.7	161	164	99	98	75-125	2	20	
Cadmium	mg/kg	6.0	72.8	76.7	73.2	77.8	92	94	75-125	6	20	
Chromium	mg/kg	28.4	72.8	76.7	94.1	96.8	90	89	75-125	3	20	
Lead	mg/kg	23.2	72.8	76.7	81.9	87.3	81	84	75-125	6	20	
Selenium	mg/kg	3.9	72.8	76.7	71.8	76.9	93	95	75-125	7	20	
Silver	mg/kg	ND	36.4	38.4	31.8	33.7	87	87	75-125	6	20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: MPRP/10105

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET TCLP

Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

METHOD BLANK: 822846

Matrix: Water

Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	10/30/12 13:19	
Barium	mg/L	ND	5.0	10/30/12 13:19	
Cadmium	mg/L	ND	0.050	10/30/12 13:19	
Chromium	mg/L	ND	0.10	10/30/12 13:19	
Lead	mg/L	ND	0.10	10/30/12 13:19	
Selenium	mg/L	ND	0.10	10/30/12 13:19	
Silver	mg/L	ND	0.50	10/30/12 13:19	

LABORATORY CONTROL SAMPLE & LCSD: 822847

822848

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Arsenic	mg/L	10	9.5	9.7	95	97	80-120	3	20	
Barium	mg/L	10	9.6	9.7	96	97	80-120	2	20	
Cadmium	mg/L	10	9.5	9.7	95	97	80-120	2	20	
Chromium	mg/L	10	9.5	9.7	95	97	80-120	2	20	
Lead	mg/L	10	9.2	9.5	92	95	80-120	3	20	
Selenium	mg/L	10	9.8	10.1	98	101	80-120	3	20	
Silver	mg/L	5	4.6	4.8	93	96	80-120	4	20	

MATRIX SPIKE SAMPLE: 822849

Parameter	Units	5071194005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	10	9.7	96	50-150	
Barium	mg/L	ND	10	10	98	50-150	
Cadmium	mg/L	0.053	10	9.7	97	50-150	
Chromium	mg/L	15.7	10	23.8	81	50-150	
Lead	mg/L	ND	10	9.4	94	50-150	
Selenium	mg/L	ND	10	10	99	50-150	
Silver	mg/L	ND	5	4.9	91	50-150	

MATRIX SPIKE SAMPLE: 822850

Parameter	Units	5071213005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	10	9.7	97	50-150	
Barium	mg/L	ND	10	10	97	50-150	
Cadmium	mg/L	ND	10	9.7	97	50-150	
Chromium	mg/L	ND	10	9.7	97	50-150	
Lead	mg/L	ND	10	9.4	94	50-150	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:		822850					
Parameter	Units	5071213005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Selenium	mg/L	ND	10	9.9	99	50-150	
Silver	mg/L	ND	5	4.8	96	50-150	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: MSV/47287

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV TCLP

Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005

METHOD BLANK: 822124

Matrix: Water

Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	10/27/12 02:44	
1,2-Dichloroethane	ug/L	ND	50.0	10/27/12 02:44	
2-Butanone (MEK)	ug/L	ND	1000	10/27/12 02:44	
Benzene	ug/L	ND	50.0	10/27/12 02:44	
Carbon tetrachloride	ug/L	ND	50.0	10/27/12 02:44	
Chlorobenzene	ug/L	ND	50.0	10/27/12 02:44	
Chloroform	ug/L	ND	50.0	10/27/12 02:44	
Tetrachloroethene	ug/L	ND	50.0	10/27/12 02:44	
Trichloroethene	ug/L	ND	50.0	10/27/12 02:44	
Vinyl chloride	ug/L	ND	20.0	10/27/12 02:44	
4-Bromofluorobenzene (S)	%	99	72-125	10/27/12 02:44	
Dibromofluoromethane (S)	%	99	83-123	10/27/12 02:44	
Toluene-d8 (S)	%	98	81-114	10/27/12 02:44	

LABORATORY CONTROL SAMPLE: 822125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	500	529	106	75-145	
1,2-Dichloroethane	ug/L	500	559	112	71-127	
2-Butanone (MEK)	ug/L	2500	2330	93	42-177	
Benzene	ug/L	500	484	97	76-123	
Carbon tetrachloride	ug/L	500	557	111	65-125	
Chlorobenzene	ug/L	500	528	106	78-120	
Chloroform	ug/L	500	534	107	73-122	
Tetrachloroethene	ug/L	500	543	109	57-125	
Trichloroethene	ug/L	500	530	106	77-122	
Vinyl chloride	ug/L	500	407	81	61-146	
4-Bromofluorobenzene (S)	%			95	72-125	
Dibromofluoromethane (S)	%			100	83-123	
Toluene-d8 (S)	%			99	81-114	

MATRIX SPIKE SAMPLE: 822126

Parameter	Units	5071194005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	500	520	104	54-152	
1,2-Dichloroethane	ug/L	ND	500	563	113	42-139	
2-Butanone (MEK)	ug/L	ND	2500	2270	91	43-142	
Benzene	ug/L	ND	500	451	90	52-134	
Carbon tetrachloride	ug/L	ND	500	515	103	26-136	
Chlorobenzene	ug/L	ND	500	397	79	33-136	

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QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:		822126					
Parameter	Units	5071194005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	500	530	106	50-134	
Tetrachloroethene	ug/L	ND	500	380	76	30-124	
Trichloroethene	ug/L	ND	500	443	89	44-130	
Vinyl chloride	ug/L	ND	500	426	85	45-159	
4-Bromofluorobenzene (S)	%				94	72-125	
Dibromofluoromethane (S)	%				100	83-123	
Toluene-d8 (S)	%				100	81-114	

MATRIX SPIKE SAMPLE:		822127					
Parameter	Units	5071213001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	500	486	97	54-152	
1,2-Dichloroethane	ug/L	ND	500	531	106	42-139	
2-Butanone (MEK)	ug/L	ND	2500	2250	90	43-142	
Benzene	ug/L	ND	500	401	80	52-134	
Carbon tetrachloride	ug/L	ND	500	440	88	26-136	
Chlorobenzene	ug/L	ND	500	302	60	33-136	
Chloroform	ug/L	ND	500	489	98	50-134	
Tetrachloroethene	ug/L	91.2	500	304	43	30-124	
Trichloroethene	ug/L	ND	500	368	74	44-130	
Vinyl chloride	ug/L	ND	500	404	81	45-159	
4-Bromofluorobenzene (S)	%				94	72-125	
Dibromofluoromethane (S)	%				101	83-123	
Toluene-d8 (S)	%				98	81-114	

MATRIX SPIKE SAMPLE:		822128					
Parameter	Units	5071213005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	500	478	96	54-152	
1,2-Dichloroethane	ug/L	ND	500	477	95	42-139	
2-Butanone (MEK)	ug/L	ND	2500	1780	71	43-142	
Benzene	ug/L	ND	500	430	86	52-134	
Carbon tetrachloride	ug/L	ND	500	499	100	26-136	
Chlorobenzene	ug/L	ND	500	453	91	33-136	
Chloroform	ug/L	ND	500	479	96	50-134	
Tetrachloroethene	ug/L	ND	500	481	96	30-124	
Trichloroethene	ug/L	ND	500	467	93	44-130	
Vinyl chloride	ug/L	ND	500	371	74	45-159	
4-Bromofluorobenzene (S)	%				95	72-125	
Dibromofluoromethane (S)	%				99	83-123	
Toluene-d8 (S)	%				101	81-114	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: MSV/47288

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV TCLP

Associated Lab Samples: 5071213006

METHOD BLANK: 822130

Matrix: Water

Associated Lab Samples: 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	10/27/12 03:03	
1,2-Dichloroethane	ug/L	ND	50.0	10/27/12 03:03	
2-Butanone (MEK)	ug/L	ND	1000	10/27/12 03:03	
Benzene	ug/L	ND	50.0	10/27/12 03:03	
Carbon tetrachloride	ug/L	ND	50.0	10/27/12 03:03	
Chlorobenzene	ug/L	ND	50.0	10/27/12 03:03	
Chloroform	ug/L	ND	50.0	10/27/12 03:03	
Tetrachloroethene	ug/L	ND	50.0	10/27/12 03:03	
Trichloroethene	ug/L	ND	50.0	10/27/12 03:03	
Vinyl chloride	ug/L	ND	20.0	10/27/12 03:03	
4-Bromofluorobenzene (S)	%	101	72-125	10/27/12 03:03	
Dibromofluoromethane (S)	%	98	83-123	10/27/12 03:03	
Toluene-d8 (S)	%	95	81-114	10/27/12 03:03	

LABORATORY CONTROL SAMPLE: 822131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	500	412	82	75-145	
1,2-Dichloroethane	ug/L	500	439	88	71-127	
2-Butanone (MEK)	ug/L	2500	1970	79	42-177	
Benzene	ug/L	500	400	80	76-123	
Carbon tetrachloride	ug/L	500	428	86	65-125	
Chlorobenzene	ug/L	500	426	85	78-120	
Chloroform	ug/L	500	425	85	73-122	
Tetrachloroethene	ug/L	500	401	80	57-125	
Trichloroethene	ug/L	500	422	84	77-122	
Vinyl chloride	ug/L	500	340	68	61-146	
4-Bromofluorobenzene (S)	%			98	72-125	
Dibromofluoromethane (S)	%			98	83-123	
Toluene-d8 (S)	%			99	81-114	

MATRIX SPIKE SAMPLE: 822132

Parameter	Units	5071213006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	500	475	95	54-152	
1,2-Dichloroethane	ug/L	ND	500	502	100	42-139	
2-Butanone (MEK)	ug/L	ND	2500	2290	92	43-142	
Benzene	ug/L	ND	500	423	85	52-134	
Carbon tetrachloride	ug/L	ND	500	437	87	26-136	
Chlorobenzene	ug/L	ND	500	365	73	33-136	

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QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:		822132					
Parameter	Units	5071213006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	500	479	96	50-134	
Tetrachloroethene	ug/L	ND	500	316	63	30-124	
Trichloroethene	ug/L	ND	500	411	82	44-130	
Vinyl chloride	ug/L	ND	500	417	83	45-159	
4-Bromofluorobenzene (S)	%.				98	72-125	
Dibromofluoromethane (S)	%.				101	83-123	
Toluene-d8 (S)	%.				98	81-114	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: OEXT/31121 Analysis Method: EPA 8082
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213006

METHOD BLANK: 820860 Matrix: Solid
Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	35.0	10/25/12 17:42	
PCB-1221 (Aroclor 1221)	ug/kg	ND	35.0	10/25/12 17:42	
PCB-1232 (Aroclor 1232)	ug/kg	ND	35.0	10/25/12 17:42	
PCB-1242 (Aroclor 1242)	ug/kg	ND	35.0	10/25/12 17:42	
PCB-1248 (Aroclor 1248)	ug/kg	ND	35.0	10/25/12 17:42	
PCB-1254 (Aroclor 1254)	ug/kg	ND	35.0	10/25/12 17:42	
PCB-1260 (Aroclor 1260)	ug/kg	ND	35.0	10/25/12 17:42	
Tetrachloro-m-xylene (S)	%	79	32-105	10/25/12 17:42	

LABORATORY CONTROL SAMPLE: 820861

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	141	85	49-112	
PCB-1260 (Aroclor 1260)	ug/kg	167	160	96	58-111	
Tetrachloro-m-xylene (S)	%			82	32-105	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings
Pace Project No.: 5071213

QC Batch: OEXT/31145 Analysis Method: EPA 8082
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 5071213005

METHOD BLANK: 822705 Matrix: Solid
Associated Lab Samples: 5071213005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	35.0	10/29/12 19:49	
PCB-1221 (Aroclor 1221)	ug/kg	ND	35.0	10/29/12 19:49	
PCB-1232 (Aroclor 1232)	ug/kg	ND	35.0	10/29/12 19:49	
PCB-1242 (Aroclor 1242)	ug/kg	ND	35.0	10/29/12 19:49	
PCB-1248 (Aroclor 1248)	ug/kg	ND	35.0	10/29/12 19:49	
PCB-1254 (Aroclor 1254)	ug/kg	ND	35.0	10/29/12 19:49	
PCB-1260 (Aroclor 1260)	ug/kg	ND	35.0	10/29/12 19:49	
Tetrachloro-m-xylene (S)	%	77	32-105	10/29/12 19:49	

LABORATORY CONTROL SAMPLE: 822706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	160	96	49-112	
PCB-1260 (Aroclor 1260)	ug/kg	167	156	93	58-111	
Tetrachloro-m-xylene (S)	%			82	32-105	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 822707 822708

Parameter	Units	5071346001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	281	281	203	192	72	68	14-135	6	20	
PCB-1260 (Aroclor 1260)	ug/kg	ND	281	281	212	191	76	68	18-124	10	20	
Tetrachloro-m-xylene (S)	%						69	66	32-105		20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 823427 823428

Parameter	Units	5071213005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	273	273	208	244	76	90	14-135	16	20	
PCB-1260 (Aroclor 1260)	ug/kg	ND	273	273	254	269	93	99	18-124	6	20	
Tetrachloro-m-xylene (S)	%						77	86	32-105		20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: OEXT/31147 Analysis Method: EPA 8270
QC Batch Method: EPA 3510 Analysis Description: 8270 TCLP MSSV
Associated Lab Samples: 5071213001, 5071213003, 5071213004, 5071213005, 5071213006

METHOD BLANK: 822808 Matrix: Water

Associated Lab Samples: 5071213001, 5071213003, 5071213004, 5071213005, 5071213006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	100	10/30/12 12:28	
2,4,5-Trichlorophenol	ug/L	ND	500	10/30/12 12:28	
2,4,6-Trichlorophenol	ug/L	ND	100	10/30/12 12:28	
2,4-Dinitrotoluene	ug/L	ND	100	10/30/12 12:28	
2-Methylphenol(o-Cresol)	ug/L	ND	100	10/30/12 12:28	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	200	10/30/12 12:28	
Hexachloro-1,3-butadiene	ug/L	ND	100	10/30/12 12:28	
Hexachlorobenzene	ug/L	ND	100	10/30/12 12:28	
Hexachloroethane	ug/L	ND	100	10/30/12 12:28	
Nitrobenzene	ug/L	ND	100	10/30/12 12:28	
Pentachlorophenol	ug/L	ND	500	10/30/12 12:28	
Pyridine	ug/L	ND	100	10/30/12 12:28	
2,4,6-Tribromophenol (S)	%	93	32-124	10/30/12 12:28	
2-Fluorobiphenyl (S)	%	80	34-106	10/30/12 12:28	
2-Fluorophenol (S)	%	22	10-74	10/30/12 12:28	
Nitrobenzene-d5 (S)	%	83	33-108	10/30/12 12:28	
p-Terphenyl-d14 (S)	%	85	31-122	10/30/12 12:28	
Phenol-d5 (S)	%	12	10-56	10/30/12 12:28	

LABORATORY CONTROL SAMPLE: 822809

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	1000	721	72	30-92	
2,4,5-Trichlorophenol	ug/L	1000	850	85	39-125	
2,4,6-Trichlorophenol	ug/L	1000	835	84	38-125	
2,4-Dinitrotoluene	ug/L	1000	871	87	38-119	
2-Methylphenol(o-Cresol)	ug/L	1000	489	49	31-106	
3&4-Methylphenol(m&p Cresol)	ug/L	2000	777	39	24-97	
Hexachloro-1,3-butadiene	ug/L	1000	752	75	16-115	
Hexachlorobenzene	ug/L	1000	704	70	33-124	
Hexachloroethane	ug/L	1000	687	69	16-100	
Nitrobenzene	ug/L	1000	796	80	35-114	
Pentachlorophenol	ug/L	1000	841	84	14-131	
Pyridine	ug/L	1000	129	13	10-61	
2,4,6-Tribromophenol (S)	%			92	32-124	
2-Fluorobiphenyl (S)	%			79	34-106	
2-Fluorophenol (S)	%			24	10-74	
Nitrobenzene-d5 (S)	%			82	33-108	
p-Terphenyl-d14 (S)	%			91	31-122	
Phenol-d5 (S)	%			14	10-56	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:		822810					
Parameter	Units	5071194005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND		711			
2,4,5-Trichlorophenol	ug/L	ND		737			
2,4,6-Trichlorophenol	ug/L	ND		684			
2,4-Dinitrotoluene	ug/L	ND		671			
2-Methylphenol(o-Cresol)	ug/L	ND		346			M0
3&4-Methylphenol(m&p Cresol)	ug/L	ND		563			M0
Hexachloro-1,3-butadiene	ug/L	ND		658			
Hexachlorobenzene	ug/L	ND		737			
Hexachloroethane	ug/L	ND		608			
Nitrobenzene	ug/L	ND		747			
Pentachlorophenol	ug/L	ND		634			
Pyridine	ug/L	ND		321			
2,4,6-Tribromophenol (S)	%				70	32-124	
2-Fluorobiphenyl (S)	%				78	34-106	
2-Fluorophenol (S)	%				16	10-74	
Nitrobenzene-d5 (S)	%				76	33-108	
p-Terphenyl-d14 (S)	%				85	31-122	
Phenol-d5 (S)	%				11	10-56	

