SOLID WASTE INVESTIGATON REPORT

Roth Steel Facility
Syracuse, New York

March 2009

BROWN AND CALDWELL

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LIST OF ACRONYMS

ASP	Analytical Services Protocol
ASR	Automobile shredder fluff
ASTM	American Society for Testing and Materials
BC	Brown and Caldwell
Bgs	Below ground surface
BTEX	Benxene, toluene, ethylbenzene and xylenes
°C	Degrees Celcius
CLP	Contract Laboratory Program
CRQL	Contract Required Quantitation Limits
DER	Division of Environmental Remediation (NYSDEC)
Dup	Duplicate
DUSR	Data Usability Summary Report
ELAP	Environmental Laboratory Approval Program
EPA	Environmental Protection Agency
et al.	And others
GPS	Global positioning system
HASP	Health and Safety Plan
HPAHs	High molecular weight PAHs
ID	Internal Diameter
LCS	Laboratory Control Sample
LPAHs	Low molecular weight PAHs
µg/kg	Micrograms per kilogram
µg/L	Micrograms per liter
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
mgd	Million gallons per day
MGP	Manufactured gas plant
MS	Matrix spike
MSB	Matrix Spike Blank
MSD	Matrix spike duplicate
MSTP	Metropolitan Sewerage Treatment Plant
NA	Not applicable
NaCl	Sodium chloride
NAD	North American Datum
ND	Not Detected
NGVD	National geodetic vertical datum

NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORP	Oxidation-Reduction Potential
PAHs	Polynuclear aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PCDD	Polychlorinated dibenzo-p-dioxin
PCDF	Polychlorinated dibenzofuran
ppb	parts per billion
ppm	Parts per million
ppt	Parts per trillion
PVC	Polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
RB	Rinse blank
RI	Remedial Investigation
SVOCs	Semi-Volatile Organic Compounds
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
USGS	U.S. Geological Service
VOCs	Volatile Organic Compounds

1. INTRODUCTION

This Solid Waste Investigation Report was prepared to comply with Consent Order D7-1015-11-04, between Roth Steel Corporation and the New York State Department of Environmental Conservation (NYSDEC), dated December 28, 2007. Roth Steel Corporation operates a recycling facility (the Site) at 800 Hiawatha Boulevard in the City of Syracuse, Onondaga County, New York. Among the requirements of the Consent Order is an investigation "to determine if any contaminants are being released or migrating from two shredder fluff cells into waters of the state." This document reports on the required investigation.

Overall, the Investigation Report describes completed activities related to sample collection and analysis and presents the data obtained. Section 1 provides an overview of the Investigation Report including information on the Site description, Site history, regulatory considerations, previous investigations and the investigation objectives. Section 2 describes the investigation activities. Section 3 presents the results of the investigation. Section 4 discusses the data quality review, Section 5 presents the data assessment and Section 6 presents overall conclusions and recommendations. Section 7 provides a list of references cited in this document.

1.1 Site Description

The Roth Steel Recycling Facility is located in an industrial/commercial area on the southern end of Onondaga Lake in Onondaga County, in the City of Syracuse, New York (Figure 1). The Roth Steel Facility is a metal recycling facility which started circa 1967 and is still currently in operation. Various articles of scrap metal, primarily automobiles, are brought to the Facility for recovery of ferrous and non-ferrous metals. The primary scrap metal input is from discarded automobiles which are shredded and processed to recover the metals. When automobiles are shredded, the non-metallic portion of the residue is termed automobile shredder residue (ASR) or shredder fluff. ASR is reportedly buried in two small, adjacent areas at the Site which are referred to as Cell #1 and Cell #2 (Figure 2).

Adjacent to the Roth Steel Facility is the Metropolitan Sewerage Treatment Plant (MSTP). The MSTP is permitted to discharge an average of 80 million gallons per day (mgd) and can provide tertiary treatment for flows up to 120 mgd. In addition to the MSTP, six tributaries also provide flows into Onondaga Lake. Total quantities of groundwater discharged to the Lake are small compared to discharges of surface water (NYSDEC, 2004). A commercial rail line is located between the Site and Onondaga Lake.

The area climate is continental and moderately humid. Nearby Lake Ontario has a significant impact on the local weather system through the moderating influence on local air temperatures. The Ontario Lowland area receives an average of 36 to 38 inches of precipitation annually, with precipitation rather evenly distributed throughout the year. During the winter months, Lake Ontario provides a ready supply of moisture that interacts with cold dry air from the northwest, resulting in lake-effect snow squalls and winter storms that deposit on average, 100 to 120 inches of snow in the area.

1.2 Site History

The southern shore of Onondaga Lake was a primary location for salt production when the salt industry flourished in the Syracuse area. Construction of the Erie Canal led to a lowering of the Lake Level and exposure of previously submerged land area. Onondaga Lake has received more than 100 years of industrial and municipal sewage discharges. Prior to 1926, areas in and around Onondaga Lake were used as fill areas or waste beds for waste generated by the Solvay Process, which was used in the manufacture of soda ash and other products.

Based on the level of contamination present, Onondaga Lake was designated a Superfund Site (NYSDEC, 2004) in December 1994. The Onondaga Lake Superfund Site includes approximately 2,000 acres of waste beds containing more than 90 million cubic meters (118 cubic yards) of industrial waste. The Roth Steel Facility was constructed on one of the waste beds which is currently designated Waste Bed F in documents related to the Onondaga Lake remedial investigation (RI). This location was also originally used as a City of Syracuse municipal solid waste landfill (NYSDEC, 2002). The Roth Steel location (Waste Bed F) and MSTP location (Waste Bed G) are referred to as "other Honeywell Site" in Figure 4-15 of the 2002 RI Report for Onondaga Lake.

The 2002 RI Report states that...

> "...Honeywell wastes discharged to Onondaga Lake include mercury; benzene; toluene; ethylbenzene, and xylenes (BTEX); chlorinated benzenes; polycyclic aromatic hydrocarbons (PAHs) (primarily low molecular weight PAHs [LPAHs], but also some high molecular weight PAHs [HPAHs]; polychlorinated biphenyls (PCBs); polychlorinated dibenzo-*p*-dioxins and furans (PCDD/PCDFs); and Solvay waste (which was primarily composed of calcium carbonate, calcium silicate, and magnesium hydroxide, with lesser amounts of calcium oxide-calcium chloride complex, silicon dioxide, salt [NaCl], calcium chloride, aluminum or iron oxide, calcium hydroxide, calcium sulfate, ammonia, and metals [e.g., aluminum, arsenic, copper, lead, nickel, and zinc])..."

Concentrations of polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) as high as 6,760 parts per million (ppm) and 237.4 ppm, respectively, have been observed during the Onondaga Lake RI. The projected cost of lake-related remediation is over $451 million (Kates, 2006). Other environmental sites in the area include the Erie Boulevard Manufactured Gas Plant (MGP) Site, the Hiawatha Boulevard MGP Site and the American Bag and Metal Site.

1.3 Regulatory Considerations

This section discusses the regulation of ASR in New York State. The NYSDEC issued a Technical and Administrative Guidance Memorandum (TAGM) entitled "Disposal of Shredder Fluff" in September 1993 and revised it in March 1994. The TAGM stated that "requiring disposal of large volumes of fluff in hazardous waste landfills would severely pressure our available disposal capacity." It also stated that "...the Department has not applied its hazardous waste program regulations to the disposal of shredder fluff..." The TAGM also indicated that "...a 1991 Environmental Protection Agency (EPA) study on shredder fluff concluded that PCBs are less likely

to leach from fluff than a wide variety of soils." The TAGM allowed for the disposal of shredder fluff in New York State solid waste landfills once certain liner and leachate management requirements are in place.

In 2005 the NYSDEC rescinded the TAGM in lieu of the federal Toxic Substances Control Act (TSCA) 1998 revisions. These revisions rendered the TAGM obsolete because the TSCA set forth a regulatory scheme for the management of automobile and appliance shredder fluff which contains PCBs. The TSCA coded as 40 CFR 761 addresses among other things, the disposal of wastes containing PCBs at or above 50 ppm. Section 761.62(b)(1)(i) of TSCA allows for non-liquid PCB bulk product waste from the shredding of automobile or household appliances and automobiles (shredder waste) to be disposed in "...a municipal or non-municipal non-hazardous waste landfill." The TSCA [761.62(b)(1)(ii)] also allows other bulk product waste that leaches PCBs at <10 µg/L of water measured using a procedure used to simulate leachate generation, to be disposed in a municipal or non-municipal, non-hazardous waste landfill.

1.4 Previous Investigations

Nine soil borings made at the Roth Facility in 2004 to collect geotechnical data, confirmed that the Site lies on top of an area of significant fill. Copies of the 2004 boring logs were hand delivered to the NYSDEC on April 14th, 2008. Both pink and gray Solvay process waste, coal slag, ash, bricks, glass, wood, ceramics and wire were among the components of the fill. The Solvay waste tends to be very impermeable and transmit very little water (NYSDEC, 2002). Additionally, a relatively shallow water table was encountered with saturated conditions observed as shallow as 6 inches below the ground surface.