MATRIX SPIKE SAMPLE:		822812					
Parameter	Units	5071332001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	690	69	35-102	
2,4,5-Trichlorophenol	ug/L	ND	1000	800	80	60-121	
2,4,6-Trichlorophenol	ug/L	ND	1000	826	83	57-125	
2,4-Dinitrotoluene	ug/L	ND	1000	773	77	37-114	
2-Methylphenol(o-Cresol)	ug/L	ND	1000	424	42	41-111	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	716	36	32-111	
Hexachloro-1,3-butadiene	ug/L	ND	1000	705	70	20-114	
Hexachlorobenzene	ug/L	ND	1000	594	59	32-125	
Hexachloroethane	ug/L	ND	1000	628	63	22-101	
Nitrobenzene	ug/L	ND	1000	873	87	50-113	
Pentachlorophenol	ug/L	ND	1000	699	70	25-117	
Pyridine	ug/L	ND	1000	222	22	10-112	
2,4,6-Tribromophenol (S)	%				92	32-124	
2-Fluorobiphenyl (S)	%				72	34-106	
2-Fluorophenol (S)	%				24	10-74	
Nitrobenzene-d5 (S)	%				88	33-108	
p-Terphenyl-d14 (S)	%				84	31-122	
Phenol-d5 (S)	%				11	10-56	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: OEXT/31163

Analysis Method: EPA 8270

QC Batch Method: EPA 3510

Analysis Description: 8270 TCLP MSSV

Associated Lab Samples: 5071213002

METHOD BLANK: 823643

Matrix: Water

Associated Lab Samples: 5071213002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	100	10/31/12 16:46	
2,4,5-Trichlorophenol	ug/L	ND	500	10/31/12 16:46	
2,4,6-Trichlorophenol	ug/L	ND	100	10/31/12 16:46	
2,4-Dinitrotoluene	ug/L	ND	100	10/31/12 16:46	
2-Methylphenol(o-Cresol)	ug/L	ND	100	10/31/12 16:46	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	200	10/31/12 16:46	
Hexachloro-1,3-butadiene	ug/L	ND	100	10/31/12 16:46	
Hexachlorobenzene	ug/L	ND	100	10/31/12 16:46	
Hexachloroethane	ug/L	ND	100	10/31/12 16:46	
Nitrobenzene	ug/L	ND	100	10/31/12 16:46	
Pentachlorophenol	ug/L	ND	500	10/31/12 16:46	
Pyridine	ug/L	ND	100	10/31/12 16:46	
2,4,6-Tribromophenol (S)	%	88	32-124	10/31/12 16:46	
2-Fluorobiphenyl (S)	%	72	34-106	10/31/12 16:46	
2-Fluorophenol (S)	%	29	10-74	10/31/12 16:46	
Nitrobenzene-d5 (S)	%	85	33-108	10/31/12 16:46	
p-Terphenyl-d14 (S)	%	84	31-122	10/31/12 16:46	
Phenol-d5 (S)	%	16	10-56	10/31/12 16:46	

LABORATORY CONTROL SAMPLE: 823644

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	1000	689	69	30-92	
2,4,5-Trichlorophenol	ug/L	1000	813	81	39-125	
2,4,6-Trichlorophenol	ug/L	1000	854	85	38-125	
2,4-Dinitrotoluene	ug/L	1000	789	79	38-119	
2-Methylphenol(o-Cresol)	ug/L	1000	511	51	31-106	
3&4-Methylphenol(m&p Cresol)	ug/L	2000	799	40	24-97	
Hexachloro-1,3-butadiene	ug/L	1000	615	61	16-115	
Hexachlorobenzene	ug/L	1000	721	72	33-124	
Hexachloroethane	ug/L	1000	595	60	16-100	
Nitrobenzene	ug/L	1000	738	74	35-114	
Pentachlorophenol	ug/L	1000	776	78	14-131	
Pyridine	ug/L	1000	170	17	10-61	
2,4,6-Tribromophenol (S)	%			89	32-124	
2-Fluorobiphenyl (S)	%			80	34-106	
2-Fluorophenol (S)	%			27	10-74	
Nitrobenzene-d5 (S)	%			78	33-108	
p-Terphenyl-d14 (S)	%			74	31-122	
Phenol-d5 (S)	%			16	10-56	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:	823645						
Parameter	Units	5071174001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	678	68	35-102	
2,4,5-Trichlorophenol	ug/L	ND	1000	760	76	60-121	
2,4,6-Trichlorophenol	ug/L	ND	1000	771	77	57-125	
2,4-Dinitrotoluene	ug/L	ND	1000	588	59	37-114	
2-Methylphenol(o-Cresol)	ug/L	ND	1000	545	55	41-111	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	890	44	32-111	
Hexachloro-1,3-butadiene	ug/L	ND	1000	622	62	20-114	
Hexachlorobenzene	ug/L	ND	1000	767	77	32-125	
Hexachloroethane	ug/L	ND	1000	558	56	22-101	
Nitrobenzene	ug/L	ND	1000	804	80	50-113	
Pentachlorophenol	ug/L	ND	1000	351J	35	25-117	
Pyridine	ug/L	ND	1000	253	25	10-112	
2,4,6-Tribromophenol (S)	%.				79	32-124	
2-Fluorobiphenyl (S)	%.				70	34-106	
2-Fluorophenol (S)	%.				30	10-74	
Nitrobenzene-d5 (S)	%.				77	33-108	
p-Terphenyl-d14 (S)	%.				77	31-122	
Phenol-d5 (S)	%.				17	10-56	

MATRIX SPIKE SAMPLE:	823646						
Parameter	Units	5071489001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	632	63	35-102	
2,4,5-Trichlorophenol	ug/L	ND	1000	713	71	60-121	
2,4,6-Trichlorophenol	ug/L	ND	1000	681	68	57-125	
2,4-Dinitrotoluene	ug/L	ND	1000	598	60	37-114	
2-Methylphenol(o-Cresol)	ug/L	ND	1000	457	46	41-111	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	704	35	32-111	
Hexachloro-1,3-butadiene	ug/L	ND	1000	634	63	20-114	
Hexachlorobenzene	ug/L	ND	1000	620	62	32-125	
Hexachloroethane	ug/L	ND	1000	543	54	22-101	
Nitrobenzene	ug/L	ND	1000	707	71	50-113	
Pentachlorophenol	ug/L	ND	1000	737	74	25-117	
Pyridine	ug/L	ND	1000	113	11	10-112	
2,4,6-Tribromophenol (S)	%.				78	32-124	
2-Fluorobiphenyl (S)	%.				61	34-106	
2-Fluorophenol (S)	%.				0	10-74	S0
Nitrobenzene-d5 (S)	%.				74	33-108	
p-Terphenyl-d14 (S)	%.				60	31-122	
Phenol-d5 (S)	%.				15	10-56	

MATRIX SPIKE SAMPLE:		823647					
Parameter	Units	5071400001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	593	59	35-102	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:	823647						
Parameter	Units	5071400001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
2,4,5-Trichlorophenol	ug/L	ND	1000	878	88	60-121	
2,4,6-Trichlorophenol	ug/L	ND	1000	852	85	57-125	
2,4-Dinitrotoluene	ug/L	ND	1000	662	66	37-114	
2-Methylphenol(o-Cresol)	ug/L	ND	1000	453	45	41-111	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	756	38	32-111	
Hexachloro-1,3-butadiene	ug/L	ND	1000	661	66	20-114	
Hexachlorobenzene	ug/L	ND	1000	800	80	32-125	
Hexachloroethane	ug/L	ND	1000	528	53	22-101	
Nitrobenzene	ug/L	ND	1000	770	77	50-113	
Pentachlorophenol	ug/L	ND	1000	418J	42	25-117	
Pyridine	ug/L	ND	1000	137	14	10-112	
2,4,6-Tribromophenol (S)	%.				96	32-124	
2-Fluorobiphenyl (S)	%.				72	34-106	
2-Fluorophenol (S)	%.				26	10-74	
Nitrobenzene-d5 (S)	%.				75	33-108	
p-Terphenyl-d14 (S)	%.				93	31-122	
Phenol-d5 (S)	%.				14	10-56	

MATRIX SPIKE SAMPLE:	823648						
Parameter	Units	5071414001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	594	59	35-102	
2,4,5-Trichlorophenol	ug/L	ND	1000	818	82	60-121	
2,4,6-Trichlorophenol	ug/L	ND	1000	817	82	57-125	
2,4-Dinitrotoluene	ug/L	ND	1000	591	59	37-114	
2-Methylphenol(o-Cresol)	ug/L	ND	1000	416	42	41-111	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	704	35	32-111	
Hexachloro-1,3-butadiene	ug/L	ND	1000	488	49	20-114	
Hexachlorobenzene	ug/L	ND	1000	732	73	32-125	
Hexachloroethane	ug/L	ND	1000	465	47	22-101	
Nitrobenzene	ug/L	ND	1000	641	64	50-113	
Pentachlorophenol	ug/L	ND	1000	348J	35	25-117	
Pyridine	ug/L	ND	1000	129	13	10-112	
2,4,6-Tribromophenol (S)	%.				84	32-124	
2-Fluorobiphenyl (S)	%.				70	34-106	
2-Fluorophenol (S)	%.				23	10-74	
Nitrobenzene-d5 (S)	%.				67	33-108	
p-Terphenyl-d14 (S)	%.				91	31-122	
Phenol-d5 (S)	%.				13	10-56	

MATRIX SPIKE SAMPLE:		824197					
		5071194005	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	681	68	35-102	
2,4,5-Trichlorophenol	ug/L	ND	1000	543	54	60-121	M0

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

MATRIX SPIKE SAMPLE:		824197						
Parameter	Units	5071194005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers	
2,4,6-Trichlorophenol	ug/L	ND	1000	566	57	57-125		
2,4-Dinitrotoluene	ug/L	ND	1000	511	51	37-114		
2-Methylphenol(o-Cresol)	ug/L	ND	1000	372	37	41-111	M0	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	615	31	32-111	M0	
Hexachloro-1,3-butadiene	ug/L	ND	1000	789	79	20-114		
Hexachlorobenzene	ug/L	ND	1000	946	95	32-125		
Hexachloroethane	ug/L	ND	1000	515	52	22-101		
Nitrobenzene	ug/L	ND	1000	738	74	50-113		
Pentachlorophenol	ug/L	ND	1000	328J	33	25-117		
Pyridine	ug/L	ND	1000	276	28	10-112		
2,4,6-Tribromophenol (S)	%.				62	32-124		
2-Fluorobiphenyl (S)	%.				78	34-106		
2-Fluorophenol (S)	%.				16	10-74		
Nitrobenzene-d5 (S)	%.				77	33-108		
p-Terphenyl-d14 (S)	%.				80	31-122		
Phenol-d5 (S)	%.				11	10-56		

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch: PMST/7632

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006

SAMPLE DUPLICATE: 821488

Parameter	Units	5071213005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	38.7	41.6	7	5	R1

SAMPLE DUPLICATE: 821489

Parameter	Units	5071268003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	16.3	16.2	.3	5	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch:	WET/10350	Analysis Method:	EPA 7196A
QC Batch Method:	EPA 3060A	Analysis Description:	7196 Chromium, Hexavalent
Associated Lab Samples:	5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006		

METHOD BLANK:	821751	Matrix:	Solid
Associated Lab Samples:	5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/kg	ND	2.0	10/29/12 10:37	

LABORATORY CONTROL SAMPLE: 821752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	1000	878	87	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 821753 821754

Parameter	Units	5071213005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/kg	ND	1710	1660	131J	108J	7	6	75-125		20	M3

SAMPLE DUPLICATE: 821980

Parameter	Units	5070953001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	mg/kg	ND	ND		20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch:	WETA/22224	Analysis Method:	SW-846 7.3.3.2
QC Batch Method:	SW-846 7.3.3.2	Analysis Description:	733C Reactive Cyanide
Associated Lab Samples:	5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006		

METHOD BLANK:	1087673	Matrix:	Solid
Associated Lab Samples:	5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	10/29/12 14:10	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.5	0.56	111	71-123	

Parameter	Units	5071213005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.5	0.45	88	57-132	

Parameter	Units	5071194004 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	ND	ND		23	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071213

QC Batch:	WETA/8758	Analysis Method:	EPA 9012
QC Batch Method:	EPA 9012	Analysis Description:	9012 Cyanide
Associated Lab Samples:	5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006		

METHOD BLANK:	820880	Matrix:	Solid
Associated Lab Samples:	5071213001, 5071213002, 5071213003, 5071213004, 5071213005, 5071213006		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/kg	ND	0.50	10/26/12 13:43	

LABORATORY CONTROL SAMPLE: 820881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	10	10.6	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 820882 820883

Parameter	Units	5071213005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	ND	16.3	16.3	18.2	18.6	108	111	90-110	2	20	M0

QUALIFIERS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-I Pace Analytical Services - Indianapolis

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

R1 RPD value was outside control limits.