As noted previously, ASR or shredder fluff is reportedly buried in two small areas at the Site referred to as Cell #1 and Cell #2 (Figure 2). In October 1993 a residue characterization program conducted by W.Z. Baumgartner and Associates, Inc., revealed that the ASR ranges in thickness from only 2 to 4 feet and is overlain by 1 to 4 feet of sand. The overlying sand currently prevents contact, and hence exposure, to the underlying ASR. The total volume of Cells #1 and #2 was estimated as 6,300 cubic yards covering an area of approximately 1 acre. A total of 30 samples were collected during the 1993 study from within the shredder fluff in Cells #1 and #2. All samples were analyzed for total PCBs. Results from this sampling and analysis indicated the presence of PCBs in all but 2 of the 37 ASR samples (Roth Steel, 1993). Concentrations of PCBs in each of Cells #1 and #2 averaged 48.5 and 78 ppm, respectively. The 30 samples were also subjected to the Toxicity Characteristic Leaching Procedure (TCLP) and the leachate samples were analyzed for cadmium and lead. Additionally, two representative samples (one from each cell) were subjected to the TCLP and the leachates were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and extractable metals. None of the TCLP extract samples exceeded the applicable TCLP limit. Overall, the data indicate that chemicals are not leaching from the shredder fluff, consistent with related information presented in Section 1.3 above.

Since PCBs are very hydrophobic, they do not readily dissolve in water and their mobility is highly retarded. Instead, they adhere to soils and typically undergo microbially mediated dechlorination (i.e. biodegradation) under anaerobic conditions. The fluffy nature of the ASR also provides a relatively large surface area over which PCBs can adsorb and also be physically trapped.

Observations of PCB desorption (Cornelissen *et al.*, 1997) demonstrate a phenomenon called hysteresis in which organic chemicals (especially larger molecules such as PCBs) adsorbed into soil over a long period of time do not desorb as readily as freshly adsorbed chemicals. Based on the foregoing, it was not expected that area groundwater would contain any significant concentrations of PCBs.

1.5 Investigation Objectives

The aforementioned Consent Order required that an investigation be conducted to determine if any contaminants are being released or migrating from the two shredder fluff cells into the waters of the state. The Consent Order also states that "parameters to be sampled in the investigation plan must include, at a minimum, EPA Method 8260; EPA Method 8270; EPA Method 8082; and TAL metals." The groundwater matrix would be sampled and analyzed for metals on the EPA's Target Analyte List (TAL), and organic compounds using the EPA SW-846 Methods 8260, 8270 and 8082. Analytical methods for the metals were not specified.

The overall objective was to investigate whether chemicals in shredder fluff in Cells #1 and #2 are impacting the waters of New York State (i.e. groundwater).

2. INVESTIGATION ACTIVITIES

2.1 Overview

This section describes the field activities that were performed to comply with the requirements of the Consent Order. These activities involved a targeted program to collect and analyze surface soil and groundwater samples from the ASR area at the Roth Steel Facility. The sampling and analytical activities are described further below.

Overall, surface soil samples were collected from low areas located adjacent to the ASR Cells. Three soil borings were completed and monitoring wells installed in the vicinity of the ASR Cells. Groundwater samples were collected from each of these wells and submitted for analysis. In addition, field tests on the groundwater were also performed and documented. A representative of the NYSDEC Solid and Hazardous Materials Department was on site when borings, groundwater monitoring wells and surface soil sampling locations were finalized in the field.

2.2 Surface Soil

The NYSDEC had requested that soil from the grassy areas to the west and northeast of the ASR Cells be sampled and analyzed to determine whether ASR-associated chemicals traveled over land and impacted the surface soil in these areas. In response to this request, a total of six samples were collected at locations shown on Figure 2 from the 0- to 12-inch soil interval. The samples were submitted for analysis of the following parameters:

Parameter	Analytical Method
Polychlorinated Biphenyls (PCBs)	SW846-8082
Metals on the Target Analyte List (TAL)	SW846-6020
Mercury	SW846-7471A
Total Organic Carbon (TOC)	Lloyd Kahn

2.3 Groundwater

A total of 3 soil borings were advanced to a depth of 13 feet on September 12, 2009 at the locations shown in Figure 2. Soils encountered were described in the field note book and later transcribed to Boring Logs (Appendix A). ASR was not observed in any of the borings during performance of the field work. Two boring (MW-8 and MW-9) were located between the ASR Cells and the rail line to be downgradient of the ASR Cells. One additional boring (MW-7) was located in an area expected to be upgradient of the ASR Cells. Following completion of the soil borings, monitoring wells were installed at each location, developed and subsequently sampled. The locations and riser elevations of each of the monitoring wells were surveyed by a New York State licensed surveyor. The wells were screened between 3 feet below ground surface (bgs) and 13 feet bgs.

The new wells were developed following installation to remove fine sediment from the well screen, sand pack and surrounding formation. On October 3, 2008, following development and stabilization of the wells, groundwater samples were collected by low-flow sampling protocols for laboratory analysis. During the course of the low flow sampling, water levels and field measurements were made. The field measurements included groundwater levels, turbidity, temperature, pH, and specific conductivity. Overall, one round of groundwater samples was collected on October 3, 2008 from each well and submitted for analysis for the following parameters:

Parameter	Analytical Method
Volatile Organic Compounds (VOCs) on the Target Compound List (TCL)	SW846-8260
Semi-Volatile Organic Compounds (SVOCs) on the TCL	SW846-8270
Polychlorinated Biphenyls (PCBs)	SW846-8082
Metals on the Target Analyte List (TAL)	SW846-6020
Mercury	SW846-7471A

In addition to October 3, 2008, groundwater levels were also measured on November 21, 2008 and March 15, 2009.

3. INVESTIGATION RESULTS

3.1 Overview

Surface soil from a total of six locations were collected and submitted for laboratory analysis. A total of three groundwater monitoring wells were installed and developed. Field parameters were noted for groundwater in these wells and samples were collected for laboratory analysis. The Site hydrogeology and results of the soil and groundwater investigation activities are presented below.

3.2 Site Hydrogeology

The overburden deposits encountered by the borings in the solid waste study area consist of anthropogenic fill. The upper portion of the fill consists of poorly sorted gravel-sized material with lesser quantities of sand and silt. The lower portion of the fill consists of Solvay process waste, a white to light grey, silt-size granular material with relatively soft consistency (N values in the range of 2 to 8). The top of the Solvay waste deposit was found approximately 10 feet below ground surface. In the areas of MW-8 and MW-9, there is a 2 to 4 foot thick transition zone above the Solvay waste in which the Solvay waste has been intermixed with the overlying gravel and sand.

Shallow groundwater exists in unconfined conditions within the fill materials. The surface of the saturated zone (i.e. the water table) exists generally in the gravel and sand fill or, in the area of MW-7 and MW-8, in the transition zone between the Solvay waste and the gravel and sand fill. Figure 3 shows water table elevation contours based on water level measurements taken on November 21, 2008. Based on these contours, groundwater flows to the northwest, toward Onondaga Lake. Monitoring wells MW-7 and MW-8 are downgradient from solid waste Cells #1 and #2. Due to the greater permeability of the gravel and sand fill, groundwater flow velocities in this shallower zone are expected to be greater than in the underlying Solvay waste.

3.3 Surface Soil Investigation

A total of six soil samples were collected from the top foot of soil at the locations noted in Figure 2 and analyzed for PCBs, TOC and metals. The analytical data for PCBs are presented in Tables 3-1. Concentrations of total PCBs in soil ranged from not detected to 0.289 mg/kg. All individual PCB Aroclors were either not detected or observed at concentrations no greater than 0.200 mg/kg. Total organic carbon content ranged from 12 to 29 percent.

The results for metals in soils are presented in Table 3-2. Overall, a number of metals were detected at various concentrations. Calcium, iron, magnesium, aluminum, potassium and sodium were observed at the highest concentrations. Barium, chromium, nickel and zinc were also quantified but at lower concentrations. The rest of the metals were either not detected or detected at significantly low concentrations.

3.4 Groundwater Investigation

Soil borings were advanced at three locations on September 12, 2008 and subsequently converted into monitoring wells (MW-7 through MW-9). Monitoring well MW-7 is an upgradient well relative to Cells #1 and #2 while MW-8 and MW-9 represent downgradient conditions. Well construction details for the groundwater monitoring wells are provided in Appendix A and the field data are summarized in Table 3-3. Groundwater samples were collected on October 3, 2008 and submitted for analysis of VOCs, SVOCs, PCBs and metals. The analytical data for these samples are presented in Tables 3-4 through 3-7.

The analytical results for VOCs in groundwater are presented in Table 3-4. No more than three compounds of 48 analyzed were detected in each well. Acetone was detected only in MW-7 at 16 parts per billion (µ/L). Cyclohexane was detected in the upgradient well (MW-7) at too low a concentration to be quantified (indicated by a "J" flag by the laboratory) but not detected in the two downgradient wells. Methylcyclohexane was also detected in the upgradient well (MW-7) at a concentration of 7.6 parts per billion but not detected in the two downgradient wells. Methylene chloride was detected in all three wells at very low concentrations ranging from 5.4 to 9.1 parts per billion. All three results were flagged with a "B" to indicate that methylene chloride, which is a common laboratory contaminant, was also found in an associated blank. Methyl-t-butyl ether (MTBE) was detected in wells MW-8 and MW-9 at too low a concentration to be quantified (i.e. flagged with a "J" flag by the laboratory).

The analytical results for SVOCs in groundwater are presented in Table 3-5. Of 65 compounds for which analyses were performed, only 19 were detected. All detections except one were at too low concentrations to be quantified and were therefore flagged with a "J" flag by the laboratory). The one compound that was quantified was phenanthrene which had a concentration of 9 parts per billion in well MW-9.

The analytical results for PCBs are provided in Table 3-6. PCBs were not detected in any of the samples with one exception. Aroclor 1242 was reported in the sample from MW-7 (the upgradient well) at a concentration of 0.62 parts per billion. In attempting to understand this result, it was noted that the total suspended solids (TSS) in MW-7 was 283 mg/L at the time of sampling while that of the downgradient wells (MW-8 and MW-9) were 1.9 and 1.6 mg/L, respectively. The MW-7 TSS concentration is approximately 150 times the TSS in the downgradient wells.

The analytical results for metals in groundwater are presented in Table 3-7. These results indicated that metals were not detected, detected but not at quantifiable concentrations (indicated by a "B" flag) or measured at significant concentrations. The highest metal concentrations observed in groundwater are for calcium, magnesium, potassium and sodium. Five of the metals are at higher concentrations in one or both of the downgradient wells when compared to concentrations in the upgradient well. Arsenic was detected in well MW-8 but at a level too low to quantify as indicated by the "B" flag. Calcium (the primary constituent of Solvay waste), mercury and vanadium were lower in MW-8 but higher in MW-9 relative to the upgradient well (MW-7). However, the concentrations of mercury and vanadium were very low and close to their respective quantitation limits. The concentration of sodium was higher in MW-8 and highest in MW-9 relative to MW-7.

4. DATA QUALITY REVIEW

4.1 Overview

This investigation was performed by Brown and Caldwell associates on behalf of the Roth Steel Corporation. Subcontractors included Parratt-Wolff (drilling contractor), Test America (New York State DOH ELAP certified analytical laboratory) and D. W. Hannig, (New York State licensed surveyor). Quality assurance procedures detailed in the Work Plan were followed. A Qualitative Data Usability Summary Report (DUSR) was prepared by Brown and Caldwell personnel and is attached as Appendix B. The laboratory data Reports are included in a compact disc located in Appendix C.

The DUSR was developed by reviewing and evaluating the analytical data package for data deficiencies, analytical protocol deviations and any quality control problems. The evaluation was performed on the organic analytical data for 8 aqueous VOC samples, 7 aqueous SVOC samples, 10 soil and 7 aqueous metal samples, 10 soil and 7 aqueous PCB samples, and 10 soil TOC samples collected by Brown and Caldwell at the Roth Steel Site in Syracuse, New York. The samples were analyzed using Method SW846-8260B for volatile organic compounds (VOCs), 8270C for semi-volatile organic compounds (SVOCs), 6010 (ASP05) for metals analysis, 7470 and 7471 for mercury analysis, 8082 for polychlorinated biphenyls (PCBs) and Lloyd Kahn for TOC. This review was based on guidance provided by the most current NYSDEC/NYSDOH Analytical Services Protocol (ASP) and the U.S. Environmental Protection Agency (EPA) Region 2 data validation guidance.

The review included the parameters listed below. The parameters listed with an asterisk (*) were within acceptable limits.

- Data Completeness Review*
- Sample Temperatures*
- Holding Times*
- Analytical Detection Limits*
- Surrogate Recovery Data*
- MS/MSD Results*
- Laboratory Control Sample (LCS) Review*
- Evaluation of Laboratory Qualified Results*
- Review of QA/QC Samples*
- Laboratory Case Narrative Review*
- Overall Evaluation of Data and Potential Usability Issues*

4.2 Qualitative Data Review Summary

A summary of the data quality review for metals, VOCs, SVOCs, PCBs and TOC is presented below for soil and groundwater samples (as appropriate). Qualifiers noted in the data quality review were included in the data tables.

Metals

Aqueous: The majority of Metals data was not qualified during this review. There was only one issue with metals. The calcium detected in the MSD sample did not correspond to the MS sample and was therefore qualified.

Soil: The majority of Metals data was not qualified during this review. The laboratory control samples (LCS) did not result in any issues for metals. The MS/ MSD did have issues but this is not unexpected due to the non-homogenous matrix and possible lab contamination. Some of the results were qualified due to the RPDs and the detection limit criteria.

VOCs

Aqueous: The majority of VOC data was not qualified during this review. There were only two VOCs qualified during this review.

Soil: The soil VOC data were not qualified during this review.

SVOCs

Aqueous: The issue with the SVOC data in this report concerns the MS/MSD. The first analysis had several constituents out of their RPD ranges. The second and third analyses of the MS/MSD both showed considerable improvements, with only three and two constituents out of range, respectively. However, the last two analyses were completed outside of holding time. So the first set of results was used in order to comply with the hold time requirements.

Soil: The soil SVOC data were not qualified during this review.

PCBs

Aqueous: The PCB data were not qualified during this review.

Soil: The MS/MSD samples show some variation amongst one of the Aroclors, thus requiring qualification. This is not unexpected due to the heterogeneous nature of the soil matrix.

TOC

The TOC data were not qualified during this review.

5. DATA ASSESSMENT

Chemical soil and groundwater data collected during the investigation were compared to related objectives and standards, as appropriate. These comparisons are discussed below.

Soil Samples

Consistent with the current site use and zoning, the soil sampling data were compared to the New York State Brownfield Cleanup Program Industrial Soil Cleanup Objectives (6 NYCRR Subpart 375-6, Table 375-6.8(b)). The industrial SCOs apply to sites involved in manufacture, production, fabrication or assembly processes and ancillary services. Only cadmium at 82.5 mg/kg in sample B33 exceeded the New York State Brownfield Cleanup Program Industrial SCO (Table 375-6.8(b)) of 60 mg/kg by approximately one-third of its value. Apart from cadmium, concentrations of constituents in shallow soil were found to be acceptable for industrial use.

Groundwater Samples

Consistent with the Consent Order for the Site, chemical concentrations in groundwater were compared to the standards set forth in 6 NYCRR Section 703.5. Among the VOCs, only methylene chloride was detected at concentrations of a few parts per billion above the standard. However, methylene chloride was also found in the laboratory blank and was attributed as laboratory contamination by the analytical laboratory. Among the SVOCs, phenol, Benzo(a)anthracene, chrysene, benzo(b)fluoranthene and Benzo(k)fluoranthene exceeded the standards. With the exception of phenol, they were all at greater concentrations (although less than 1 part per billion) in the upgradient sample. The phenol exceedances occurred in one well at a concentration of 3 parts per billion which is two more than the standard of 1 part per billion. PCB Aroclor 1242 was the only PCB detection in the groundwater samples and was observed in the upgradient well at a concentration that exceeded the standard. However, this upgradient sample had a relatively high turbidity of 283 nephelometric turbidity units (NTU) versus the other two samples that had turbidities of 1.9 and 1.6 NTUs. Among the metals, aluminum, barium, iron, magnesium and sodium exceeded the corresponding standard. With the exception of sodium however, they were all at greater concentrations in the upgradient sample. Sodium was relatively high in all three wells.

6. CONCLUSIONS AND RECOMMENDATIONS

As noted in Section 1.5, the overall objective of this work was to investigate whether chemicals in shredder fluff in Cells #1 and #2 are impacting the waters of New York State (i.e. groundwater). Based upon a review of the data relative to corresponding standards referenced in the Consent Order, and an upgradient to downgradient comparison, there is no compelling evidence to indicate that the cells are adversely impacting the groundwater. Therefore, it is unnecessary to remove the Cells #1 and #2 materials. Consistent with the Consent Order, plans will be developed for covering the Cells #1 and #2 area in a manner that is acceptable to the NYSDEC and that allows continued use of the area for loading train cars.

7. REFERENCES

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TABLES

TABLE 3-1. Polychlorinated Biphenyls (PCBs) and Total Organic Carbon (TOC) in Soil.

DRAFT

Parameter	B31	B32*	B33	B34	B35	B36	SCO
Total Organic Carbon (%)							
TOC	14	15	12	17	29	13	NA
Polychlorinated Biphenyls (mg/kg)							
Aroclor 1016	U	U	U	U	U	U	NA
Aroclor 1221	U	U	U	U	U	U	NA
Aroclor 1232	U	U	U	U	U	U	NA
Aroclor 1242	U	U	U	U	U	U	NA
Aroclor 1248	U	U	U	U	U	U	NA
Aroclor 1254	0.150	0.059	0.200	J 0.023	U	U	NA
Aroclor 1260	E 0.072	E 0.040	E 0.089	J 0.012	R U	R U	NA
Total PCBs	0.222	0.099	0.289	J 0.035	U	U	25

NOTES:

PCB Polychlorinated biphenyls
TOC Total Organic Carbon
% Percent
Mg/kg Milligram per kilogram
U Not detected
J Below quantitation limit
E Deemed an estimate following data quality review
R Rejected following data quality review
SCO Table 375-6.8(b) Soil Cleanup Objectives (Industrial).
* Average of duplicate samples
NA None available
Samples were collected on 9/12/2008.