S0 Surrogate recovery outside laboratory control limits.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5071213001	BMF-S01-102212	EPA 3546	OEXT/31121	EPA 8082	GCSV/10094
5071213002	BMF-S02-102212	EPA 3546	OEXT/31121	EPA 8082	GCSV/10094
5071213003	BMF-S03-102212	EPA 3546	OEXT/31121	EPA 8082	GCSV/10094
5071213004	BMF-S03-102212D	EPA 3546	OEXT/31121	EPA 8082	GCSV/10094
5071213005	BMF-S04-102212	EPA 3546	OEXT/31145	EPA 8082	GCSV/10100
5071213006	BMF-S05-102212	EPA 3546	OEXT/31121	EPA 8082	GCSV/10094
5071213001	BMF-S01-102212	EPA 3050	MPRP/10079	EPA 6010	ICP/10510
5071213002	BMF-S02-102212	EPA 3050	MPRP/10079	EPA 6010	ICP/10510
5071213003	BMF-S03-102212	EPA 3050	MPRP/10079	EPA 6010	ICP/10510
5071213004	BMF-S03-102212D	EPA 3050	MPRP/10079	EPA 6010	ICP/10510
5071213005	BMF-S04-102212	EPA 3050	MPRP/10079	EPA 6010	ICP/10510
5071213006	BMF-S05-102212	EPA 3050	MPRP/10079	EPA 6010	ICP/10510
5071213001	BMF-S01-102212	EPA 3010	MPRP/10105	EPA 6010	ICP/10535
5071213002	BMF-S02-102212	EPA 3010	MPRP/10105	EPA 6010	ICP/10535
5071213003	BMF-S03-102212	EPA 3010	MPRP/10105	EPA 6010	ICP/10535
5071213004	BMF-S03-102212D	EPA 3010	MPRP/10105	EPA 6010	ICP/10535
5071213005	BMF-S04-102212	EPA 3010	MPRP/10105	EPA 6010	ICP/10535
5071213006	BMF-S05-102212	EPA 3010	MPRP/10105	EPA 6010	ICP/10535
5071213001	BMF-S01-102212	EPA 7470	MERP/4215	EPA 7470	MERC/4248
5071213002	BMF-S02-102212	EPA 7470	MERP/4215	EPA 7470	MERC/4248
5071213003	BMF-S03-102212	EPA 7470	MERP/4215	EPA 7470	MERC/4248
5071213004	BMF-S03-102212D	EPA 7470	MERP/4215	EPA 7470	MERC/4248
5071213005	BMF-S04-102212	EPA 7470	MERP/4215	EPA 7470	MERC/4248
5071213006	BMF-S05-102212	EPA 7470	MERP/4215	EPA 7470	MERC/4248
5071213001	BMF-S01-102212	EPA 7471	MERP/4218	EPA 7471	MERC/4245
5071213002	BMF-S02-102212	EPA 7471	MERP/4218	EPA 7471	MERC/4245
5071213003	BMF-S03-102212	EPA 7471	MERP/4218	EPA 7471	MERC/4245
5071213004	BMF-S03-102212D	EPA 7471	MERP/4218	EPA 7471	MERC/4245
5071213005	BMF-S04-102212	EPA 7471	MERP/4218	EPA 7471	MERC/4245
5071213006	BMF-S05-102212	EPA 7471	MERP/4218	EPA 7471	MERC/4245
5071213001	BMF-S01-102212	EPA 3510	OEXT/31147	EPA 8270	MSSV/11261
5071213002	BMF-S02-102212	EPA 3510	OEXT/31163	EPA 8270	MSSV/11269
5071213003	BMF-S03-102212	EPA 3510	OEXT/31147	EPA 8270	MSSV/11261
5071213004	BMF-S03-102212D	EPA 3510	OEXT/31147	EPA 8270	MSSV/11261
5071213005	BMF-S04-102212	EPA 3510	OEXT/31147	EPA 8270	MSSV/11261
5071213006	BMF-S05-102212	EPA 3510	OEXT/31147	EPA 8270	MSSV/11261
5071213001	BMF-S01-102212	EPA 8260	MSV/47287		
5071213002	BMF-S02-102212	EPA 8260	MSV/47287		
5071213003	BMF-S03-102212	EPA 8260	MSV/47287		
5071213004	BMF-S03-102212D	EPA 8260	MSV/47287		
5071213005	BMF-S04-102212	EPA 8260	MSV/47287		
5071213006	BMF-S05-102212	EPA 8260	MSV/47288		
5071213001	BMF-S01-102212	ASTM D2974-87	PMST/7632		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5071213002	BMF-S02-102212	ASTM D2974-87	PMST/7632		
5071213003	BMF-S03-102212	ASTM D2974-87	PMST/7632		
5071213004	BMF-S03-102212D	ASTM D2974-87	PMST/7632		
5071213005	BMF-S04-102212	ASTM D2974-87	PMST/7632		
5071213006	BMF-S05-102212	ASTM D2974-87	PMST/7632		
5071213001	BMF-S01-102212	EPA 3060A	WET/10350	EPA 7196A	WET/10358
5071213002	BMF-S02-102212	EPA 3060A	WET/10350	EPA 7196A	WET/10358
5071213003	BMF-S03-102212	EPA 3060A	WET/10350	EPA 7196A	WET/10358
5071213004	BMF-S03-102212D	EPA 3060A	WET/10350	EPA 7196A	WET/10358
5071213005	BMF-S04-102212	EPA 3060A	WET/10350	EPA 7196A	WET/10358
5071213006	BMF-S05-102212	EPA 3060A	WET/10350	EPA 7196A	WET/10358
5071213001	BMF-S01-102212	SW-846 7.3.3.2	WETA/22224		
5071213002	BMF-S02-102212	SW-846 7.3.3.2	WETA/22224		
5071213003	BMF-S03-102212	SW-846 7.3.3.2	WETA/22224		
5071213004	BMF-S03-102212D	SW-846 7.3.3.2	WETA/22224		
5071213005	BMF-S04-102212	SW-846 7.3.3.2	WETA/22224		
5071213006	BMF-S05-102212	SW-846 7.3.3.2	WETA/22224		
5071213001	BMF-S01-102212	EPA 9012	WETA/8758	EPA 9012	WETA/8765
5071213002	BMF-S02-102212	EPA 9012	WETA/8758	EPA 9012	WETA/8765
5071213003	BMF-S03-102212	EPA 9012	WETA/8758	EPA 9012	WETA/8765
5071213004	BMF-S03-102212D	EPA 9012	WETA/8758	EPA 9012	WETA/8765
5071213005	BMF-S04-102212	EPA 9012	WETA/8758	EPA 9012	WETA/8765
5071213006	BMF-S05-102212	EPA 9012	WETA/8758	EPA 9012	WETA/8765

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: Environmental Restoration, LLC Address: 16660 Fabric Dr Fenton, MO 63026 Email To: J.Behrens@erllc.com Phone: 708-473-7244 Requested Due Date/TAT: Standard TAT		Section B Required Project Information: Report To: John Behrens Copy To: Temma, Sundquist@westernsolutions.com Purchase Order No.: Project Name: Baycoke metal Finishings Project Number:		Section C Invoice Information: Attention: See Section A Company Name: Address: Pace Quote Reference: Pace Project Manager: Pace Profile #:		Page: 1 of 1 1605147 1605147 REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER Site Location STATE: IN	
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ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE DW WT WW P SL OL WP AR TS OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION (°F)	# OF CONTAINERS	Preservatives								Analysis Test ↓	Y/N ↑	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
					COMPOSITE START	DATE	TIME	COMPOSITE END/GRAB			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃					Methanol	Other																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1	Bmf-501-102212	Drinking Water	SL G	G		10-22-12	1150		65	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		</

Section E ADDITIONAL COMMENTS Perform m/s/m on sample Bmf-504-102212		RELINQUISHED BY / AFFILIATION David Sena / western		DATE 10-23-12		TIME 1025		ACCEPTED BY / AFFILIATION David Sena / western		DATE 10/23/12		TIME 1025		SAMPLE CONDITIONS 10/24/12 7:35am 12.5 N N ✓		Received on 10/24/12		Custody 10/24/12		Sealed Cooler 10/24/12		Samples Intact 10/24/12	
--	--	---	--	------------------	--	--------------	--	---	--	------------------	--	--------------	--	---	--	-------------------------	--	---------------------	--	---------------------------	--	----------------------------	--

Sample Condition Upon Receipt

Pace Analytical

Client Name: Env. Restoration Project # 5071213

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other Now

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Date/Time 5035A kits placed in freezer

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 123456 ABCDE

Type of Ice: Wet Blue None

☐ Samples on ice, cooling process has begun

Cooler Temperature 12.5°C
(Corrected, if applicable)

Ice Visible in Sample Containers: ☐ yes ☒ no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: Kee 10-24-12

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>But not relinquished 2nd time</u>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
-Includes date/time/ID/Analysis		
All containers needing acid/base pres. have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9. (Circle) HNO3 H2SO4 NaOH HCl
exceptions: VOA, coliform, TOC, O&G		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Project Manager Review		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: John Behrens Date/Time: 10/24/12

Comments/ Resolution:

No ice remaining of 2 pollock bags full of melted ice, only water left. OK to proceed with analyses per John Behrens 10/24/12

Project Manager Review:

Kenneth Hunt

Date: 10/24/12

Sample Container Count



CLIENT: Env. Restoration
 COC PAGE 6 of 1
 COC ID# 1605147

Project # 6071213

Sample Line

Item	DG9H	AG1U	WG9U	AG0U	R 4/6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	Comments
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

Container Codes

DG9H	40mL HCL amber vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WG9U	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I	Wipe/Swab
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

**BAYCOTE METAL FINISHING
MISHIWAKA, INDIANA
DATA VALIDATION REPORT**

Date: November 2, 2012

Laboratory: Pace Analytical Services, Inc. (Pace), Indianapolis, Indiana

Laboratory Project #: 5071213

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

Weston Work Order #: 20405.012.001.1843.00

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for six solid samples collected for the Baycote Metal Finishing Removal Site that were analyzed for the following parameters and U.S. Environmental Protection Agency (U.S. EPA) methods:

- Toxicity Characteristic Leaching Procedures (TCLP) Volatile Organic Compounds (VOC) by SW-846 Methods 1311 and 8260
- TCLP Semivolatile Organic Carbons (SVOC) by SW-846 Methods 1311 and 8270
- Polychlorinated Biphenyls (PCB) by SW-846 Method 8082
- Metals by SW-846 Methods 6010 and 7471
- TCLP Metals by SW-846 Methods 1311, 6010, and 7470
- Hexavalent Chromium by SW-846 Method 7196A
- Total Cyanide by SW-846 Method 9012
- Reactive Cyanide by SW-846 Method 7.3.3.2

A level II data package was requested from STAT. 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 Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

TCLP VOCs by SW-846 METHODS 1311 AND 8260

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-S01-102212	5071213001	Solid	10/22/2012	10/27/2012
BMF-S02-102212	5071213002	Solid	10/22/2012	10/27/2012
BMF-S03-102212	5071213003	Solid	10/22/2012	10/27/2012
BMF-S03-102212D	5071213004	Solid	10/22/2012	10/27/2012
BMF-S04-102212	5071213005	Solid	10/22/2012	10/27/2012
BMF-S05-102212	5071213006	Solid	10/22/2012	10/27/2012

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 VOC analyses. The method blanks were free of target compound contamination above the reporting limit.

4. Surrogate Results

The surrogate recovery results were within the laboratory-established quality control (QC) limits.

5. Laboratory Control Sample (LCS) Results

The LCS recoveries were within laboratory QC limits.

6. Matrix Spike (MS) Results

Site-specific MS samples were analyzed. The percent recoveries were within QC limits.

7. Field Duplicate Results

Sample BMF-S03-102212D is a field duplicate of sample BMF-S03-102212. All results were non-detect in both samples indicating good correlation between the samples.

8. **Overall Assessment**

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

TCLP SVOCs BY SW-846 METHODS 1311 AND 8270

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
BMF-S01-102212	5071213001	Solid	10/22/2012	10/29/2012	10/31/2012
BMF-S02-102212	5071213002	Solid	10/22/2012	10/31/2012	10/31/2012
BMF-S03-102212	5071213003	Solid	10/22/2012	10/29/2012	10/30/2012
BMF-S03-102212D	5071213004	Solid	10/22/2012	10/29/2012	10/30/2012
BMF-S04-102212	5071213005	Solid	10/22/2012	10/29/2012	10/30/2012
BMF-S05-102212	5071213006	Solid	10/22/2012	10/29/2012	10/30/2012

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 SVOC analyses. The method blanks were free of target compound contamination above the reporting limits.

4. **Surrogate Results**

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

5. **LCS Results**

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

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

A site-specific MS and MSD were not analyzed. No qualifications are required.

7. Field Duplicate Results

Sample BMF-S03-102212D is a field duplicate of sample BMF-S03-102212. All results were non-detect for SVOCs in both samples indicating good correlation between the samples.

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
BMF-S01-102212	5071213001	Solid	10/22/2012	10/25/2012	10/25/2012
BMF-S02-102212	5071213002	Solid	10/22/2012	10/25/2012	10/25/2012
BMF-S03-102212	5071213003	Solid	10/22/2012	10/25/2012	10/25/2012
BMF-S03-102212D	5071213004	Solid	10/22/2012	10/25/2012	10/25/2012
BMF-S04-102212	5071213005	Solid	10/22/2012	10/29/2012	10/29/2012
BMF-S05-102212	5071213006	Solid	10/22/2012	10/25/2012	10/25/2012

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 PCB analyses. The method blanks were free of target compound contamination above the reporting limit.

4. Surrogates

The surrogate recoveries were within QC limits.

5. LCS Results

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

6. MS and MSD Results

A site-specific MS and MSD were analyzed. The percent recoveries and RPDs were within QC limits.

7. Field Duplicate Results

Sample BMF-S03-102212D is a field duplicate of sample BMF-S03-102212. All results were non-detect for PCBs in both samples indicating good correlation between the samples.

8. Overall Assessment

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

TOTAL METALS BY SW-846 METHODS 6010 AND 7471

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-S01-102212	5071213001	Solid	10/22/2012	10/26/2012 – 10/30/2012
BMF-S02-102212	5071213002	Solid	10/22/2012	10/26/2012 – 10/30/2012
BMF-S03-102212	5071213003	Solid	10/22/2012	10/26/2012 – 10/30/2012
BMF-S03-102212D	5071213004	Solid	10/22/2012	10/26/2012 – 10/30/2012
BMF-S04-102212	5071213005	Solid	10/22/2012	10/26/2012 – 10/30/2012
BMF-S05-102212	5071213006	Solid	10/22/2012	10/26/2012 – 10/30/2012

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

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

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

5. MS and MSD Results

A site-specific MS and MSD were analyzed for the metals analysis. The percent recoveries and RPDs were within QC limits.

6. Field Duplicate Results

Sample BMF-S03-102212D is a field duplicate of sample BMF-S03-102212. All results were non-detect for PCBs in both samples indicating good correlation between the samples.

The RPDs for detected metals ranged from 3 to 77 percent. The RPDs were acceptable except for chromium which had an RPD of 77, above a standard QC limit of 50 RPD. There appears to be minor heterogeneity associated with chromium in these samples. No qualifications were applied.

7. Overall Assessment

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

TCLP METALS BY SW-846 METHODS 1311, 6010, AND 7470

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-S01-102212	5071213001	Solid	10/22/2012	10/30/2012 – 10/31/2012
BMF-S02-102212	5071213002	Solid	10/22/2012	10/30/2012 – 10/31/2012
BMF-S03-102212	5071213003	Solid	10/22/2012	10/30/2012 – 10/31/2012
BMF-S03-102212D	5071213004	Solid	10/22/2012	10/30/2012 – 10/31/2012
BMF-S04-102212	5071213005	Solid	10/22/2012	10/30/2012 – 10/31/2012
BMF-S05-102212	5071213006	Solid	10/22/2012	10/30/2012 – 10/31/2012

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

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

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

5. MS and MSD Results

A site-specific MS was analyzed and recoveries were within QC limits.

6. Field Duplicate Results

Sample BMF-S03-102212D is a field duplicate of sample BMF-S03-102212. All results were non-detect for TCLP metals in both samples indicating good correlation between the samples.

7. **Overall Assessment**

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

GENERAL CHEMISTRY PARAMETERS (Hexavalent Chromium by 7196A, Total Cyanide by 9012, and Reactive Cyanide by 7.3.3.2)

1. **Samples**

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-S01-102212	5071213001	Solid	10/22/2012	10/26/2012 – 10/29/2012
BMF-S02-102212	5071213002	Solid	10/22/2012	10/26/2012 – 10/29/2012
BMF-S03-102212	5071213003	Solid	10/22/2012	10/26/2012 – 10/29/2012
BMF-S03-102212D	5071213004	Solid	10/22/2012	10/26/2012 – 10/29/2012
BMF-S04-102212	5071213005	Solid	10/22/2012	10/26/2012 – 10/29/2012
BMF-S05-102212	5071213006	Solid	10/22/2012	10/26/2012 – 10/29/2012

2. **Holding Times**

The holding times were acceptable for all analyses.

3. **Method Blanks**

Method blanks were analyzed and were free of target analyte contamination above the reporting limits.

4. **LCS Results**

The percent recoveries were within QC limits for all LCSs analyzed.

5. **Laboratory Duplicate Results**

Laboratory duplicates had acceptable results.

6. MS and MSD Results

Site-specific MS and MSDs were analyzed. The recoveries and RPDs were acceptable except for as follows. For hexavalent chromium the percent recoveries were very low. The quantitation limits for the non-detected hexavalent chromium analyses were flagged "UJ" as estimated due to apparent matrix interferences.

7. Field Duplicate Results

Sample BMF-S03-102212D is a field duplicate of sample BMF-S03-102212. All results were non-detect except for total cyanide in the field duplicate which had a result of 0.72 milligram per kilogram which was near the reporting limit. Total cyanide was not detected in the parent sample. No qualifications were applied.