TABLE 3-2. Metals in Soil (mg/kg).

Parameter	B31	B32*	B33	B34	B35	B36	SCO
Aluminum	R 7580	R 8585	R 7530	R 7360	R 6090	R 10000	NA
Antimony	B 4.6	B 1.2	U	B 1.5	B 2.2	U	NA
Arsenic	10.4	8.2	8.2	10.3	12.8	7.0	16
Barium	E 433	E 154	E 445	E 300	E 204	E 146	10000[d]
Beryllium	0.89	1.0	0.69	0.90	0.94	0.91	2700
Cadmium	55.2	16	*82.5*	59.2	31.7	1.1	60
Calcium	R 137000	R 134000	R 127000	R 166000	R 103000	R 154000	NA
Chromium	241	76	342	202	168	38.3	800
Cobalt	6.7	5.3	7.0	5.9	6.0	9.7	NA
Copper	E 432	E 117	E 402	E 236	E 218	E 72.5	10000[d]
Iron	R 19100	R 9005	R 14600	R 13900	R 14500	R 15600	NA
Lead	E 807	E 248	E 809	E 442	E 370	E 83	3900
Manganese	E 463	E 246	E 394	E 322	E 166	E 353	10000[d]
Magnesium	R 8250	R 6390	R 8790	R 10700	R 6420	R 21900	NA
Nickel	45.7	19.8	44.2	30.3	37.8	35.8	10000[d]
Potassium	1430	1430	1480	1240	1080	1770	NA
Selenium	B 1.4	U	U	U	B 2.0	U	6800
Silver	31	2.4	47.1	25.7	18.2	0.2	6800
Mercury	3.7	8.7	3.5	1.6	1.9	0.505	5.7[j]
Sodium	823	783	605	1460	1660	1610	NA
Thallium	U	U	U	U	U	U	NA
Vanadium	21.7	27.8	23.3	31.3	35.3	26.7	NA
Zinc	E 1110	E 248	E 1130	E 661	E 506	E 340	10000[d]

NOTES:

mg/kg milligrams per kilogram

U Not detected

d SCO capped at maximum value of 10,000 mg/kg

B Below quantitation limit

E Deemed an estimate following data quality review

R Rejected following data quality review

j Lower of values for elemental or inorganic mercury

SCO Table 375-6.8(b) Soil Cleanup Objectives (Industrial)

82.5 Exceeds applicable SCO

* Average of duplicate samples

NA None available

Samples were collected on 9/12/2008.

TABLE 3-3. Groundwater Field Data.

Parameter	Unit	MW-7	MW-8	MW-9
pH		7.09	7.37	12.25
Temperature	°C	17.62	15.87	14.97
Specific Conductivity	mS/cm	2.287	1.869	4.542
Turbidity	NTU	283	1.9	1.6
Dissolved oxygen	mg/L	0.29	0.31	0.33
Groundwater Elevation (10/3/08)	ft	369.93	366.30	365.89
Groundwater Elevation (11/21/08)	ft	370.42	367.36	366.70
Groundwater Elevation (3/15/09)	ft	371.28	368.69	367.81

NOTES:

°C Degrees Celsius
mS Milli-Siemen
cm Centimeter
NTU Nephelometric turbidity units
mg/L Milligram per liter
ft Feet
Data collected on 10/3/2008 or as noted.

TABLE 3-4. Volatile Organic Compounds in Groundwater (µg/L). DRAFT

Parameters	MW-7	MW-8*	MW-9	Standard
Acetone	ND	ND	16	50
Benzene	ND	ND	ND	0.7
Bromodichloromethane	R ND	R ND	R ND	NA
Bromoform	ND	ND	ND	NA
Bromomethane	ND	ND	ND	NA
2-Butanone	ND	ND	ND	50
Carbon disulfide	ND	ND	ND	50
Carbon tetrachloride	ND	ND	ND	5
Chlorobenzene	ND	ND	ND	330
Chloroethane	ND	ND	ND	50
Chloroform	ND	ND	ND	7
Chloromethane	ND	ND	ND	NA
Cyclohexane	J 1.8	ND	ND	NA
1,2-Dibromoethane	ND	ND	ND	NA
Dibromochloromethane	ND	ND	ND	50
1,2-Dibromo-3-Chloropropane	ND	ND	ND	NA
1,2-Dichlorobenzene	ND	ND	ND	4.7
1,3-Dichlorobenzene	ND	ND	ND	5
1,4-Dichlorobenzene	ND	ND	ND	5
Dichlorodifluoromethane	ND	ND	ND	NA
1,1-Dichloroethane	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	5
1,1-Dichloroethene	ND	ND	ND	5
Cis-1,2-Dichloroethene	ND	ND	ND	NA
Trans-1,2-Dichloroethene	ND	ND	ND	5
1,2-Dichloropropane	ND	ND	ND	NA
Cis-1,3-dichloropropene	ND	ND	ND	NA
Trans-1,3-dichloropropene	ND	ND	ND	NA
Ethylbenzene	ND	ND	ND	5
2-Hexanone	ND	ND	ND	NA
Isopropylbenzene	ND	ND	ND	NA
Methyl Acetate	ND	ND	ND	NA
Methylcyclohexane	7.6	ND	ND	NA
Methylene chloride	B ***8.2***	B ***9.1***	B ***5.4***	5
4-Methyl-2-pentanone	ND	ND	ND	50
Methyl Tert-Butyl Ether	ND	J 1.8	J 1.2	NA
Styrene	ND	ND	ND	NA
1,1,2,2-Tetrachloroethane	ND	ND	ND	5
Tetrachloroethene	ND	ND	ND	5
Toluene	ND	ND	ND	5
1,2,4-Trichlorobenzene	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	5
1,1,2-Trichloroethane	ND	ND	ND	NA
1,1,2-Trichloro-1,2,2-Trifluorethane	ND	ND	ND	5
Trichlorofluoromethane	ND	ND	ND	NA
Trichloroethene	ND	ND	ND	5
Vinyl chloride	ND	ND	ND	2
Total Xylenes	ND	ND	ND	5

ND Not detected
J Below quantitation limit
* Average of duplicate samples
R Rejected following data quality review
Samples were collected on 10/03/2008

µL Micrograms per liter
B Detected in an associated blank
Standards are 6 NYCRR Section 703.5
NA None available
8.2 Exceeds applicable standard

TABLE 3-5. Semi-Volatile Organic Compounds (SVOCs) in Groundwater (μg/L).

DRAFT

COMPOUND	MW-7	MW-8*	MW-9	Standards
Benzaldehyde	R ND	R ND	R ND	NA
Phenol	ND	J 0.6	J 3	1
Bis (2-chloroethyl) ether	R ND	R ND	R ND	NA
2-Chlorophenol	ND	ND	ND	50
2-Methylphenol	ND	ND	ND	5
2,2'-Oxybis (1-Chloropropane)	ND	ND	ND	NA
Acetophenone	R ND	R ND	R ND	NA
4-Methylphenol	ND	ND	J 1	50
n-Nitroso-di-n-propylamine	ND	ND	ND	NA
Hexachloroethane	ND	ND	ND	NA
Nitrobenzene	ND	ND	ND	5
Isophorone	R ND	R ND	R ND	50
2-Nitrophenol	R ND	R ND	R ND	5
2,4-Dimethlyphenol	ND	ND	ND	NA
Bis(2-chloroethoxy)methane	R ND	R ND	R ND	NA
2,4-Dichlorophenol	R ND	R ND	R ND	1
Naphthalene	ND	ND	J 2	10
4-Chloroaniline	E ND	R ND	R ND	5
Hexachlorobutadiene	ND	ND	ND	NA
Caprolactam	R ND	R ND	R ND	NA
4-Chloro-3-methylphenol	ND	ND	ND	5
2-Methlynaphthalene	ND	ND	J 1	50
Hexachlorocyclopentadiene	ND	ND	ND	NA
2,4,6-Trichlorophenol	R ND	R ND	R ND	NA
2,4,5-Trichlorophenol	R ND	R ND	R ND	1
Biphenyl	R ND	R ND	E J 0.2	NA
2-Chloronaphthalene	ND	ND	ND	NA
2-Nitroaniline	R ND	R ND	R ND	5
Dimethylphthalate	E ND	R ND	R ND	50
Acenaphthylene	R ND	R ND	E J 0.3	20
2,6-Dinitrotoluene	R ND	R ND	R ND	5
3-Nitroaniline	R ND	R ND	R ND	5
Acenaphthene	ND	J 0.1	J 1	20
2,4-Dinitrophenol	ND	ND	ND	5
4-Nitrophenol	ND	ND	ND	5
Dibenzofuran	R ND	R ND	E J 1	5
2,4-Dinitrotoluene	R ND	R ND	R ND	NA
Diethyl phthalate	R ND	R ND	R ND	50
4-Chlorophenyl phenyl ether	R ND	R ND	R ND	NA
Fluorene	R ND	R ND	E J 2	50
4-Nitroaniline	ND	ND	ND	NA
4,6-Dinitro-2-methylphenol	ND	ND	ND	NA
N-nitrosodiphenylamine	R ND	R ND	R ND	NA
4-Bromophenyl-phenylether	R ND	R ND	R ND	NA
Hexachlorobenzene	R ND	R ND	R ND	0.35
Atrazine	R ND	R ND	R ND	NA
Pentachlorophenol	ND	ND	ND	1
Phenanthrene	E ND	E J 0.15	E 9	50
Anthracene	E ND	R J 0.15	E J 0.5	50
Carbazole	R ND	E J 0.30	E J 2	NA
Di-n-butylphthalate	E J 0.3	E J 0.30	E ND	50
Fluoranthene	E J 0.2	R J 0.10	R ND	50

TABLE 3-5. Semi-Volatile Organic Compounds (SVOCs) in Groundwater (µg/L).