8. Overall Assessment

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

Data Validation Report
Baycote Metal Finishing Site
Pace Analytical Services, Inc.
Laboratory Project #: 5071213

ATTACHMENT

**PACE ANALYTICAL SERVICES, INC.
RESULTS SUMMARY WITH QUALIFIERS**

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S01-102212 Lab ID: 5071213001 Collected: 10/22/12 11:50 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 17:55	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	69 %		32-105	1	10/25/12 10:03	10/25/12 17:55	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.7	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-38-2	
Barium	59.5	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-39-3	
Cadmium	17.8	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-43-9	
Chromium	115	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-47-3	
Lead	18.3	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7439-92-1	
Selenium	ND	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7782-49-2	
Silver	ND	mg/kg	2.5	1	10/25/12 09:50	10/26/12 13:50	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:29	7440-39-3	
Cadmium	0.087	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:29	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:29	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:29	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:18	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.30	mg/kg	0.26	1	10/29/12 11:15	10/30/12 14:36	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:13	95-48-7	

Date: 11/01/2012 10:53 AM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S01-102212 Lab ID: 5071213001 Collected: 10/22/12 11:50 Received: 10/24/12 07:35 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3,4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 14:13		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:13	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:13	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:13	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:13	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:13	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	83 %		33-108	1	10/29/12 14:50	10/30/12 14:13	4165-60-0	
2-Fluorobiphenyl (S)	65 %		34-106	1	10/29/12 14:50	10/30/12 14:13	321-60-8	
p-Terphenyl-d14 (S)	99 %		31-122	1	10/29/12 14:50	10/30/12 14:13	1718-51-0	
Phenol-d5 (S)	12 %		10-56	1	10/29/12 14:50	10/30/12 14:13	4165-62-2	
2-Fluorophenol (S)	23 %		10-74	1	10/29/12 14:50	10/30/12 14:13	367-12-4	
2,4,6-Tribromophenol (S)	93 %		32-124	1	10/29/12 14:50	10/30/12 14:13	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 09:41	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 09:41	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 09:41	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 09:41	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 09:41	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 09:41	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 09:41	75-35-4	
Tetrachloroethene	91.2 ug/L		50.0	1		10/27/12 09:41	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 09:41	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 09:41	75-01-4	
Surrogates								
Toluene-d8 (S)	99 %		81-114	1		10/27/12 09:41	2037-26-5	
4-Bromofluorobenzene (S)	101 %		72-125	1		10/27/12 09:41	460-00-4	
Dibromofluoromethane (S)	96 %		83-123	1		10/27/12 09:41	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	21.1 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg	UJ	12.7	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:18		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	16.3 mg/kg		0.63	1	10/26/12 12:04	10/26/12 13:47	57-12-5	

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11/2/12

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S02-102212 Lab ID: 5071213002 Collected: 10/22/12 12:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	143	1	10/25/12 10:03	10/25/12 18:01	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	43 %		32-105	1	10/25/12 10:03	10/25/12 18:01	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	9.9	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-38-2	
Barium	73.4	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-39-3	
Cadmium	35.3	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-43-9	
Chromium	411	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-47-3	
Lead	24.5	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7439-92-1	
Selenium	2.7	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7782-49-2	
Silver	12.5	mg/kg	2.8	1	10/25/12 09:50	10/26/12 13:52	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:31	7440-39-3	
Cadmium	0.17	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:31	7440-43-9	
Chromium	0.18	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:31	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:31	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:20	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.30	1	10/29/12 11:15	10/30/12 14:38	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/31/12 13:27	10/31/12 18:49	95-48-7	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S02-102212 Lab ID: 5071213002 Collected: 10/22/12 12:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/31/12 13:27	10/31/12 18:49		
Nitrobenzene	ND ug/L		100	1	10/31/12 13:27	10/31/12 18:49	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/31/12 13:27	10/31/12 18:49	87-86-5	
Pyridine	ND ug/L		100	1	10/31/12 13:27	10/31/12 18:49	110-88-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/31/12 13:27	10/31/12 18:49	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/31/12 13:27	10/31/12 18:49	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	77 %		33-108	1	10/31/12 13:27	10/31/12 18:49	4165-60-0	
2-Fluorobiphenyl (S)	67 %		34-106	1	10/31/12 13:27	10/31/12 18:49	321-60-8	
p-Terphenyl-d14 (S)	89 %		31-122	1	10/31/12 13:27	10/31/12 18:49	1718-51-0	
Phenol-d5 (S)	13 %		10-56	1	10/31/12 13:27	10/31/12 18:49	4165-62-2	
2-Fluorophenol (S)	23 %		10-74	1	10/31/12 13:27	10/31/12 18:49	367-12-4	
2,4,6-Tribromophenol (S)	79 %		32-124	1	10/31/12 13:27	10/31/12 18:49	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 10:57	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 10:57	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 10:57	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 10:57	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 10:57	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 10:57	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 10:57	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 10:57	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 10:57	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 10:57	75-01-4	
Surrogates								
Toluene-d8 (S)	98 %		81-114	1		10/27/12 10:57	2037-26-5	
4-Bromofluorobenzene (S)	97 %		72-125	1		10/27/12 10:57	460-00-4	
Dibromofluoromethane (S)	98 %		83-123	1		10/27/12 10:57	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	30.0 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg	DT	14.3	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:18		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	20.3 mg/kg		0.71	1	10/26/12 12:04	10/26/12 13:48	57-12-5	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S03-102212 Lab ID: 5071213003 Collected: 10/22/12 13:50 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	123	1	10/25/12 10:03	10/25/12 18:07	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	64 %		32-105	1	10/25/12 10:03	10/25/12 18:07	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.2	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7440-38-2	
Barium	31.4	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7440-39-3	
Cadmium	ND	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7440-43-9	
Chromium	12.9	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7440-47-3	
Lead	8.1	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7439-92-1	
Selenium	ND	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7782-49-2	
Silver	ND	mg/kg	2.2	1	10/25/12 09:50	10/26/12 13:54	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:33	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:33	7440-39-3	
Cadmium	ND	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:33	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:33	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:33	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:33	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:33	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:22	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.26	1	10/29/12 11:15	10/30/12 14:40	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:55	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:55	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:55	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:55	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:55	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 14:55	95-48-7	

Date: 11/01/2012 10:53 AM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S03-102212 Lab ID: 5071213003 Collected: 10/22/12 13:50 Received: 10/24/12 07:35 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV TCLP Sep Funnel

Analytical Method: EPA 8270 Preparation Method: EPA 3510

Leachate Method/Date: EPA 1311; 10/26/12 13:00

3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 14:55		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:55	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 14:55	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 14:55	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	86 %		33-108	1	10/29/12 14:50	10/30/12 14:55	4165-60-0	
2-Fluorobiphenyl (S)	72 %		34-106	1	10/29/12 14:50	10/30/12 14:55	321-60-8	
p-Terphenyl-d14 (S)	86 %		31-122	1	10/29/12 14:50	10/30/12 14:55	1718-51-0	
Phenol-d5 (S)	13 %		10-56	1	10/29/12 14:50	10/30/12 14:55	4165-62-2	
2-Fluorophenol (S)	22 %		10-74	1	10/29/12 14:50	10/30/12 14:55	367-12-4	
2,4,6-Tribromophenol (S)	86 %		32-124	1	10/29/12 14:50	10/30/12 14:55	118-79-6	

8260 MSV TCLP

Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00

Benzene	ND ug/L		50.0	1		10/27/12 11:35	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 11:35	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 11:35	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 11:35	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 11:35	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 11:35	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 11:35	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 11:35	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 11:35	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 11:35	75-01-4	
Surrogates								
Toluene-d8 (S)	99 %		81-114	1		10/27/12 11:35	2037-26-5	
4-Bromofluorobenzene (S)	97 %		72-125	1		10/27/12 11:35	460-00-4	
Dibromofluoromethane (S)	98 %		83-123	1		10/27/12 11:35	1868-53-7	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	18.4 %		0.10	1		10/25/12 17:34		
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7196 Chromium, Hexavalent

Analytical Method: EPA 7196A Preparation Method: EPA 3060A

Chromium, Hexavalent	ND mg/kg	UJ	12.3	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
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733C S Reactive Cyanide

Analytical Method: SW-846 7.3.3.2

Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:19		
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9012 Cyanide, Total

Analytical Method: EPA 9012 Preparation Method: EPA 9012

Cyanide	ND mg/kg		0.61	1	10/26/12 12:04	10/26/12 13:49	57-12-5	
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11/2/12

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S03-102212D **Lab ID:** 5071213004 **Collected:** 10/22/12 14:00 **Received:** 10/24/12 07:35 **Matrix:** Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	127	1	10/25/12 10:03	10/25/12 18:13	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	59 %		32-105	1	10/25/12 10:03	10/25/12 18:13	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.4	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-38-2	
Barium	38.9	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-39-3	
Cadmium	2.8	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-43-9	
Chromium	29.0	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-47-3	
Lead	9.7	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7439-92-1	
Selenium	ND	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7782-49-2	
Silver	ND	mg/kg	2.4	1	10/25/12 09:50	10/26/12 13:57	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:41	7440-39-3	
Cadmium	ND	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:41	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:41	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:41	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:24	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.27	1	10/29/12 11:15	10/30/12 14:43	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:17	95-48-7	

Date: 11/01/2012 10:53 AM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S03-102212D Lab ID: 5071213004 Collected: 10/22/12 14:00 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 15:17		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:17	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:17	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:17	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:17	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:17	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	85 %		33-108	1	10/29/12 14:50	10/30/12 15:17	4165-60-0	
2-Fluorobiphenyl (S)	69 %		34-106	1	10/29/12 14:50	10/30/12 15:17	321-60-8	
p-Terphenyl-d14 (S)	92 %		31-122	1	10/29/12 14:50	10/30/12 15:17	1718-51-0	
Phenol-d5 (S)	13 %		10-56	1	10/29/12 14:50	10/30/12 15:17	4165-62-2	
2-Fluorophenol (S)	23 %		10-74	1	10/29/12 14:50	10/30/12 15:17	367-12-4	
2,4,6-Tribromophenol (S)	92 %		32-124	1	10/29/12 14:50	10/30/12 15:17	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 12:13	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 12:13	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 12:13	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 12:13	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 12:13	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 12:13	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 12:13	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 12:13	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 12:13	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 12:13	75-01-4	
Surrogates								
Toluene-d8 (S)	98 %		81-114	1		10/27/12 12:13	2037-26-5	
4-Bromofluorobenzene (S)	98 %		72-125	1		10/27/12 12:13	460-00-4	
Dibromofluoromethane (S)	98 %		83-123	1		10/27/12 12:13	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	21.4 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg	UT	12.7	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:21		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	0.72 mg/kg		0.64	1	10/26/12 12:04	10/26/12 13:50	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S04-102212 Lab ID: 5071213005 Collected: 10/22/12 14:10 Received: 10/24/12 07:35 Matrix: Solid
Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	57.1	1	10/29/12 11:28	10/29/12 21:24	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	75 %		32-105	1	10/29/12 11:28	10/29/12 21:24	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	12.7	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7440-38-2	
Barium	88.7	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7440-39-3	
Cadmium	6.0	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7440-43-9	
Chromium	28.4	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7440-47-3	
Lead	23.2	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7439-92-1	
Selenium	3.9	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7782-49-2	
Silver	ND	mg/kg	3.2	1	10/25/12 09:50	10/26/12 13:59	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:43	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:43	7440-39-3	
Cadmium	ND	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:43	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:43	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:43	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:43	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:43	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:26	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.34	1	10/29/12 11:15	10/30/12 12:48	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:38	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:38	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:38	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:38	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:38	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 15:38	95-48-7	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: BMF-S04-102212 Lab ID: 5071213005 Collected: 10/22/12 14:10 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel								
Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 15:38		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:38	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 15:38	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 15:38	88-08-2	
Surrogates								
Nitrobenzene-d5 (S)	85 %		33-108	1	10/29/12 14:50	10/30/12 15:38	4165-60-0	
2-Fluorobiphenyl (S)	71 %		34-106	1	10/29/12 14:50	10/30/12 15:38	321-60-8	
p-Terphenyl-d14 (S)	103 %		31-122	1	10/29/12 14:50	10/30/12 15:38	1718-51-0	
Phenol-d5 (S)	16 %		10-56	1	10/29/12 14:50	10/30/12 15:38	4165-62-2	
2-Fluorophenol (S)	28 %		10-74	1	10/29/12 14:50	10/30/12 15:38	367-12-4	
2,4,6-Tribromophenol (S)	105 %		32-124	1	10/29/12 14:50	10/30/12 15:38	118-79-6	
8260 MSV TCLP								
Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00								
Benzene	ND ug/L		50.0	1		10/27/12 12:51	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 12:51	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 12:51	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 12:51	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 12:51	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 12:51	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 12:51	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 12:51	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 12:51	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 12:51	75-01-4	
Surrogates								
Toluene-d8 (S)	98 %		81-114	1		10/27/12 12:51	2037-26-5	
4-Bromofluorobenzene (S)	98 %		72-125	1		10/27/12 12:51	460-00-4	
Dibromofluoromethane (S)	97 %		83-123	1		10/27/12 12:51	1868-53-7	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	38.7 %		0.10	1		10/25/12 17:34		
7196 Chromium, Hexavalent								
Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg	UJ	16.3	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
733C S Reactive Cyanide								
Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:22		
9012 Cyanide, Total								
Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	ND mg/kg		0.82	1	10/26/12 12:04	10/26/12 13:51	57-12-5	

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11/2/12

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071213

Sample: BMF-S05-102212 Lab ID: 5071213006 Collected: 10/22/12 14:20 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB Analytical Method: EPA 8082 Preparation Method: EPA 3546								
PCB-1016 (Aroclor 1016)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	151	1	10/25/12 10:03	10/25/12 18:39	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	51 %		32-105	1	10/25/12 10:03	10/25/12 18:39	877-09-8	
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	14.6	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7440-38-2	
Barium	85.7	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7440-39-3	
Cadmium	5.8	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7440-43-9	
Chromium	34.3	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7440-47-3	
Lead	23.2	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7439-92-1	
Selenium	3.6	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7782-49-2	
Silver	ND	mg/kg	2.8	1	10/25/12 09:50	10/26/12 14:14	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Arsenic	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:51	7440-38-2	
Barium	ND	mg/L	5.0	1	10/30/12 06:00	10/30/12 13:51	7440-39-3	
Cadmium	ND	mg/L	0.050	1	10/30/12 06:00	10/30/12 13:51	7440-43-9	
Chromium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:51	7440-47-3	
Lead	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:51	7439-92-1	
Selenium	ND	mg/L	0.10	1	10/30/12 06:00	10/30/12 13:51	7782-49-2	
Silver	ND	mg/L	0.50	1	10/30/12 06:00	10/30/12 13:51	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
Mercury	ND	mg/L	0.0020	1	10/30/12 10:10	10/31/12 14:30	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.32	1	10/29/12 11:15	10/30/12 12:54	7439-97-6	
8270 MSSV TCLP Sep Funnel Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Leachate Method/Date: EPA 1311; 10/26/12 13:00								
1,4-Dichlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 16:20	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 16:20	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 16:20	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	10/29/12 14:50	10/30/12 16:20	118-74-1	
Hexachloroethane	ND	ug/L	100	1	10/29/12 14:50	10/30/12 16:20	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	10/29/12 14:50	10/30/12 16:20	95-48-7	

Date: 11/01/2012 10:53 AM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071213

Sample: **BMF-S05-102212** Lab ID: **5071213006** Collected: 10/22/12 14:20 Received: 10/24/12 07:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV TCLP Sep Funnel

Analytical Method: EPA 8270 Preparation Method: EPA 3510

Leachate Method/Date: EPA 1311; 10/26/12 13:00

3&4-Methylphenol(m&p Cresol)	ND ug/L		200	1	10/29/12 14:50	10/30/12 16:20		
Nitrobenzene	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	98-95-3	
Pentachlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 16:20	87-86-5	
Pyridine	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	110-86-1	
2,4,5-Trichlorophenol	ND ug/L		500	1	10/29/12 14:50	10/30/12 16:20	95-95-4	
2,4,6-Trichlorophenol	ND ug/L		100	1	10/29/12 14:50	10/30/12 16:20	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	76 %		33-108	1	10/29/12 14:50	10/30/12 16:20	4165-60-0	
2-Fluorobiphenyl (S)	66 %		34-106	1	10/29/12 14:50	10/30/12 16:20	321-60-8	
p-Terphenyl-d14 (S)	87 %		31-122	1	10/29/12 14:50	10/30/12 16:20	1718-51-0	
Phenol-d5 (S)	13 %		10-56	1	10/29/12 14:50	10/30/12 16:20	4165-62-2	
2-Fluorophenol (S)	23 %		10-74	1	10/29/12 14:50	10/30/12 16:20	367-12-4	
2,4,6-Tribromophenol (S)	92 %		32-124	1	10/29/12 14:50	10/30/12 16:20	118-79-6	

8260 MSV TCLP

Analytical Method: EPA 8260 Leachate Method/Date: EPA 1311; 10/25/12 12:00

Benzene	ND ug/L		50.0	1		10/27/12 04:57	71-43-2	
2-Butanone (MEK)	ND ug/L		1000	1		10/27/12 04:57	78-93-3	
Carbon tetrachloride	ND ug/L		50.0	1		10/27/12 04:57	56-23-5	
Chlorobenzene	ND ug/L		50.0	1		10/27/12 04:57	108-90-7	
Chloroform	ND ug/L		50.0	1		10/27/12 04:57	67-66-3	
1,2-Dichloroethane	ND ug/L		50.0	1		10/27/12 04:57	107-06-2	
1,1-Dichloroethene	ND ug/L		50.0	1		10/27/12 04:57	75-35-4	
Tetrachloroethene	ND ug/L		50.0	1		10/27/12 04:57	127-18-4	
Trichloroethene	ND ug/L		50.0	1		10/27/12 04:57	79-01-6	
Vinyl chloride	ND ug/L		20.0	1		10/27/12 04:57	75-01-4	
Surrogates								
Toluene-d8 (S)	94 %		81-114	1		10/27/12 04:57	2037-26-5	
4-Bromofluorobenzene (S)	99 %		72-125	1		10/27/12 04:57	460-00-4	
Dibromofluoromethane (S)	97 %		83-123	1		10/27/12 04:57	1868-53-7	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	33.9 %		0.10	1		10/25/12 17:34
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7196 Chromium, Hexavalent

Analytical Method: EPA 7196A Preparation Method: EPA 3060A

Chromium, Hexavalent	ND mg/kg	UT	15.1	5	10/26/12 13:27	10/29/12 10:37	18540-29-9	D3
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733C S Reactive Cyanide

Analytical Method: SW-846 7.3.3.2

Cyanide, Reactive	ND mg/kg		0.025	1		10/29/12 14:23
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9012 Cyanide, Total

Analytical Method: EPA 9012 Preparation Method: EPA 9012

Cyanide	1.4 mg/kg		0.76	1	10/26/12 12:04	10/26/12 13:57	57-12-5
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21
11/2/12

November 06, 2012

Mr. John Behrens
Environmental Restoration
1666 Fabick Drive
Fenton, MO 63026

RE: Project: Baycote Metal Finishings
Pace Project No.: 5071481

Dear Mr. Behrens:

Enclosed are the analytical results for sample(s) received by the laboratory on October 30, 2012.

The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kenneth Hunt

kenneth.hunt@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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Indianapolis, IN 46268

(317)875-5894

CERTIFICATIONS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Indiana Certification IDs

7726 Moller Road Indianapolis, IN 46268

Indiana Certification #: C-49-06

Kansas Certification #: E-10247

Kentucky Certification #: 0042

Ohio VAP: CL0065

Pennsylvania: 68-00791

West Virginia Certification #: 330

Kansas Certification IDs

9608 Loiret Boulevard Lenexa, KS 66219

Oh, Oh, I changed it.....

A2LA Certification #: 2456.01

Arkansas Certification #: 05-008-0

Illinois Certification #: 001191

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407-08-TX

Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5071481001	BMF-WL01-102912	Water	10/29/12 09:00	10/30/12 08:07
5071481002	BMF-WL01-102912D	Water	10/29/12 09:10	10/30/12 08:07
5071481003	BMF-WL02-102912	Water	10/29/12 09:20	10/30/12 08:07
5071481004	BMF-WL03-102912	Water	10/29/12 09:30	10/30/12 08:07
5071481005	BMF-WL04-102912	Water	10/29/12 09:40	10/30/12 08:07
5071481006	BMF-WL05-102912	Water	10/29/12 09:50	10/30/12 08:07
5071481007	BMF-WS01-102912	Solid	10/29/12 10:00	10/30/12 08:07
5071481008	BMF-WS01-102912D	Solid	10/29/12 10:10	10/30/12 08:07
5071481009	BMF-WS02-102912	Solid	10/29/12 10:20	10/30/12 08:07
5071481010	BMF-WS03-102912	Solid	10/29/12 10:30	10/30/12 08:07
5071481011	BMF-WS04-102912	Solid	10/29/12 10:40	10/30/12 08:07
5071481012	BMF-WS05-102912	Solid	10/29/12 10:40	10/30/12 08:07

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SAMPLE ANALYTE COUNT

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5071481001	BMF-WL01-102912	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 1010	WDB	1	PASI-I
		SM 4500-H B	TPD	1	PASI-I
		EPA 7196	TPD	1	PASI-I
		SW-846 7.3.3.2 Modified	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
5071481002	BMF-WL01-102912D	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 1010	WDB	1	PASI-I
		SM 4500-H B	TPD	1	PASI-I
		EPA 7196	TPD	1	PASI-I
		SW-846 7.3.3.2 Modified	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
5071481003	BMF-WL02-102912	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 1010	WDB	1	PASI-I
		SM 4500-H B	TPD	1	PASI-I
		EPA 7196	TPD	1	PASI-I
		SW-846 7.3.3.2 Modified	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
5071481004	BMF-WL03-102912	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 1010	WDB	1	PASI-I
		SM 4500-H B	TPD	1	PASI-I
		EPA 7196	TPD	1	PASI-I
		SW-846 7.3.3.2 Modified	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
5071481005	BMF-WL04-102912	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 1010	WDB	1	PASI-I
		SM 4500-H B	TPD	1	PASI-I
		EPA 7196	TPD	1	PASI-I
		SW-846 7.3.3.2 Modified	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
5071481006	BMF-WL05-102912	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I

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SAMPLE ANALYTE COUNT

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5071481007	BMF-WS01-102912	EPA 1010	WDB	1	PASI-I
		SM 4500-H B	TPD	1	PASI-I
		EPA 7196	TPD	1	PASI-I
		SW-846 7.3.3.2 Modified	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
5071481008	BMF-WS01-102912D	EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
5071481009	BMF-WS02-102912	EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
5071481010	BMF-WS03-102912	EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5071481011	BMF-WS04-102912	EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I
5071481012	BMF-WS05-102912	EPA 6010	LLB	7	PASI-I
		EPA 6010	LLB	7	PASI-I
		EPA 7470	LLB	1	PASI-I
		EPA 7471	LLB	1	PASI-I
		ASTM D2974	DWC	1	PASI-K
		EPA 7196A	TPD	1	PASI-I
		SW-846 7.3.3.2	OL	1	PASI-K
		EPA 9012	ILP	1	PASI-I

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WL01-102912		Lab ID: 5071481001		Collected: 10/29/12 09:00		Received: 10/30/12 08:07		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7440-38-2		
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 10:58	7440-39-3		
Cadmium	ND ug/L		5.0	1	11/01/12 16:15	11/02/12 10:58	7440-43-9		
Chromium	41.5 ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7440-47-3		
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7439-92-1		
Selenium	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7782-49-2		
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 10:58	7440-22-4		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:01	7439-97-6		
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010							
Flashpoint	>180 deg F			1		10/31/12 15:17			
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B							
pH at 25 Degrees C	8.6 Std. Units			1		10/30/12 08:22		H6	
7196 Chromium, Hexavalent		Analytical Method: EPA 7196							
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:20	18540-29-9	H1	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified							
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:08			
9012 Cyanide, Total		Analytical Method: EPA 9012							
Cyanide	0.015 mg/L		0.010	1		11/06/12 14:44	57-12-5		

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WL01-102912D		Lab ID: 5071481002	Collected: 10/29/12 09:10	Received: 10/30/12 08:07	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 11:02	7440-39-3	
Cadmium	5.5 ug/L		5.0	1	11/01/12 16:15	11/02/12 11:02	7440-43-9	
Chromium	49.0 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7439-92-1	
Selenium	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 11:02	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:03	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		10/31/12 15:17		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	8.7 Std. Units			1		10/30/12 08:23		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:10	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:09		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	0.022 mg/L		0.010	1		11/06/12 14:47	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WL02-102912		Lab ID: 5071481003		Collected: 10/29/12 09:20		Received: 10/30/12 08:07		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:15	7440-38-2		
Barium	ND	ug/L	100	1	11/01/12 16:15	11/02/12 11:15	7440-39-3		
Cadmium	36.0	ug/L	5.0	1	11/01/12 16:15	11/02/12 11:15	7440-43-9		
Chromium	362	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:15	7440-47-3		
Lead	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:15	7439-92-1		
Selenium	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:15	7782-49-2		
Silver	ND	ug/L	50.0	1	11/01/12 16:15	11/02/12 11:15	7440-22-4		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	2.0	1	11/01/12 12:06	11/02/12 12:05	7439-97-6		
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010							
Flashpoint	>180	deg F		1		10/31/12 15:17			
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B							
pH at 25 Degrees C	7.7	Std. Units		1		10/30/12 08:24		H6	
7196 Chromium, Hexavalent		Analytical Method: EPA 7196							
Chromium, Hexavalent	ND	mg/L	0.010	1		10/30/12 09:19	18540-29-9		
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified							
Cyanide, Reactive	ND	mg/L	0.0050	1		11/05/12 15:12			
9012 Cyanide, Total		Analytical Method: EPA 9012							
Cyanide	0.13	mg/L	0.010	1		11/06/12 14:48	57-12-5		

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WL03-102912		Lab ID: 5071481004		Collected: 10/29/12 09:30		Received: 10/30/12 08:07		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	ND ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7440-38-2			
Barium	ND ug/L	100	1	11/01/12 16:15	11/02/12 11:19	7440-39-3			
Cadmium	183 ug/L	5.0	1	11/01/12 16:15	11/02/12 11:19	7440-43-9			
Chromium	408 ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7440-47-3			
Lead	10.4 ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7439-92-1			
Selenium	ND ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7782-49-2			
Silver	ND ug/L	50.0	1	11/01/12 16:15	11/02/12 11:19	7440-22-4			
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND ug/L	2.0	1	11/01/12 12:06	11/02/12 12:07	7439-97-6			
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010							
Flashpoint	>180 deg F		1		11/01/12 14:56				
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B							
pH at 25 Degrees C	7.5 Std. Units		1		10/30/12 08:25			H6	
7196 Chromium, Hexavalent		Analytical Method: EPA 7196							
Chromium, Hexavalent	ND mg/L	0.010	1		10/30/12 09:19	18540-29-9			
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified							
Cyanide, Reactive	ND mg/L	0.0050	1		11/05/12 15:12				
9012 Cyanide, Total		Analytical Method: EPA 9012							
Cyanide	0.077 mg/L	0.010	1		11/06/12 14:49	57-12-5			

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WL04-102912		Lab ID: 5071481005	Collected: 10/29/12 09:40	Received: 10/30/12 08:07	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	27.6 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 11:22	7440-39-3	
Cadmium	12.2 ug/L		5.0	1	11/01/12 16:15	11/02/12 11:22	7440-43-9	
Chromium	3310 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7439-92-1	
Selenium	23.1 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 11:22	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:09	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		11/01/12 14:56		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	9.8 Std. Units			1		10/30/12 08:27		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:19	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:13		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	2.8 mg/L		0.050	5		11/06/12 16:40	57-12-5	E

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WL05-102912		Lab ID: 5071481006		Collected: 10/29/12 09:50		Received: 10/30/12 08:07		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:26	7440-38-2		
Barium	ND	ug/L	100	1	11/01/12 16:15	11/02/12 11:26	7440-39-3		
Cadmium	334	ug/L	5.0	1	11/01/12 16:15	11/02/12 11:26	7440-43-9		
Chromium	103	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:26	7440-47-3		
Lead	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:26	7439-92-1		
Selenium	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:26	7782-49-2		
Silver	ND	ug/L	50.0	1	11/01/12 16:15	11/02/12 11:26	7440-22-4		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	2.0	1	11/01/12 12:06	11/02/12 12:11	7439-97-6		
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010							
Flashpoint	>180	deg F		1		11/01/12 14:56			
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B							
pH at 25 Degrees C	7.0	Std. Units		1		10/30/12 08:28		H6	
7196 Chromium, Hexavalent		Analytical Method: EPA 7196							
Chromium, Hexavalent	ND	mg/L	0.010	1		10/30/12 09:19	18540-29-9		
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified							
Cyanide, Reactive	ND	mg/L	0.0050	1		11/05/12 15:17			
9012 Cyanide, Total		Analytical Method: EPA 9012							
Cyanide	ND	mg/L	0.010	1		11/06/12 14:51	57-12-5		

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS01-102912 **Lab ID: 5071481007** Collected: 10/29/12 10:00 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.4	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-38-2	
Barium	17.2	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-39-3	
Cadmium	1520	mg/kg	9.8	5	11/02/12 14:52	11/05/12 21:45	7440-43-9	
Chromium	704	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-47-3	
Lead	619	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7439-92-1	
Selenium	102	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7782-49-2	
Silver	10	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:22	7440-39-3	
Cadmium	0.64	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:22	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7439-92-1	
Selenium	0.21	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:22	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	0.0026	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:25	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.88	mg/kg	0.20	1	11/05/12 11:50	11/06/12 11:04	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	18.5	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	20.0	10	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 14:55		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	813	mg/kg	20.0	40	11/01/12 10:27	11/01/12 14:32	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS01-102912D **Lab ID:** 5071481008 **Collected:** 10/29/12 10:10 **Received:** 10/30/12 08:07 **Matrix:** Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	4.5	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-38-2	
Barium	12.8	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-39-3	
Cadmium	1050	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-43-9	
Chromium	415	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-47-3	
Lead	558	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7439-92-1	
Selenium	126	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7782-49-2	
Silver	ND	mg/kg	17.6	10	11/02/12 14:52	11/06/12 13:17	7440-22-4	D3
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:36	7440-39-3	
Cadmium	5.1	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:36	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7439-92-1	
Selenium	0.31	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:36	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	0.0024	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:30	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.85	mg/kg	0.19	1	11/05/12 11:50	11/06/12 11:10	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	19.0	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	10.0	5	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 14:56		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	1880	mg/kg	40.0	80	11/01/12 10:27	11/01/12 14:41	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS02-102912 **Lab ID: 5071481009** Collected: 10/29/12 10:20 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	2.0	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:11	7440-38-2	
Barium	2.8	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:11	7440-39-3	
Cadmium	76.3	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:11	7440-43-9	
Chromium	1370	mg/kg	4.0	20	11/02/12 14:52	11/06/12 13:59	7440-47-3	
Lead	16.2	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:11	7439-92-1	
Selenium	ND	mg/kg	4.0	20	11/02/12 14:52	11/06/12 13:59	7782-49-2	D3
Silver	10.3	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:11	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:39	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:39	7440-39-3	
Cadmium	4.6	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:39	7440-43-9	
Chromium	0.60	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:39	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:39	7439-92-1	
Selenium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:39	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:39	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:32	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.020	1	11/05/12 11:50	11/06/12 11:12	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	96.5	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	1.2	mg/kg	1.0	1	10/31/12 13:15	11/01/12 10:32	18540-29-9	
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 14:59		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	12.9	mg/kg	0.50	1	11/01/12 10:27	11/01/12 14:20	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS03-102912 **Lab ID: 5071481010** Collected: 10/29/12 10:30 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.3	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7440-38-2	
Barium	35.9	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7440-39-3	
Cadmium	72.9	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7440-43-9	
Chromium	1280	mg/kg	4.0	10	11/02/12 14:52	11/06/12 13:25	7440-47-3	
Lead	25.1	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7439-92-1	
Selenium	0.78	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7782-49-2	
Silver	110	mg/kg	4.0	10	11/02/12 14:52	11/06/12 13:25	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:42	7440-39-3	
Cadmium	ND	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:42	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7439-92-1	
Selenium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:42	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:34	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.46	mg/kg	0.076	2	11/05/12 11:50	11/06/12 12:04	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	80.1	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	2.0	2	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	0.31	mg/kg	0.025	1		11/05/12 15:00		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	39.3	mg/kg	2.0	4	11/01/12 10:27	11/01/12 14:21	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS04-102912 **Lab ID:** 5071481011 **Collected:** 10/29/12 10:40 **Received:** 10/30/12 08:07 **Matrix:** Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	47.1	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7440-38-2	
Barium	1.2	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:19	7440-39-3	
Cadmium	188	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7440-43-9	
Chromium	9380	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7440-47-3	
Lead	ND	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7439-92-1	
Selenium	20.7	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:19	7782-49-2	
Silver	38.8	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:19	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 18:53	7440-39-3	
Cadmium	3.0	mg/L	0.050	1	11/01/12 16:15	11/05/12 18:53	7440-43-9	
Chromium	9.5	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7439-92-1	
Selenium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 18:53	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:36	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.020	1	11/05/12 11:50	11/06/12 11:16	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	92.2	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	2.0	2	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 15:01		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	36.3	mg/kg	1.0	2	11/01/12 10:27	11/01/12 14:39	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS05-102912 **Lab ID: 5071481012** Collected: 10/29/12 10:40 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	4.8	mg/kg	1.9	1	11/02/12 14:52	11/05/12 22:23	7440-38-2	
Barium	ND	mg/kg	1.9	1	11/02/12 14:52	11/05/12 22:23	7440-39-3	
Cadmium	ND	mg/kg	1.9	1	11/02/12 14:52	11/05/12 22:23	7440-43-9	
Chromium	61.4	mg/kg	1.9	1	11/02/12 14:52	11/05/12 22:23	7440-47-3	
Lead	ND	mg/kg	37.4	20	11/02/12 14:52	11/06/12 14:03	7439-92-1	D3
Selenium	ND	mg/kg	37.4	20	11/02/12 14:52	11/06/12 14:03	7782-49-2	D3
Silver	2.9	mg/kg	1.9	1	11/02/12 14:52	11/05/12 22:23	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 14:15	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 14:15	7440-39-3	
Cadmium	ND	mg/L	0.050	1	11/01/12 16:15	11/05/12 14:15	7440-43-9	
Chromium	0.50	mg/L	0.10	1	11/01/12 16:15	11/05/12 14:15	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 14:15	7439-92-1	
Selenium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 14:15	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 14:15	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND	mg/L	0.0020	1	11/01/12 14:07	11/02/12 13:19	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.19	1	11/05/12 11:50	11/06/12 11:19	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	29.5	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	5.0	1	10/31/12 13:15	11/01/12 10:32	18540-29-9	
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 15:04		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	0.65	mg/kg	0.50	1	11/05/12 13:59	11/06/12 14:58	57-12-5	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: MERP/4231 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011