DRAFT

COMPOUND	MW-7	MW-8*	MW-9	Standards
Pyrene	E J 0.3	R ND	R ND	50
Butylbenzylphthalate	E ND	R ND	R ND	50
3,3'-Dichlorobenzidine	R ND	R ND	R ND	NA
Benzo(a)anthracene	E J ***0.4***	E J ***0.15***	R ND	0.002
Chrysene	E J ***0.3***	R ND	R ND	0.002
Bis(2-ethylhexyl)phthalate	R ND	R ND	R ND	50
Di-n-octylphthalate	J ND	R ND	E ND	50
Benzo(b)fluoranthene	J ***0.2***	ND	ND	0.002
Benzo(k)fluoranthene	E J ***0.2***	E ND	R ND	0.002
Benzo(a)pyrene	E ND	E ND	E ND	0.002
Indeno(1,2,3-cd)pyrene	E ND	E ND	E ND	0.002
Dibenz(a,h)anthracene	E ND	E ND	E ND	50
Benzo(g,h,i)perylene	E ND	E ND	E ND	5

NOTES:

µL Micrograms per liter

ND Not detected

B Analyte found in associated blank.

J Below quantitation limit

E Deemed an estimate following data quality review

R Rejected following data quality review

* Average of duplicate samples

NA None available

0.3 Exceeds applicable standard

Standards are 6 NYCRR Section 703.5

Samples were collected on 10/03/2008.

TABLE 3-6. Polychlorinated Biphenyls (PCBs) in Groundwater (µg/L).

Parameter	MW-7	MW-8*	MW-9	Standards
Aroclor 1016	U	U	U	NA
Aroclor 1221	U	U	U	NA
Aroclor 1232	U	U	U	NA
Aroclor 1242	0.62	U	U	NA
Aroclor 1248	U	U	U	NA
Aroclor 1254	U	U	U	NA
Aroclor 1260	U	U	U	NA
Total PCBs	***0.62***	U	U	0.09

NOTES:

µL Micrograms per liter

PCBs Polychlorinated biphenyls

U Not detected

* Average of duplicate samples

NA None available

0.62 Exceeds applicable standard

Standards are 6 NYCRR Section 703.5

Samples were collected on 10/03/2008.

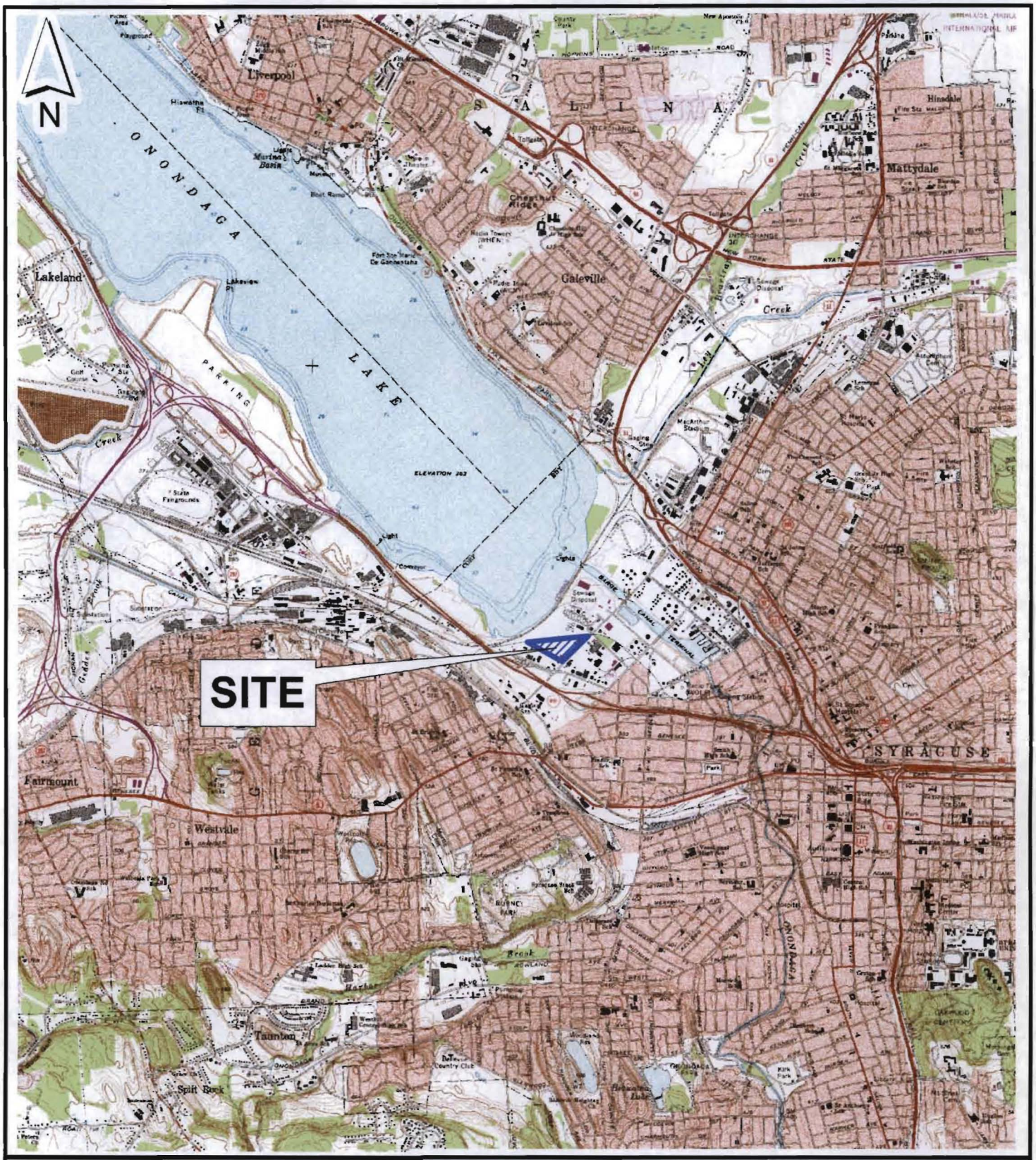
TABLE 3-7. Metals in Groundwater (μg/L). DRAFT

Parameter	MW-7	MW-8*	MW-9	Standards
Aluminum	***2,200***	B 82.5	B ***118***	100
Antimony	ND	ND	ND	33
Arsenic	ND	B 8.4	ND	63
Barium	***1290***	65.2	93.6	1000
Beryllium	ND	ND	B 0.57	11
Cadmium	1.2	ND	ND	55
Calcium	E 172,000	E 89,000	E 374,000	NA
Chromium	5.9	B 1.3	ND	50
Cobalt	B 1.4	ND	ND	5
Copper	79.1	ND	ND	200
Iron	***9,840***	***1,660***	73.6	300
Lead	47.9	ND	ND	50
Magnesium	***76,000***	***55,800***	563	35,000
Manganese	211	186	B 0.36	300
Nickel	13.6	B 5.8	B 2.8	100
Potassium	41,100	30,100	30,300	NA
Selenium	ND	ND	ND	10
Silver	ND	ND	ND	50
Mercury	B 0.148	ND	0.467	0.77
Sodium	***126,000***	***186,000***	***246,000***	20,000
Thallium	ND	ND	ND	8
Vanadium	B 4.2	B 2.2	6.4	14
Zinc	203	ND	ND	6695

NOTES:

μL Micrograms per liter
ND Not detected
B Below quantitation limit
E Deemed an estimate following data quality review
* Average of results for duplicate samples
NA None available
1,660 Concentration exceeds the applicable Standard
Standards are 6 NYCRR Section 703.5
Samples were collected on 10/03/2008.