METHOD BLANK: 824253 Matrix: Water
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	11/02/12 12:15	

LABORATORY CONTROL SAMPLE & LCSD: 824254		824255								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Mercury	mg/L	.015	0.016	0.016	108	110	80-120		20	

MATRIX SPIKE SAMPLE: 824257		5071481007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	0.0026	.015	0.020	115	75-125	

MATRIX SPIKE SAMPLE: 824258		5071484002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Parameter	Units						
Mercury	mg/L	ND	.015	0.017	105	75-125	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch:	MERP/4234	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury TCLP
Associated Lab Samples:	5071481012		

METHOD BLANK:	824266	Matrix:	Water
Associated Lab Samples:	5071481012		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0020	11/02/12 13:09	

LABORATORY CONTROL SAMPLE & LCSD:		824267	824268							
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Mercury	mg/L	.015	0.017	0.017	112	114	80-120		20	

MATRIX SPIKE SAMPLE:		824269								
Parameter	Units	5071481012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers			
Mercury	mg/L	ND	.015	0.016	106	75-125				

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch:	MERP/4230	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
Associated Lab Samples:	5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006		

METHOD BLANK:	824240	Matrix:	Water
Associated Lab Samples:	5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	2.0	11/02/12 11:42	

LABORATORY CONTROL SAMPLE: 824241						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 824242												824243	
Parameter	Units	5071540001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Mercury	ug/L	ND	5	5	5.1	5.2	103	104	75-125	1	20		

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: MERP/4237 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012

METHOD BLANK: 825547 Matrix: Solid
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.20	11/06/12 11:00	

LABORATORY CONTROL SAMPLE: 825548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.5	0.46	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825549 825550

Parameter	Units	5071481007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.88	.46	.46	1.5	1.2	137	69	75-125	23	20	1d,M3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825551 825552

Parameter	Units	5071633003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.84	.64	.66	1.2	1.5	60	96	75-125	18	20	M0

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: MPRP/10137

Analysis Method: EPA 6010

QC Batch Method: EPA 3050

Analysis Description: 6010 MET

Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012

METHOD BLANK: 825195

Matrix: Solid

Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	2.0	11/05/12 21:31	
Barium	mg/kg	ND	2.0	11/05/12 21:31	
Cadmium	mg/kg	ND	2.0	11/05/12 21:31	
Chromium	mg/kg	ND	2.0	11/05/12 21:31	
Lead	mg/kg	ND	2.0	11/05/12 21:31	
Selenium	mg/kg	ND	2.0	11/05/12 21:31	
Silver	mg/kg	ND	2.0	11/05/12 21:31	

LABORATORY CONTROL SAMPLE: 825196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	50.4	101	80-120	
Barium	mg/kg	50	50.4	101	80-120	
Cadmium	mg/kg	50	50.2	100	80-120	
Chromium	mg/kg	50	51.6	103	80-120	
Lead	mg/kg	50	49.3	99	80-120	
Selenium	mg/kg	50	50.9	102	80-120	
Silver	mg/kg	25	24.9	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825197

825198

Parameter	Units	5071481007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	6.4	48	45.1	58.5	55.6	108	109	75-125	5	20	
Barium	mg/kg	17.2	48	45.1	73.1	66.5	116	109	75-125	9	20	
Cadmium	mg/kg	1520	48	45.1	2620	1840	2300	715	75-125	35	20	P6, R2
Chromium	mg/kg	704	48	45.1	935	814	480	243	75-125	14	20	P6
Lead	mg/kg	619	48	45.1	493	518	-261	-223	75-125	5	20	P6
Selenium	mg/kg	102	48	45.1	142	159	83	126	75-125	11	20	M0
Silver	mg/kg	10	24	22.5	34.7	32.0	103	98	75-125	8	20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: MPRP/10127

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET TCLP

Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011

METHOD BLANK: 824592

Matrix: Water

Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	11/05/12 11:12	
Barium	mg/L	ND	5.0	11/05/12 11:12	
Cadmium	mg/L	ND	0.050	11/05/12 11:12	
Chromium	mg/L	ND	0.10	11/05/12 11:12	
Lead	mg/L	ND	0.10	11/05/12 11:12	
Selenium	mg/L	ND	0.10	11/05/12 11:12	
Silver	mg/L	ND	0.50	11/05/12 11:12	

LABORATORY CONTROL SAMPLE & LCSD: 824593

824594

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Arsenic	mg/L	10	9.5	9.4	95	94	80-120	.4	20	
Barium	mg/L	10	9.6	9.7	96	97	80-120	1	20	
Cadmium	mg/L	10	9.4	9.5	94	95	80-120	.4	20	
Chromium	mg/L	10	9.5	9.5	95	95	80-120	.8	20	
Lead	mg/L	10	9.3	9.3	93	93	80-120	.2	20	
Selenium	mg/L	10	9.4	9.4	94	94	80-120	.4	20	
Silver	mg/L	5	4.8	4.8	96	97	80-120	.9	20	

MATRIX SPIKE SAMPLE: 824595

Parameter	Units	5071481007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	10	9.6	96	50-150	
Barium	mg/L	ND	10	9.6	96	50-150	
Cadmium	mg/L	0.64	10	10.2	96	50-150	
Chromium	mg/L	ND	10	9.6	96	50-150	
Lead	mg/L	ND	10	8.4	84	50-150	
Selenium	mg/L	0.21	10	9.8	96	50-150	
Silver	mg/L	ND	5	4.9	98	50-150	

MATRIX SPIKE SAMPLE: 824596

Parameter	Units	5071484002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	10	10.0	100	50-150	
Barium	mg/L	ND	10	9.9	98	50-150	
Cadmium	mg/L	0.45	10	10.4	100	50-150	
Chromium	mg/L	ND	10	9.7	97	50-150	
Lead	mg/L	ND	10	9.4	94	50-150	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

MATRIX SPIKE SAMPLE:		824596					
Parameter	Units	5071484002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Selenium	mg/L	0.26	10	10.4	101	50-150	
Silver	mg/L	ND	5	4.9	99	50-150	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: MPRP/10130

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET TCLP

Associated Lab Samples: 5071481012

METHOD BLANK: 824605

Matrix: Water

Associated Lab Samples: 5071481012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	11/05/12 13:58	
Barium	mg/L	ND	5.0	11/05/12 13:58	
Cadmium	mg/L	ND	0.050	11/05/12 13:58	
Chromium	mg/L	ND	0.10	11/05/12 13:58	
Lead	mg/L	ND	0.10	11/05/12 13:58	
Selenium	mg/L	ND	0.10	11/05/12 13:58	
Silver	mg/L	ND	0.50	11/05/12 13:58	

LABORATORY CONTROL SAMPLE & LCSD: 824606

824607

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Arsenic	mg/L	10	9.7	9.8	97	98	80-120	.8	20	
Barium	mg/L	10	9.7	9.9	97	99	80-120	2	20	
Cadmium	mg/L	10	9.7	9.8	97	98	80-120	1	20	
Chromium	mg/L	10	9.7	9.8	97	98	80-120	1	20	
Lead	mg/L	10	9.4	9.5	94	95	80-120	1	20	
Selenium	mg/L	10	9.9	10	99	100	80-120	1	20	
Silver	mg/L	5	4.9	4.9	98	99	80-120	2	20	

MATRIX SPIKE SAMPLE: 824608

Parameter	Units	5071481012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	10	9.8	98	50-150	
Barium	mg/L	ND	10	9.8	98	50-150	
Cadmium	mg/L	ND	10	9.9	98	50-150	
Chromium	mg/L	0.50	10	10.2	97	50-150	
Lead	mg/L	ND	10	9.2	92	50-150	
Selenium	mg/L	ND	10	10.2	102	50-150	
Silver	mg/L	ND	5	5.0	100	50-150	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings
Pace Project No.: 5071481

QC Batch: MPRP/10131 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006

METHOD BLANK: 824653 Matrix: Water
Associated Lab Samples: 5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	11/02/12 10:31	
Barium	ug/L	ND	100	11/02/12 10:31	
Cadmium	ug/L	ND	5.0	11/02/12 10:31	
Chromium	ug/L	ND	10.0	11/02/12 10:31	
Lead	ug/L	ND	10.0	11/02/12 10:31	
Selenium	ug/L	ND	10.0	11/02/12 10:31	
Silver	ug/L	ND	50.0	11/02/12 10:31	

LABORATORY CONTROL SAMPLE: 824654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	962	96	80-120	
Barium	ug/L	1000	959	96	80-120	
Cadmium	ug/L	1000	948	95	80-120	
Chromium	ug/L	1000	954	95	80-120	
Lead	ug/L	1000	940	94	80-120	
Selenium	ug/L	1000	959	96	80-120	
Silver	ug/L	500	431	86	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 824655 824656

Parameter	Units	5071540001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.12 mg/L	1000	1000	1100	1100	98	98	75-125	.5	20	
Barium	ug/L	ND	1000	1000	1020	1020	97	97	75-125	.1	20	
Cadmium	ug/L	ND	1000	1000	972	969	97	97	75-125	.3	20	
Chromium	ug/L	ND	1000	1000	960	961	96	96	75-125	.1	20	
Lead	ug/L	ND	1000	1000	930	925	93	92	75-125	.5	20	
Selenium	ug/L	ND	1000	1000	973	973	97	97	75-125	.01	20	
Silver	ug/L	ND	500	500	463	407	93	81	75-125	13	20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: PMST/7935 Analysis Method: ASTM D2974
QC Batch Method: ASTM D2974 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012

METHOD BLANK: 1093140 Matrix: Solid
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	11/05/12 00:00	

SAMPLE DUPLICATE: 1093142

Parameter	Units	5071481007 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.5	20.1	8	20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: WET/10369 Analysis Method: SM 4500-H B
 QC Batch Method: SM 4500-H B Analysis Description: 4500H+B pH
 Associated Lab Samples: 5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006

SAMPLE DUPLICATE: 823232

Parameter	Units	5071481001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.6	8.6	.2		H6

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch:	WET/10375	Analysis Method:	EPA 7196A
QC Batch Method:	EPA 3060A	Analysis Description:	7196 Chromium, Hexavalent
Associated Lab Samples:	5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012		

METHOD BLANK:	823629	Matrix:	Solid
Associated Lab Samples:	5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/kg	ND	2.0	11/01/12 10:32	

LABORATORY CONTROL SAMPLE: 823630

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	940	806	86	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 823632 823633

Parameter	Units	5071481007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/kg	ND	972	966	ND	ND	1	.9	75-125	20	M3	

SAMPLE DUPLICATE: 823631

Parameter	Units	60131838002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chromium, Hexavalent	mg/kg	ND	ND		20	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch:	WET/10368	Analysis Method:	EPA 7196
QC Batch Method:	EPA 7196	Analysis Description:	7196 Chromium, Hexavalent
Associated Lab Samples:	5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006		

METHOD BLANK:	823227	Matrix:	Water
Associated Lab Samples:	5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	ND	0.010	10/30/12 09:10	

LABORATORY CONTROL SAMPLE: 823228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	.5	0.48	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 823229 823230

Parameter	Units	5071481001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	ND	.5	.5	0.48	0.50	96	100	85-115	4	20	H1

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch:	WETA/22330	Analysis Method:	SW-846 7.3.3.2
QC Batch Method:	SW-846 7.3.3.2	Analysis Description:	733C Reactive Cyanide
Associated Lab Samples:	5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012		

METHOD BLANK:	1092537	Matrix:	Solid
Associated Lab Samples:	5071481007, 5071481008, 5071481009, 5071481010, 5071481011, 5071481012		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	11/05/12 14:52	

LABORATORY CONTROL SAMPLE:	1092538
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Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.5	0.55	109	71-123	

MATRIX SPIKE SAMPLE:	1092539
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Parameter	Units	5071481007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.5	0.55	108	57-132	

SAMPLE DUPLICATE:	1092540
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Parameter	Units	5071481008 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	ND	.013J		23	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: WETA/22331 Analysis Method: SW-846 7.3.3.2 Modified
QC Batch Method: SW-846 7.3.3.2 Modified Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006

METHOD BLANK: 1092541 Matrix: Water
Associated Lab Samples: 5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/L	ND	0.0050	11/05/12 15:05	

LABORATORY CONTROL SAMPLE: 1092542

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	.05	0.051	101	74-121	

MATRIX SPIKE SAMPLE: 1092543

Parameter	Units	5071481001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/L	ND	.05	0.054	105	57-125	

SAMPLE DUPLICATE: 1092544

Parameter	Units	5071481002 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/L	ND	ND		26	

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: WETA/8785 Analysis Method: EPA 9012
QC Batch Method: EPA 9012 Analysis Description: 9012 Cyanide
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011

METHOD BLANK: 824112 Matrix: Solid
Associated Lab Samples: 5071481007, 5071481008, 5071481009, 5071481010, 5071481011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/kg	ND	0.50	11/01/12 13:37	

LABORATORY CONTROL SAMPLE: 824113

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 824114 824115

Parameter	Units	5071481007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	813	10	10	734	828	-784	155	90-110	12	20	P6

MATRIX SPIKE SAMPLE: 824116

Parameter	Units	5071555008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg		ND	11.5	13.2	114	90-110 M0

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch: WETA/8789

Analysis Method: EPA 9012

QC Batch Method: EPA 9012

Analysis Description: 9012 Cyanide

Associated Lab Samples: 5071481012

METHOD BLANK: 825073

Matrix: Solid

Associated Lab Samples: 5071481012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/kg	ND	0.50	11/06/12 14:56	

LABORATORY CONTROL SAMPLE: 825074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/kg	10	10.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825075

825076

Parameter	Units	5071665002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/kg	ND	10	10	11.3	10.6	113	106	90-110	6	20	M0

QUALITY CONTROL DATA

Project: Baycote Metal Finishings

Pace Project No.: 5071481

QC Batch:	WETA/8790	Analysis Method:	EPA 9012
QC Batch Method:	EPA 9012	Analysis Description:	9012 Cyanide, Total
Associated Lab Samples:	5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006		

METHOD BLANK:	825077	Matrix:	Water
Associated Lab Samples:	5071481001, 5071481002, 5071481003, 5071481004, 5071481005, 5071481006		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.010	11/06/12 14:42	

LABORATORY CONTROL SAMPLE: 825078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.2	0.21	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825079 825080

Parameter	Units	5071481001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	0.015	.2	.2	0.23	0.23	106	107	90-110	1	20	

QUALIFIERS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-I Pace Analytical Services - Indianapolis
PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

1d RPD value was outside control limits due to non-homogeneity of the analyte in the sample matrix.
D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
H1 Analysis conducted outside the EPA method holding time.
H6 Analysis initiated outside of the 15 minute EPA recommended holding time.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.
P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R2 RPD value was outside control limits due to matrix interference

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5071481007	BMF-WS01-102912	EPA 3050	MPRP/10137	EPA 6010	ICP/10569
5071481008	BMF-WS01-102912D	EPA 3050	MPRP/10137	EPA 6010	ICP/10569
5071481009	BMF-WS02-102912	EPA 3050	MPRP/10137	EPA 6010	ICP/10569
5071481010	BMF-WS03-102912	EPA 3050	MPRP/10137	EPA 6010	ICP/10569
5071481011	BMF-WS04-102912	EPA 3050	MPRP/10137	EPA 6010	ICP/10569
5071481012	BMF-WS05-102912	EPA 3050	MPRP/10137	EPA 6010	ICP/10569
5071481007	BMF-WS01-102912	EPA 3010	MPRP/10127	EPA 6010	ICP/10564
5071481008	BMF-WS01-102912D	EPA 3010	MPRP/10127	EPA 6010	ICP/10564
5071481009	BMF-WS02-102912	EPA 3010	MPRP/10127	EPA 6010	ICP/10564
5071481010	BMF-WS03-102912	EPA 3010	MPRP/10127	EPA 6010	ICP/10564
5071481011	BMF-WS04-102912	EPA 3010	MPRP/10127	EPA 6010	ICP/10564
5071481012	BMF-WS05-102912	EPA 3010	MPRP/10130	EPA 6010	ICP/10567
5071481001	BMF-WL01-102912	EPA 3010	MPRP/10131	EPA 6010	ICP/10559
5071481002	BMF-WL01-102912D	EPA 3010	MPRP/10131	EPA 6010	ICP/10559
5071481003	BMF-WL02-102912	EPA 3010	MPRP/10131	EPA 6010	ICP/10559
5071481004	BMF-WL03-102912	EPA 3010	MPRP/10131	EPA 6010	ICP/10559
5071481005	BMF-WL04-102912	EPA 3010	MPRP/10131	EPA 6010	ICP/10559
5071481006	BMF-WL05-102912	EPA 3010	MPRP/10131	EPA 6010	ICP/10559
5071481007	BMF-WS01-102912	EPA 7470	MERP/4231	EPA 7470	MERC/4267
5071481008	BMF-WS01-102912D	EPA 7470	MERP/4231	EPA 7470	MERC/4267
5071481009	BMF-WS02-102912	EPA 7470	MERP/4231	EPA 7470	MERC/4267
5071481010	BMF-WS03-102912	EPA 7470	MERP/4231	EPA 7470	MERC/4267
5071481011	BMF-WS04-102912	EPA 7470	MERP/4231	EPA 7470	MERC/4267
5071481012	BMF-WS05-102912	EPA 7470	MERP/4234	EPA 7470	MERC/4270
5071481001	BMF-WL01-102912	EPA 7470	MERP/4230	EPA 7470	MERC/4266
5071481002	BMF-WL01-102912D	EPA 7470	MERP/4230	EPA 7470	MERC/4266
5071481003	BMF-WL02-102912	EPA 7470	MERP/4230	EPA 7470	MERC/4266
5071481004	BMF-WL03-102912	EPA 7470	MERP/4230	EPA 7470	MERC/4266
5071481005	BMF-WL04-102912	EPA 7470	MERP/4230	EPA 7470	MERC/4266
5071481006	BMF-WL05-102912	EPA 7470	MERP/4230	EPA 7470	MERC/4266
5071481007	BMF-WS01-102912	EPA 7471	MERP/4237	EPA 7471	MERC/4272
5071481008	BMF-WS01-102912D	EPA 7471	MERP/4237	EPA 7471	MERC/4272
5071481009	BMF-WS02-102912	EPA 7471	MERP/4237	EPA 7471	MERC/4272
5071481010	BMF-WS03-102912	EPA 7471	MERP/4237	EPA 7471	MERC/4272
5071481011	BMF-WS04-102912	EPA 7471	MERP/4237	EPA 7471	MERC/4272
5071481012	BMF-WS05-102912	EPA 7471	MERP/4237	EPA 7471	MERC/4272
5071481007	BMF-WS01-102912	ASTM D2974	PMST/7935		
5071481008	BMF-WS01-102912D	ASTM D2974	PMST/7935		
5071481009	BMF-WS02-102912	ASTM D2974	PMST/7935		
5071481010	BMF-WS03-102912	ASTM D2974	PMST/7935		
5071481011	BMF-WS04-102912	ASTM D2974	PMST/7935		
5071481012	BMF-WS05-102912	ASTM D2974	PMST/7935		
5071481001	BMF-WL01-102912	EPA 1010	WET/10379		
5071481002	BMF-WL01-102912D	EPA 1010	WET/10379		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5071481003	BMF-WL02-102912	EPA 1010	WET/10379		
5071481004	BMF-WL03-102912	EPA 1010	WET/10386		
5071481005	BMF-WL04-102912	EPA 1010	WET/10386		
5071481006	BMF-WL05-102912	EPA 1010	WET/10386		
5071481001	BMF-WL01-102912	SM 4500-H B	WET/10369		
5071481002	BMF-WL01-102912D	SM 4500-H B	WET/10369		
5071481003	BMF-WL02-102912	SM 4500-H B	WET/10369		
5071481004	BMF-WL03-102912	SM 4500-H B	WET/10369		
5071481005	BMF-WL04-102912	SM 4500-H B	WET/10369		
5071481006	BMF-WL05-102912	SM 4500-H B	WET/10369		
5071481007	BMF-WS01-102912	EPA 3060A	WET/10375	EPA 7196A	WET/10383
5071481008	BMF-WS01-102912D	EPA 3060A	WET/10375	EPA 7196A	WET/10383
5071481009	BMF-WS02-102912	EPA 3060A	WET/10375	EPA 7196A	WET/10383
5071481010	BMF-WS03-102912	EPA 3060A	WET/10375	EPA 7196A	WET/10383
5071481011	BMF-WS04-102912	EPA 3060A	WET/10375	EPA 7196A	WET/10383
5071481012	BMF-WS05-102912	EPA 3060A	WET/10375	EPA 7196A	WET/10383
5071481001	BMF-WL01-102912	EPA 7196	WET/10368		
5071481002	BMF-WL01-102912D	EPA 7196	WET/10368		
5071481003	BMF-WL02-102912	EPA 7196	WET/10368		
5071481004	BMF-WL03-102912	EPA 7196	WET/10368		
5071481005	BMF-WL04-102912	EPA 7196	WET/10368		
5071481006	BMF-WL05-102912	EPA 7196	WET/10368		
5071481007	BMF-WS01-102912	SW-846 7.3.3.2	WETA/22330		
5071481008	BMF-WS01-102912D	SW-846 7.3.3.2	WETA/22330		
5071481009	BMF-WS02-102912	SW-846 7.3.3.2	WETA/22330		
5071481010	BMF-WS03-102912	SW-846 7.3.3.2	WETA/22330		
5071481011	BMF-WS04-102912	SW-846 7.3.3.2	WETA/22330		
5071481012	BMF-WS05-102912	SW-846 7.3.3.2	WETA/22330		
5071481001	BMF-WL01-102912	SW-846 7.3.3.2 Modified	WETA/22331		
5071481002	BMF-WL01-102912D	SW-846 7.3.3.2 Modified	WETA/22331		
5071481003	BMF-WL02-102912	SW-846 7.3.3.2 Modified	WETA/22331		
5071481004	BMF-WL03-102912	SW-846 7.3.3.2 Modified	WETA/22331		
5071481005	BMF-WL04-102912	SW-846 7.3.3.2 Modified	WETA/22331		
5071481006	BMF-WL05-102912	SW-846 7.3.3.2 Modified	WETA/22331		
5071481007	BMF-WS01-102912	EPA 9012	WETA/8785	EPA 9012	WETA/8787
5071481008	BMF-WS01-102912D	EPA 9012	WETA/8785	EPA 9012	WETA/8787
5071481009	BMF-WS02-102912	EPA 9012	WETA/8785	EPA 9012	WETA/8787
5071481010	BMF-WS03-102912	EPA 9012	WETA/8785	EPA 9012	WETA/8787
5071481011	BMF-WS04-102912	EPA 9012	WETA/8785	EPA 9012	WETA/8787
5071481012	BMF-WS05-102912	EPA 9012	WETA/8789	EPA 9012	WETA/8800
5071481001	BMF-WL01-102912	EPA 9012	WETA/8790		
5071481002	BMF-WL01-102912D	EPA 9012	WETA/8790		
5071481003	BMF-WL02-102912	EPA 9012	WETA/8790		
5071481004	BMF-WL03-102912	EPA 9012	WETA/8790		

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5071481005	BMF-WL04-102912	EPA 9012	WETA/8790		
5071481006	BMF-WL05-102912	EPA 9012	WETA/8790		

Sample Condition Upon Receipt

Pace Analytical

Client Name: Env. Restoration

Project # 5071481

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other Now

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Date/Time 5035A kits placed in freezer

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 1 2 3 4 6 A B C D E

Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 0.6°C, 0.3°C
(Corrected, if applicable)

Ice Visible in Sample Containers: ☐ yes ☒ no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: Kee 10-30-12

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>Not sure who accepted + they didn't relinquish</u>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. <u>pH</u>
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sample Labels match COC: -Includes date/time/ID/Analysis	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>NaOH containers for WL-01 & WL-01 D -</u> <u>labels labeled incorrectly from</u> <u>Key 10-30</u>
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, TOC, O&G	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9. (Circle) <u>HNO3</u> H2SO4 NaOH HCl <u>WL-04</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA Vials (>6mm)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	10.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Project Manager Review		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution:

⑧ What labels on containers say.

Project Manager Review:

Kenneth Hunt

Date: 10/30/12

Sample Container Count



CLIENT: Env. Restoration

COC PAGE 1 of 1
COC ID# 1605148

Project # 5071481

Sample Line

Comments

Item	DG9H	AG1U	WGFU	AG0U	R	4/6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H		
1								1	1	1	1	1	1	1	1	
2								1	1	1	1	1	1	1	1	
3								1	1	1	1	1	1	1	1	
4								1	1	1	1	1	1	1	1	
5								1	1	1	1	1	1	1	1	
6								1	1	1	1	1	1	1	1	
7								1	1	1	1	1	1	1	1	
8								1	1	1	1	1	1	1	1	
9								1	1	1	1	1	1	1	1	
10								1	1	1	1	1	1	1	1	
11								1	1	1	1	1	1	1	1	
12								1	1	1	1	1	1	1	1	

BP3C BP1U

Container Codes

DG9H	40mL HCL amber vial	AG0U	100mL unpreserved amber glass	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1 liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WG9U	40z clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved amber vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic		Wipe/Swab
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	AF	Air Filter	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved clear vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag

**BAYCOTE METAL FINISHING
MISHIWAKA, INDIANA
DATA VALIDATION REPORT**

Date: November 9, 2012

Laboratory: Pace Analytical Services, Inc. (Pace), Indianapolis, Indiana

Laboratory Project #: 5071481

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

Weston Work Order #: 20405.012.001.1843.00

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for six water and six solid samples collected for the Baycote Metal Finishing Removal Site that were analyzed for the following parameters and U.S. Environmental Protection Agency (U.S. EPA) methods:

- Metals by SW-846 Methods 6010 and 7471
- Toxicity Characteristic Leaching Procedures (TCLP) Metals by SW-846 Methods 1311, 6010, and 7470
- Total Cyanide by SW-846 Method 9012
- Reactive Cyanide by SW-846 Method 7.3.3.2
- Hexavalent Chromium by SW-846 Method 7196A
- Flashpoint by SW-846 Method 1010
- pH by Standard Method (SM) 4500-H B and ASTM D2974

A level II data package was requested from STAT. 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 Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

TOTAL METALS BY SW-846 METHODS 6010 AND 7471

1. Samples

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-WL01-102912	5071481001	Water	10/29/2012	11/2/2012
BMF-WL01-102912D	5071481002	Water	10/29/2012	11/2/2012
BMF-WL02-102912	5071481003	Water	10/29/2012	11/2/2012
BMF-WL03-102912	5071481004	Water	10/29/2012	11/2/2012
BMF-WL04-102912	5071481005	Water	10/29/2012	11/2/2012
BMF-WL05-102912	5071481006	Water	10/29/2012	11/2/2012
BMF-WS01-102912	5071481007	Solid	10/29/2012	11/5/2012 – 11/6/2012
BMF-WS01-102912D	5071481008	Solid	10/29/2012	11/5/2012 – 11/6/2012
BMF-WS02-102912	5071481009	Solid	10/29/2012	11/5/2012 – 11/6/2012
BMF-WS03-102912	5071481010	Solid	10/29/2012	11/5/2012 – 11/6/2012
BMF-WS04-102912	5071481011	Solid	10/29/2012	11/5/2012 – 11/6/2012
BMF-WS05-102912	5071481012	Solid	10/29/2012	11/5/2012 – 11/6/2012

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

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

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

5. MS and MSD Results

Site-specific MS and MSDs were analyzed for the metals analysis. The percent recoveries and RPDs were within QC limits except for as follows.

In some instances, the sample concentration was more than four times the spike amount and the spike was not adequately recovered. No qualifications are required in these instances.

For the spike of sample BMF-WS01-102912, one of the recoveries was low and one of the recoveries was high for mercury. In this sample, the mercury result was flagged “J” as estimated due to potential matrix interference.

6. **Field Duplicate Results**

There are two field duplicates in this work order identified with a “D” suffix in the sample name. The RPDs were calculated for detected metals and were acceptable. There were two instances where a metal was not detected in one sample but then was detected in the duplicate sample slightly above the QC limit. In general the field duplicate results were acceptable.

7. **Overall Assessment**

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

TCLP METALS BY SW-846 METHODS 1311, 6010, AND 7470

1. **Samples**

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

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-WS01-102912	5071481007	Solid	10/29/2012	11/2/2012 – 11/5/2012
BMF-WS01-102912D	5071481008	Solid	10/29/2012	11/2/2012 – 11/5/2012
BMF-WS02-102912	5071481009	Solid	10/29/2012	11/2/2012 – 11/5/2012
BMF-WS03-102912	5071481010	Solid	10/29/2012	11/2/2012 – 11/5/2012
BMF-WS04-102912	5071481011	Solid	10/29/2012	11/2/2012 – 11/5/2012
BMF-WS05-102912	5071481012	Solid	10/29/2012	11/2/2012 – 11/5/2012

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

Method blanks were analyzed with the metals analysis. The blanks were free of target analyte contamination above the reporting limits.

4. LCS Results

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

5. MS and MSD Results

A site-specific MS was analyzed and recoveries were within QC limits.

6. Field Duplicate Results

Sample BMF-WS01-102912D is a field duplicate of sample BMF-WS01-102912. The RPDs for detected metals were below a standard QC limit of 50 except for TCLP cadmium which had an RPD of 155. There is sample heterogeneity associated with TCLP cadmium in this sample. No qualifications are applied.

7. Overall Assessment

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

GENERAL CHEMISTRY PARAMETERS (Hexavalent Chromium by 7196A, Total Cyanide by 9012, Reactive Cyanide by 7.3.3.2, Flashpoint by SW-846 Method 1010, and pH by SM 4500-H B and ASTM D2974)

1. Samples

The following table summarizes the samples for which this data validation is being conducted. Note that the solid samples were not analyzed for pH and flashpoint.

Samples	Lab ID	Matrix	Date Collected	Date Analyzed
BMF-WL01-102912	5071481001	Water	10/29/2012	10/30/2012 – 11/6/2012
BMF-WL01-102912D	5071481002	Water	10/29/2012	10/30/2012 – 11/6/2012
BMF-WL02-102912	5071481003	Water	10/29/2012	10/30/2012 – 11/6/2012
BMF-WL03-102912	5071481004	Water	10/29/2012	10/30/2012 – 11/6/2012
BMF-WL04-102912	5071481005	Water	10/29/2012	10/30/2012 – 11/6/2012
BMF-WL05-102912	5071481006	Water	10/29/2012	10/30/2012 – 11/6/2012
BMF-WS01-102912	5071481007	Solid	10/29/2012	11/1/2012 – 11/5/2012
BMF-WS01-102912D	5071481008	Solid	10/29/2012	11/1/2012 – 11/5/2012
BMF-WS02-102912	5071481009	Solid	10/29/2012	11/1/2012 – 11/5/2012
BMF-WS03-102912	5071481010	Solid	10/29/2012	11/1/2012 – 11/5/2012
BMF-WS04-102912	5071481011	Solid	10/29/2012	11/1/2012 – 11/5/2012
BMF-WS05-102912	5071481012	Solid	10/29/2012	11/1/2012 – 11/5/2012

2. Holding Times

The holding times were acceptable for all analyses.