FIGURES



0 2,400 4,800 9,600

SCALE IN FEET

SOURCE:

USGS 7.5 MIN. TOPOGRAPHIC MAP
SYRACUSE EAST QUAD, 1978

FIGURE 1

SITE LOCATION MAP
SOLID WASTE INVESTIGATION REPORT

PROJECT LOCATION

DRAFT

ROTH STEEL CORPORATION
SYRACUSE, NEW YORK

DATE	PROJECT NUMBER
FEBRUARY 2009	131364.010

BROWN AND CALDWELL

SYRACUSE, NEW YORK

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DRAFT

Legend

- SURFACE SOIL SAMPLE LOCATIONS
- SOIL BORING/MONITORING WELL LOCATIONS
- APPROXIMATE LOCATION OF CELLS 1 & 2

0 50 100 200 300 Feet

NOTE:
BASE MAP PREPARED BY D. W. HANNING, L.S.
DATED 6/29/2004

FIGURE 2

SAMPLING LOCATIONS
SOLID WASTE INVESTIGATION REPORT

PROJECT LOCATION	DATE	PROJECT NUMBER
ROTH STEEL CORPORATION SYRACUSE, NEW YORK	FEBRUARY 2009	131364.010

BROWN AND CALDWELL ASSOCIATES
SYRACUSE, NEW YORK

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Legend

- Water Table Contour in Feet (NAVD 88)
- Dashed Where Inferred
- MW-8 MONITORING WELL LOCATION
- APPROXIMATE LOCATION OF CELLS 1 & 2

Provide table showing gw elevation

DRAFT

Feet
0 75 150

FIGURE 3

WATER TABLE CONTOURS 11/21/08
SOLID WASTE INVESTIGATION REPORT

PROJECT LOCATION	DATE	PROJECT NUMBER
ROTH STEEL CORPORATION SYRACUSE, NEW YORK	FEBRUARY 2009	131364.010

BROWN AND CALDWELL ASSOCIATES
SYRACUSE, NEW YORK

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APPENDICES

APPENDIX A

Boring Logs and Well Construction Details

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Roth Steel Preliminary Investigation Project Number: 131364.040 Project Location: Syracuse, New York	Permit Number:	Well No. MW-7 Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
T Joki/Allendale		6.25"	2.0" PVC	.010"	13.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
9/12/08 - 9/12/08	Parratt Wolff	Hammer Type: Manual	Surge with Whale Pump

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: State Plane NY/NAD83 Easting: --
	Direct Push	Ingersoll Rand 8200	Vert Datum: -- Northing: --
			Ground Surface Elev: -- TOC Elev: --

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well (Stick Up)	PID Readings (ppm)	Remarks
		GW	Grey, cmf GRAVEL, little cmf Sand, trace Silt	14-14-13-12	1					N/A	0-1' Cement Pad
											1'-2' Bentonite Pellets
		GW	Grey, mf GRAVEL, little (-) mf Sand, trace (+) Silt	8-8-16-20	2						
		GW	Grey, mf GRAVEL, little (+) Silt, trace mf Sand	4-3-2-2	3						
5		SM	Brown, mf SAND, little (+) Silt								2'-13' #1 Filter Pack Sand
		GM	Grey, mf GRAVEL, little (+) mf Sand, trace (+) Silt	3-3-3-3	4						
		SM GM	Black, cm SAND, little (+) f Gravel, trace (+) Silt	3-3-2-1	5						3'-13' .010 Slot PVC Screen
10		ML	White SILT (Solvay Waste)	1-1-3-1	6						

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Roth Steel Preliminary Investigation Project Number: 131364.040 Project Location: Syracuse, New York	Permit Number:	Well No. MW-8 Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
T Joki/Allendale		6.25"	2.0" PVC	.010"	13.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
9/12/08 - 9/12/08	Parratt Wolff	Hammer Type: Manual	Surge with Whale Pump

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: State Plane NY/NAD83 Easting: --
	Direct Push	Ingersoll Rand 8200	Vert Datum: -- Northing: --
			Ground Surface Elev: -- TOC Elev: --

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well (Stick Up)	PID Readings (ppm)	Remarks
		GW	Grey, cmf GRAVEL, trace f Sand, trace Silt	30-26-31-35	1					N/A	0-1' Cement Pad
				50/4	2						1'-2' Bentonite Pellets
			(No recovery)	5-2-1-2	3						
5				3-3-2-2	4						2'-13' #1 Filter Pack Sand
		SM ML	Grey, mf SAND little (+) Silt (Solvay waste)	3-2-2-6	5						3'-13' .010 Slot PVC Screen
10		ML	White green SILT (Solvay waste with a slight green tint)	3-1-1-2	6						

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MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Roth Steel Preliminary Investigation Project Number: 131364.040 Project Location: Syracuse, New York	Permit Number:	Well No. MW-9 Page 1 of 1

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
T Joki/Allendale		6.25"	2.0" PVC	.010"	13.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
9/12/08 - 9/12/08	Parratt Wolff	Hammer Type: Manual	Surge with Whale Pump

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: State Plane NY/NAD83 Easting: --
	Direct Push	Ingersoll Rand 8200	Vert Datum: -- Northing: -- Ground Surface Elev: -- TOC Elev: --

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well (Stick Up)	PID Readings (ppm)	Remarks
		GW	Grey, cmf GRAVEL, little (-) mf Sand, trace (+) Silt	21-16-13-18	1					N/A	0-1' Cement Pad
											1'-2' Bentonite Pellets
				31-26-16-10	2						
		GW	Grey, cmf GRAVEL, little cmf Sand, trace (-) Silt	9-5-3-5	3						
5											2'-13' #1 Filter Pack Sand
		SW	Grey, cmf SAND little (+) Silt (Solvay waste)	7-6-7-10	4						
				2-1-1-1	5						
											3'-13' .010 Slot PVC Screen
10				2-6-2-1	6						
		ML CL	White SILT (Solvay Waste)								

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APPENDIX B

Data Usability Summary Report

DRAFT

BROWN AND CALDWELL

QUALITATIVE DATA USABILITY REPORT (DUSR)

SDG No.: A08-C276, A08-B234, A08-B250

Laboratory: Test America, Amherst, New York

Site: Roth Steel, Syracuse, New York

Date: February 23, 2009

Samples

Data from the following samples was reviewed (constituent groups in parentheses were added for clarity and were not included as part of the original sample name):

VOC	Aqueous (8 samples): MW-7 (MS/MSD), MW-8, MW-9, DUP100308, TB100308, and FB100308.
SVOC	Aqueous (7 samples): MW-7 (MS/MSD), MW-8, MW-9, DUP100308, and FB100308.
Metals	Soil (10 samples): B-31, B-32, B-33 (MS/MSD), B-34, B-35, B-36, DUP091208 and FB091208 (all samples include Mercury)
	Aqueous (7 samples): MW-7 (MS/MSD), MW-8, MW-9, DUP100308, and FB100308.
TOC	Soil (10 samples): B-31, B-32, B-33 (MS/MSD), B-34, B-35, B-36, DUP091208 and FB091208
PCBs	Soil (10 samples): B-31, B-32, B-33 (MS/MSD), B-34, B-35, B-36, DUP091208 and FB091208
	Aqueous (7 samples): MW-7 (MS/MSD), MW-8, MW-9, DUP100308, and FB100308.

A Qualitative Data Usability Review was performed on the organic analytical data for 8 aqueous VOC samples, 7 aqueous SVOC samples, 10 soil and 7 aqueous metal samples, 10 soil and 7 aqueous PCB samples, and 10 soil total organic carbon samples collected by Brown and Caldwell at the Roth Steel Site in Syracuse, New York. The samples were analyzed using Method SW846-8260B for volatile organic compounds (VOCs), 8270C for semi-volatile organic compounds (SVOCs), 6010 (ASP05) for metals analysis, 7470 and 7471

for mercury analysis, 8082 for polychlorinated biphenyls (PCBs), Lloyd Kahn for Total Organic Carbon TOC). This review was based on guidance provided by most current New York State Department of Environmental Protection (NYSDEC) Analytical Services Protocol (ASP) and the U.S. Environmental Protection Agency (EPA) Region 2 data validation guidance.

The review included the parameters listed below. The parameters listed with an asterisk (*) were within acceptable limits.

- Data Completeness Review*
- Sample Temperatures*
- Holding Times*
- Analytical Detection Limits*
- Surrogate Recovery Data*
- MS/MSD Results*
- Laboratory Control Sample (LCS) Review*
- Evaluation of Laboratory Qualified Results*
- Review of QA/QC Samples*
- Laboratory Case Narrative Review*
- Overall Evaluation of Data and Potential Usability Issues*

QUALITATIVE REVIEW SUMMARY

Metals

Aqueous: The majority of Metals data was not qualified during this review. There was only one issue with metals. The calcium detected in the MSD sample did not correspond to the MS sample, it required qualification.

Soil: The majority of Metals data was not qualified during this review. The laboratory control samples (LCS) did not result in any issues for metals. The MS/ MSD did have issues but this is not unexpected due to the non-homogenous matrix and possible lab contamination. Some of the results were qualified due to the RPDs and the detection limit criteria.

VOC

Aqueous: The majority of VOC data were not qualified during this review. There were only two VOCs qualified during this review.

Soil: The soil VOC data were not qualified during this review.

SVOC

Aqueous: The issue with the SVOC data in this report concerns the MS/MSD. The first analysis had several constituents out of their RPD ranges. The second and third analyses of the MS/MSD both showed considerable improvements, with only three and two constituents out of range, respectively. However, the last two analyses were completed outside of hold time. So the first set of results was used in order to comply with the hold time requirements.

Soil: The soil SVOC data were not qualified during this review.

PCB

Aqueous: The PCB data were not qualified during this review.

Soil: The MS/MSD samples show some variation amongst one of the Aroclors, thus requiring qualification. This is not unexpected due to the heterogeneous nature of the soil matrix.

Total Organic Carbon (TOC)

The TOC data were not qualified during this review.

OVERALL USABILITY ISSUES

The majority of the data was not impacted, did not require qualification, and therefore is acceptable for the intended purposes.