3. Method Blanks

Method blanks were analyzed and were free of target analyte contamination above the reporting limits.

4. LCS Results

The percent recoveries were within QC limits for all LCSs analyzed.

5. Laboratory Duplicate Results

Laboratory duplicates had acceptable results.

6. MS and MSD Results

Site-specific MS and MSDs were analyzed. The recoveries and RPDs were acceptable except for as follows.

For the cyanide MS/MSD for solid samples, the sample concentration was more than four times the spike amount and the spike was not adequately recovered. No qualifications are required in these instances.

For hexavalent chromium in the solid MS/MSD, the percent recoveries were very low. In solid samples, the detected results were flagged “J” and the quantitation limits for the non-detected hexavalent chromium results were flagged “UJ” as estimated due to apparent matrix interferences. The water MS/MSD for hexavalent chromium had recoveries within QC limits.

7. Field Duplicate Results

There are two field duplicates in this work order identified with a “D” suffix in the sample name. The RPDs were calculated and were acceptable except for total cyanide in field duplicate BMF-WS01-102912D. There is apparent sample heterogeneity associated with total cyanide in this solid sample.

8. Overall Assessment

The hexavalent chromium, total cyanide, reactive cyanide, flashpoint, and pH data are acceptable for use as qualified based on the information received.

Data Validation Report
Baycote Metal Finishing Site
Pace Analytical Services, Inc.
Laboratory Project #: 5071481

ATTACHMENT

**PACE ANALYTICAL SERVICES, INC.
RESULTS SUMMARY WITH QUALIFIERS**

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WL01-102912		Lab ID: 5071481001	Collected: 10/29/12 09:00	Received: 10/30/12 08:07	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 10:58	7440-39-3	
Cadmium	ND ug/L		5.0	1	11/01/12 16:15	11/02/12 10:58	7440-43-9	
Chromium	41.5 ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7439-92-1	
Selenium	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 10:58	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 10:58	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:01	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		10/31/12 15:17		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	8.6 Std. Units			1		10/30/12 08:22		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:20	18540-29-9	H1
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:08		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	0.015 mg/L		0.010	1		11/06/12 14:44	57-12-5	



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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WL01-102912D		Lab ID: 5071481002	Collected: 10/29/12 09:10		Received: 10/30/12 08:07		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 11:02	7440-39-3	
Cadmium	5.5 ug/L		5.0	1	11/01/12 16:15	11/02/12 11:02	7440-43-9	
Chromium	49.0 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7439-92-1	
Selenium	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:02	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 11:02	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:03	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		10/31/12 15:17		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	8.7 Std. Units			1		10/30/12 08:23		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:10	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:09		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	0.022 mg/L		0.010	1		11/06/12 14:47	57-12-5	



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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WL02-102912		Lab ID: 5071481003	Collected: 10/29/12 09:20		Received: 10/30/12 08:07		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:15	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 11:15	7440-39-3	
Cadmium	36.0 ug/L		5.0	1	11/01/12 16:15	11/02/12 11:15	7440-43-9	
Chromium	362 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:15	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:15	7439-92-1	
Selenium	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:15	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 11:15	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:05	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		10/31/12 15:17		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	7.7 Std. Units			1		10/30/12 08:24		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:19	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:12		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	0.13 mg/L		0.010	1		11/06/12 14:48	57-12-5	



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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WL03-102912		Lab ID: 5071481004	Collected: 10/29/12 09:30		Received: 10/30/12 08:07		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7440-38-2	
Barium	ND	ug/L	100	1	11/01/12 16:15	11/02/12 11:19	7440-39-3	
Cadmium	183	ug/L	5.0	1	11/01/12 16:15	11/02/12 11:19	7440-43-9	
Chromium	408	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7440-47-3	
Lead	10.4	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7439-92-1	
Selenium	ND	ug/L	10.0	1	11/01/12 16:15	11/02/12 11:19	7782-49-2	
Silver	ND	ug/L	50.0	1	11/01/12 16:15	11/02/12 11:19	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	2.0	1	11/01/12 12:06	11/02/12 12:07	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180	deg F		1		11/01/12 14:56		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	7.5	Std. Units		1		10/30/12 08:25		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND	mg/L	0.010	1		10/30/12 09:19	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND	mg/L	0.0050	1		11/05/12 15:12		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	0.077	mg/L	0.010	1		11/06/12 14:49	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WL04-102912		Lab ID: 5071481005	Collected: 10/29/12 09:40	Received: 10/30/12 08:07	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	27.6 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 11:22	7440-39-3	
Cadmium	12.2 ug/L		5.0	1	11/01/12 16:15	11/02/12 11:22	7440-43-9	
Chromium	3310 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7439-92-1	
Selenium	23.1 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:22	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 11:22	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:09	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		11/01/12 14:56		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	9.8 Std. Units			1		10/30/12 08:27		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:19	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:13		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	2.8 mg/L		0.050	5		11/06/12 16:40	57-12-5	E

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WL05-102912		Lab ID: 5071481006	Collected: 10/29/12 09:50	Received: 10/30/12 08:07	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Arsenic	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:26	7440-38-2	
Barium	ND ug/L		100	1	11/01/12 16:15	11/02/12 11:26	7440-39-3	
Cadmium	334 ug/L		5.0	1	11/01/12 16:15	11/02/12 11:26	7440-43-9	
Chromium	103 ug/L		10.0	1	11/01/12 16:15	11/02/12 11:26	7440-47-3	
Lead	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:26	7439-92-1	
Selenium	ND ug/L		10.0	1	11/01/12 16:15	11/02/12 11:26	7782-49-2	
Silver	ND ug/L		50.0	1	11/01/12 16:15	11/02/12 11:26	7440-22-4	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND ug/L		2.0	1	11/01/12 12:06	11/02/12 12:11	7439-97-6	
1010 Flashpoint,Closed Cup		Analytical Method: EPA 1010						
Flashpoint	>180 deg F			1		11/01/12 14:56		
4500H+ pH, Electrometric		Analytical Method: SM 4500-H B						
pH at 25 Degrees C	7.0 Std. Units			1		10/30/12 08:28		H6
7196 Chromium, Hexavalent		Analytical Method: EPA 7196						
Chromium, Hexavalent	ND mg/L		0.010	1		10/30/12 09:19	18540-29-9	
733C Reactive Cyanide		Analytical Method: SW-846 7.3.3.2 Modified						
Cyanide, Reactive	ND mg/L		0.0050	1		11/05/12 15:17		
9012 Cyanide, Total		Analytical Method: EPA 9012						
Cyanide	ND mg/L		0.010	1		11/06/12 14:51	57-12-5	

ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WS01-102912 Lab ID: 5071481007 Collected: 10/29/12 10:00 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.4	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-38-2	
Barium	17.2	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-39-3	
Cadmium	1520	mg/kg	9.8	5	11/02/12 14:52	11/05/12 21:45	7440-43-9	
Chromium	704	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-47-3	
Lead	619	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7439-92-1	
Selenium	102	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7782-49-2	
Silver	10	mg/kg	2.0	1	11/02/12 14:52	11/05/12 21:38	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:22	7440-39-3	
Cadmium	0.64	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:22	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7439-92-1	
Selenium	0.21	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:22	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:22	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	0.0026	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:25	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.88	mg/kg J	0.20	1	11/05/12 11:50	11/06/12 11:04	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	18.5	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	20.0	10	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 14:55		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	813	mg/kg	20.0	40	11/01/12 10:27	11/01/12 14:32	57-12-5	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS01-102912D Lab ID: 5071481008 Collected: 10/29/12 10:10 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	4.5	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-38-2	
Barium	12.8	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-39-3	
Cadmium	1050	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-43-9	
Chromium	415	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7440-47-3	
Lead	558	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7439-92-1	
Selenium	126	mg/kg	1.8	1	11/02/12 14:52	11/05/12 21:57	7782-49-2	
Silver	ND	mg/kg	17.6	10	11/02/12 14:52	11/06/12 13:17	7440-22-4	D3
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:36	7440-39-3	
Cadmium	5.1	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:36	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7439-92-1	
Selenium	0.31	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:36	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:36	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	0.0024	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:30	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.85	mg/kg	0.19	1	11/05/12 11:50	11/06/12 11:10	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	19.0	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	10.0	5	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 14:56		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	1880	mg/kg	40.0	80	11/01/12 10:27	11/01/12 14:41	57-12-5	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WS02-102912 Lab ID: 5071481009 Collected: 10/29/12 10:20 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	2.0 mg/kg		0.20	1	11/02/12 14:52	11/05/12 22:11	7440-38-2	
Barium	2.8 mg/kg		0.20	1	11/02/12 14:52	11/05/12 22:11	7440-39-3	
Cadmium	76.3 mg/kg		0.20	1	11/02/12 14:52	11/05/12 22:11	7440-43-9	
Chromium	1370 mg/kg		4.0	20	11/02/12 14:52	11/06/12 13:59	7440-47-3	
Lead	16.2 mg/kg		0.20	1	11/02/12 14:52	11/05/12 22:11	7439-92-1	
Selenium	ND mg/kg		4.0	20	11/02/12 14:52	11/06/12 13:59	7782-49-2	D3
Silver	10.3 mg/kg		0.20	1	11/02/12 14:52	11/05/12 22:11	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND mg/L		0.10	1	11/01/12 16:15	11/05/12 11:39	7440-38-2	
Barium	ND mg/L		5.0	1	11/01/12 16:15	11/05/12 11:39	7440-39-3	
Cadmium	4.6 mg/L		0.050	1	11/01/12 16:15	11/05/12 11:39	7440-43-9	
Chromium	0.60 mg/L		0.10	1	11/01/12 16:15	11/05/12 11:39	7440-47-3	
Lead	ND mg/L		0.10	1	11/01/12 16:15	11/05/12 11:39	7439-92-1	
Selenium	ND mg/L		0.10	1	11/01/12 16:15	11/05/12 11:39	7782-49-2	
Silver	ND mg/L		0.50	1	11/01/12 16:15	11/05/12 11:39	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND mg/L		0.0020	1	11/01/12 14:07	11/02/12 12:32	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND mg/kg		0.020	1	11/05/12 11:50	11/06/12 11:12	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	96.5 %		0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	1.2 mg/kg J		1.0	1	10/31/12 13:15	11/01/12 10:32	18540-29-9	
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		11/05/12 14:59		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	12.9 mg/kg		0.50	1	11/01/12 10:27	11/01/12 14:20	57-12-5	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WS03-102912 Lab ID: 5071481010 Collected: 10/29/12 10:30 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	6.3	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7440-38-2	
Barium	35.9	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7440-39-3	
Cadmium	72.9	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7440-43-9	
Chromium	1280	mg/kg	4.0	10	11/02/12 14:52	11/06/12 13:25	7440-47-3	
Lead	25.1	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7439-92-1	
Selenium	0.78	mg/kg	0.40	1	11/02/12 14:52	11/05/12 22:15	7782-49-2	
Silver	110	mg/kg	4.0	10	11/02/12 14:52	11/06/12 13:25	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 11:42	7440-39-3	
Cadmium	ND	mg/L	0.050	1	11/01/12 16:15	11/05/12 11:42	7440-43-9	
Chromium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7439-92-1	
Selenium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 11:42	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 11:42	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:34	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	0.46	mg/kg	0.076	2	11/05/12 11:50	11/06/12 12:04	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	80.1	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	2.0	2	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	0.31	mg/kg	0.025	1		11/05/12 15:00		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	39.3	mg/kg	2.0	4	11/01/12 10:27	11/01/12 14:21	57-12-5	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings

Pace Project No.: 5071481

Sample: BMF-WS04-102912 Lab ID: 5071481011 Collected: 10/29/12 10:40 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	47.1	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7440-38-2	
Barium	1.2	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:19	7440-39-3	
Cadmium	188	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7440-43-9	
Chromium	9380	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7440-47-3	
Lead	ND	mg/kg	20.0	100	11/02/12 14:52	11/06/12 13:28	7439-92-1	
Selenium	20.7	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:19	7782-49-2	
Silver	38.8	mg/kg	0.20	1	11/02/12 14:52	11/05/12 22:19	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7440-38-2	
Barium	ND	mg/L	5.0	1	11/01/12 16:15	11/05/12 18:53	7440-39-3	
Cadmium	3.0	mg/L	0.050	1	11/01/12 16:15	11/05/12 18:53	7440-43-9	
Chromium	9.5	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7440-47-3	
Lead	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7439-92-1	
Selenium	ND	mg/L	0.10	1	11/01/12 16:15	11/05/12 18:53	7782-49-2	
Silver	ND	mg/L	0.50	1	11/01/12 16:15	11/05/12 18:53	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND	mg/L	0.0020	1	11/01/12 14:07	11/02/12 12:36	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND	mg/kg	0.020	1	11/05/12 11:50	11/06/12 11:16	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	92.2	%	0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND	mg/kg	2.0	2	10/31/12 13:15	11/01/12 10:32	18540-29-9	D3
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND	mg/kg	0.025	1		11/05/12 15:01		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	36.3	mg/kg	1.0	2	11/01/12 10:27	11/01/12 14:39	57-12-5	

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ANALYTICAL RESULTS

Project: Baycote Metal Finishings
Pace Project No.: 5071481

Sample: BMF-WS05-102912 Lab ID: 5071481012 Collected: 10/29/12 10:40 Received: 10/30/12 08:07 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP Analytical Method: EPA 6010 Preparation Method: EPA 3050								
Arsenic	4.8 mg/kg		1.9	1	11/02/12 14:52	11/05/12 22:23	7440-38-2	
Barium	ND mg/kg		1.9	1	11/02/12 14:52	11/05/12 22:23	7440-39-3	
Cadmium	ND mg/kg		1.9	1	11/02/12 14:52	11/05/12 22:23	7440-43-9	
Chromium	61.4 mg/kg		1.9	1	11/02/12 14:52	11/05/12 22:23	7440-47-3	
Lead	ND mg/kg		37.4	20	11/02/12 14:52	11/06/12 14:03	7439-92-1	D3
Selenium	ND mg/kg		37.4	20	11/02/12 14:52	11/06/12 14:03	7782-49-2	D3
Silver	2.9 mg/kg		1.9	1	11/02/12 14:52	11/05/12 22:23	7440-22-4	
6010 MET ICP, TCLP Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Arsenic	ND mg/L		0.10	1	11/01/12 16:15	11/05/12 14:15	7440-38-2	
Barium	ND mg/L		5.0	1	11/01/12 16:15	11/05/12 14:15	7440-39-3	
Cadmium	ND mg/L		0.050	1	11/01/12 16:15	11/05/12 14:15	7440-43-9	
Chromium	0.50 mg/L		0.10	1	11/01/12 16:15	11/05/12 14:15	7440-47-3	
Lead	ND mg/L		0.10	1	11/01/12 16:15	11/05/12 14:15	7439-92-1	
Selenium	ND mg/L		0.10	1	11/01/12 16:15	11/05/12 14:15	7782-49-2	
Silver	ND mg/L		0.50	1	11/01/12 16:15	11/05/12 14:15	7440-22-4	
7470 Mercury, TCLP Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Leachate Method/Date: EPA 1311; 10/31/12 14:45								
Mercury	ND mg/L		0.0020	1	11/01/12 14:07	11/02/12 13:19	7439-97-6	
7471 Mercury Analytical Method: EPA 7471 Preparation Method: EPA 7471								
Mercury	ND mg/kg		0.19	1	11/05/12 11:50	11/06/12 11:19	7439-97-6	
Percent Moisture Analytical Method: ASTM D2974								
Percent Moisture	29.5 %		0.50	1		11/05/12 00:00		
7196 Chromium, Hexavalent Analytical Method: EPA 7196A Preparation Method: EPA 3060A								
Chromium, Hexavalent	ND mg/kg		5.0	1	10/31/12 13:15	11/01/12 10:32	18540-29-9	
733C S Reactive Cyanide Analytical Method: SW-846 7.3.3.2								
Cyanide, Reactive	ND mg/kg		0.025	1		11/05/12 15:04		
9012 Cyanide, Total Analytical Method: EPA 9012 Preparation Method: EPA 9012								
Cyanide	0.65 mg/kg		0.50	1	11/05/12 13:59	11/06/12 14:58	57-12-5	

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