DESCRIPTION OF QUALITATIVE REVIEW

Data Completeness Review
Each of the criteria is in conformance.

Sample Temperature
Each of the criteria is in conformance.

Holding Times
Each of the criteria is in conformance.

Sample Moisture
B-31, B-33, B-34, and B-35 contained a 51%, 55%, 51%, and 61% moisture content, respectively. The criteria used for moisture in soil samples states that a 50-90% moisture content of a sample requires all data to be flagged with a "J".

Analytical Detection Limits
The detection limits for each of the constituents was compared to the NYCRR Part 375 Industrial standards. The majority of the detection limits were within range for each constituent. Some appeared elevated due to sample dilution; this does not reflect a systemic inability of the laboratory to meet the standards.

Surrogate Recovery Data
Each of the criteria for the aqueous samples is in conformance. One of the method blanks, SBLK79, did have one value outside of the QC range. It was 2-Fluorobiphenyl and it was detected at 47%. The range is from 48-120%; it was only outside of the limit by 1%, which would not require any action to be taken.

Each set of the criteria for the soil samples are in conformance, with a few exceptions. Below is a table which includes all samples with percent recoveries out of range during the initial analysis of SVOCs. The Actions were based on a 15% margin. If the data were within 15% of the given range then it received a "J." If the data were within 5% of the range then no action was required. If the data was outside the 15% margin then it required an "R."

Sample ID	Parameter	% Recovery and QC Limits		Bias	Action
FB091208	Decachlorobiphenyl	124	12-120	High	None
B-32	Decachlorobiphenyl	206	34-148	High	R
B-32	Tetrachloro-m-xylene	33	35-134	Low	None
DUP091208	Decachlorobiphenyl	542	34-148	High	R
DUP091208	Tetrachloro-m-xylene	152	35-134	High	J

MS/MSD Review

Aqueous:

The field MS/MSD was taken at MW-7. The first analysis of the MS/MSD showed several Relative Percent Differences (RPDs) outside of the QC limits, so the samples were re-extracted and re-analyzed. However, the second and third runs were both outside of hold time, so only the first analysis will be qualified. The following constituents from MS/MSD MW-7 were outside of the guidance criteria as specified by the lab.

MS from MW-7:

Constituent	Spike Added	MS Result	% Recovery	Limit	Bias	Action
Trichloroethene	100	129	129	77-123	High	None
Benzene	100	132	132	76-121	High	J
Toluene	100	121	121	69-120	High	None
3,3-Dichlorobenzidine	99.0	15	15	33-140	Low	R

MSD from MW-7:

Constituent	% Recovery	Recovery Limit	RPD	RPD Limit	Bias	Action
Acenaphthylene	--	--	24	18	--	R
Acetophenone	--	--	24	20	--	J
Anthracene	--	--	26	15	--	R
Atrazine	--	--	27	20	--	J
Benzaldehyde	--	--	24	20	--	J
Benzo(a)anthracene	--	--	26	15	--	R
Benzo(b)fluoranthene	134	75-133	18	15	High	None
Benzo(k)fluoranthene	--	--	42	22	--	R
Benzo(g,h,i)perylene	--	--	27	15	--	R
Benzo(a)pyrene	141	74-126	28	15	High	J
Biphenyl	--	--	24	20	--	J
Bis(2-chloroethoxy) methane	--	--	25	17	--	R
Bis(2-chloroethyl) ether	--	--	25	21	--	J

Constituent	% Recovery	Recovery Limit	RPD	RPD Limit	Bias	Action
2,2-Oxybis(1-chloropropane)	--	--	26	24	--	J
Bis(2-ethylhexyl) phthalate	--	--	27	15	--	R
4-bromophenyl phenyl ether	--	--	25	15	--	R
Butyl benzyl phthalate	--	--	27	16	--	R
Caprolactum	--	--	24	20	--	J
Carbazole	--	--	26	20	--	R
4-chloroaniline			25	22	--	J
4-chlorophenyl phenyl ether	--	--	23	16	--	R
Chrysene	--	--	30	15	--	R
Dibenzo(a,h)anthracene	--	--	27	15	--	R
Dibenzofuran	--	--	23	15	--	R
Di-n-butyl phthalate	--	--	26	15	--	R
3,3-Dichlorobenzidine	21	33-140	33	25	High	R
2,4-dichlorophenol	--	--	22	19	--	J
Diethyl phthalate	--	--	23	15	--	R
Dimethyl phthalate	--	--	23	15	--	R
4,6-dinitro-2-methylphenol	--	--	24	15	--	R
2,4-dinitrotoluene	--	--	24	20	--	J
2,6-dinitrotoluene	--	--	23	15	--	R
Di-n-octyl phthalate	--	--	28	16	--	R
Fluoranthene	--	--	26	15	--	R
Fluorene	--	--	24	15	--	R
Hexachlorobenzene	--	--	24	15	--	R
Indeno(1,2,3-cd) pyrene	--	--	28	15	--	R
Isophorone	--	--	25	17	--	R
2-Nitroaniline	--	--	19	15	--	R
3-nitroaniline	--	--	23	19	--	J
Nitrobenzene	--	--	25	24	--	None
2-nitrophenol	--	--	23	18	--	R
N-nitrosodiphenylamine	140	25-125	25	15	High	J
Phenanthrene	--	--	24	15	--	R
Pyrene	--	--	25	19	--	R
2,4,5-trichlorophenol	--	--	23	18	--	R
2,4,6-trichlorophenol	--	--	24	19	--	R
Calcium	58	--	--	--	High	J

Soil:

The field MS/MSD was taken at B-33. The following constituents from MS/MSD B-33 were outside of the guidance criteria as specified by the lab. Some of the metals' limits were not listed in the report; however, based on review and comparison all of the metals listed below were qualified.

MS from B-33:

Constituent	Spike Added	MS Result	% Recovery	Limit	Bias	Action
Aroclor 1260	360	215	35	51-179	Low	R
Aluminum	--	--	141	75-125	High	J
Barium	--	--	159	--	High	J
Calcium	--	--	1143	--	High	R
Copper			165	--	High	J
Iron			148	75-125	High	J
Lead	--	--	221	--	High	R
Magnesium	--	--	134	75-125	High	J
Manganese	--	--	174	--	High	J
Zinc	--	--	150	--	High	J

MSD from B-33:

Constituent	% Recovery	Recovery Limit	RPD	RPD Limit	Bias	Action
Aroclor 1260	44	51-179	--	--	Low	J
Antimony	--	--	73	73-125	Low	None
Barium	--	--	168	--	High	J
Calcium	--	--	-508	--	Low	R
Chromium	--	--	179	--	High	J
Copper	--	--	171	--	High	J
Lead	--	--	234	--	High	R
Mercury	--	--	32	--	Low	R
Silver	--	--	152	75-125	High	R
Zinc	--	--	313	--	High	R

The constituents with the RPDs above or below the RPD limits do not have a bias listed because it was not an accuracy issue; it was a precision issue between the MS results and the MSD results. The MS and MSD results were not out of criteria but there was such a difference in the data that it was reflected in the RPD. The "R" listed in the Action column for several of the constituents, represents data that should be rejected due to its extreme percent recoveries (greater than a 20% difference). The constituents with "None" denoted in their Action column falls within 10% of the limit, so no further action was taken. Every constituent with a "J" listed has been qualified due to high or low bias. The results impacted by the samples' bias are listed in the table found at the end of the report.

Laboratory Control Sample (LCS) Review (Matrix Spike Blank Recovery):

The aqueous matrix spike blanks were non-detected for most of the analyzed constituents. There were two analytes out of range Benzo(a)pyrene at 133% (range is 74-126) and N-nitrosodiphenylamine at 129% (range is 25-125). Both constituents are within a 10% range, thus do not require qualification.

The soil matrix spike blanks were non-detect for all analytes.

Evaluation of Laboratory Qualified Results
Brown and Caldwell concurs with the use of the laboratory qualifications.

QC Samples

Duplicates:

Aqueous: DUP100308 is a duplicate of MW-8. When comparing the sample results with the DUP results all of the constituents were consistent, except for two. Naphthalene was detected at 0.2J in MW-8, but not in the DUP. Di-n-octyl phthalate was present in the DUP at 0.3 BJ, but non-detect in MW-8. Both constituents were flagged with a "J", which stands for an estimated value, so since the value is estimated, as well as being minimal, no further qualification is required.

Soil: DUP091208 is a duplicate of B-32. When comparing the sample results with the DUP results each of the constituents was consistent; every compound that was detected in one sample was detected in the other, except for Antimony. However, the sample result for Antimony was only an estimated value as signified by the "B." The rest of the RPDs are all below 20%, thus do not require qualification. (See table below.) Since soil is not homogenous, it is not unreasonable to get such variation amongst results. That being said the DUP does show comparability with the field sample despite the range of RPDs.

Soil Constituents	Soil Sample Results	RPD	DUP Results
Aroclor 1254	54	17%	64
Aroclor 1260	39	3%	40
Antimony	1.5 B	59%	0.82 U
Total Organic Carbon	150,000	2%	147,000

Method Blanks:

Aqueous: The aqueous laboratory method blanks were non-detect for most of the constituents. Below is a list of method blanks with their detected constituent.

- Methylene Chloride came back at 2.0 for VBLK38.
- Diethyl phthalate was detected at 0.4 J for SBLK24.
- In SBLK78, Di-n-butyl phthalate was detected at 0.7 J, Benzo (a) anthracene was detected at 0.2 J, Di-n-octyl phthalate was detected at 0.2 J, Benzo (b) fluoranthene was detected at 0.4 J, Benzo (k) fluoranthene and Benzo(a)pyrene were both detected at 0.3 J, Benzo (g,h,i) perylene was detected at 0.5J, and Indeno (1,2,3-cd)pyrene and Dibenzo(a,h) anthracene were both detected at 0.4 J.

All of the constituents detected were flagged with a "J" due to estimated values, thus do not require any additional qualification. However, the Methylene Chloride was not flagged with

a "J". It was most likely due to laboratory contamination (as evidenced by the "B" flag included by the laboratory), and all samples should be qualified with a "J" accordingly.

Soil: The soil laboratory method blanks were non-detect for all PCB analyses. The lab did encounter some issues with Aluminum during the initial and continuing calibration blanks, as well as the method blank. However, the Aluminum levels detected in the samples were found to be more then ten times the level found in the method blank, so no further action was required.

Trip Blanks:
The aqueous trip blank (TB100308) was non-detect for all but one of the analyzed constituents. It showed a detection of Methylene Chloride at 0.91 BJ; most likely due to laboratory contamination.

Field Blanks:
Below is a table containing the constituents which were detected during analysis. Each of the analytes listed below were detected in one or more of the samples, so their presence in the field blank may be due to high concentrations in the sample matrix and/or laboratory contamination.

Soil:

Constituents	**FB091208 Results**
Thallium	6.6 B

Aqueous:

Constituents	**FB100308 Results**
Methylene Chloride	0.74 BJ
Di-n-butyl phthalate	0.5 BJ
Benzo (a) pyrene	0.2 BJ
Indeno(1,2,3-cd) pyrene	0.3 BJ
Dibenzo (a,h) anthracene	0.3 BJ
Benzo (g,h,i) perylene	0.3 BJ
Aluminum	86.2 J
Barium	14.9
Calcium	24800
Copper	5.7 B
Iron	60.4
Magnesium	6650
Manganese	3.5
Nickel	1.5 B
Potassium	1270
Sodium	10800
Zinc	5.0 B

The aqueous field blank was run three times in the lab. The first analysis had the lowest detection limits and was within hold time. The second and third analyses had higher detection limits, so none of the constituents were detected. However, the field blank was not analyzed within hold time. So the first field blank analysis was used, even though several constituents were detected.

Laboratory Case Narrative Review

There were several issues noted in the Laboratory Case Narrative. Below is a list of those issues:

Soil:

- For PCB analysis, the recovery of surrogate Decachlorobiphenyl in sample FB091208 is outside of established quality control limits due to the sample matrix. The recovery of surrogate Tetrachloro-m-xylene is within quality control limits; no corrective action is required.
- For PCB analysis, the recovery of both surrogate Tetrachloro-m-xylene and of surrogate Decachlorobiphenyl in soil samples B-32 and DUP091208 are outside of established quality control limits due to sample matrix interferences.
- The recovery of spike compound Aroclor 1260 fell outside established acceptance limits in the Matrix Spike and Matrix Spike Duplicate of sample B-33 most probably due to the elevated organic concentrations in the base sample. The recoveries of these compounds in the MSB were acceptable therefore no further action was taken.
- For PCB analysis, the response of the instrument is decreased due to the heavy matrix effects from the field samples, resulting in >15% difference in the continuing calibration verifications analyzed after these sample extracts. Subsequent continuing calibration verifications demonstrate compliance with routine quality control criteria, verifying the temporary nature of this effect.
- The analyte Al was detected in the Method Blank for the soil batch at a level above the project established reporting limits. However, all samples had levels of Al greater then ten times that of the Method Blank value, therefore, no corrective action was necessary.
- The recoveries of sample B-33 Matrix Spike exhibited results above the quality control limits for Al, Fe, and Mg. The recoveries of the sample B-33 Matrix Spike Duplicate exhibited results above the quality control limits for Cr and Silver and below that for Antimony. Sample matrix is suspect. However, the LFB was acceptable.
- The recoveries of sample B-33 Matrix Spike exhibited results above the quality control limits for Ba, Ca, Cu, Pb, Mn, and Zn. The recoveries of sample B-33 Matrix Spike Duplicate exhibited results above the quality control limits for Ba, Cu, Pb, Zn and below for Ca and Hg. The sample results were more then four times greater then the spikes added. The RPD between sample B-33 Matrix spike and the Matrix spike duplicate exceeded quality control criteria for Ca. However the LFB was acceptable.
- The serial dilution of sample B-33 exceeded the quality control limits for the K. However, the post spike was compliant for this element. Therefore no corrective action was necessary.
- The recovery of sample B-33 post spike exhibited results below the quality control limits for Ca, Pb, and Zn. However, the serial dilution of this sample was compliant. Therefore, no corrective action was necessary.
- The CCBs analyzed at 9:18 and 11:08, exhibited results above the detection limit for Cd and Fe. The CCBs analyzed at 12:07 and 13:11, exhibited results above the detection Fe. The CCB analyzed at 14:17 exhibited results above the detection limit for Fe and Zn.

However, the samples were bracketed by compliant CCB's therefore no corrective action was necessary.

- The CCBs recoveries for Fe and Mn in Method 6010 were above quality control limits. The CCBs (16:32) recoveries for Cd, Fe, and Mn were above limits. However, since target analytes were non-detect in the Method blank and the high recoveries would yield a high bias, no further action was necessary.
- The analytes Fe and Mn were detected in the CCB (15:31) at a level above the project established reporting limit. The analytes Cd, Fe, Mn were detected in the CCB (16:38) at a level above the project established project reporting limit. However, the LFB had levels of Cd, Fe and Mn were greater than ten times that of the CCB values, therefore no corrective action was taken.
- The RPD between B-22 MS and MSD exceeded limits.
- For method 8082, B-16 required dilution due to heavy matrix present or high concentration of analytes. The surrogate and spike recoveries are diluted out of all sample extracts with a dilution factor of 10x or greater.

Aqueous:

- The analyte Methylene Chloride was detected in the Method Blank VBLK38 at a level above the project established reporting limit. The associated samples had levels of Methylene Chloride less then ten times that of the Method Blank value. All sample detections for Methylene Chloride may potentially be due to lab contamination and should be evaluated accordingly. All associated sample detections were qualified with a "B."
- The spike recovery of the analytes Trichloroethene, benzene and toluene in the matrix spike exceeded quality control limits. The associated Matrix spike blank recoveries were compliant, so no action was taken.
- The matrix spike blank SMSB78 was below quality control limits for several analytes. All samples associated with this QC were re-extracted, a first time with the suffix RE(C=MS and CC=MSD) and reanalyzed outside of hold. All sets of data have been reported.
- The Matrix Spike Blank (A8B2445602) exceeded quality control limits for the analyte Caprolactam. Samples were non-detect for this analyte, all other recoveries are compliant.
- The RPD between MW-7 MS and MSD exceeded quality control criteria for several analytes. The samples were re-extracted and re-analyzed outside of hold time. All sets of data have been reported.
- The Matrix Spike Blank A8B2415902 exceeded quality control limits for Benzo (a) pyrene and N-nitrosodiphenylamine. All samples associated with this QC item were re-extracted and re-analyzed outside of hold. All sets of data have been reported.
- The surrogate recovery for 2-Fluorobiphenyl was below the lab criteria limits for the Method blank SBLK79. All samples associated with this QC item were re-extracted and re-analyzed; suffix is RA (D=MS and DD=MSD). All sets of data have been reported.
- The recovery of several analytes in samples MW-7 Matrix Spike and Matrix Spike DUP exceeded QC limits. The samples was re-extracted and re-analyzed outside of hold time. All sets of data have been reported.
- For method 8082, sample extracts MW-8, DUP100308, and MW-9 and associated quality control required treatment with Copper prior to analysis due to presence of elemental sulfur.

- The recovery of sample MW-7 Matrix Spike DUP exhibited a result below the quality control limits for Calcium. The sample result is more than four times greater than the spike added. The LFB was acceptable.
- The recovery of sample MW-7 Post Spike exhibited a result above the quality control limits for Potassium. However, the Serial Dilution for these samples was compliant; no corrective action was necessary.

Validation Qualifiers

The following validation qualifiers may have been applied to the data, as appropriate.

- J = Indicates an estimated value; the associated numerical value is an estimated concentration of the analyte in the sample.
- U = The analyte was tested, but was not detected above the sample reporting limit.
- E = The concentration of the analyte exceeds the calibration range of the instrument.
- R = The sample result is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.
- UJ= The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte.

Qualified Aqueous Results using MS/MSD Recoveries:

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
DUP100308	Benzene	4	ug/L	U	R
FB100308	Benzene	1	ug/L	U	R
MW-7	Benzene	4	ug/L	U	R
MW-7MS	Benzene	130	ug/L		J
MW-7MSD	Benzene	120	ug/L		J
MW-8	Benzene	4	ug/L	U	R
MW-9	Benzene	2	ug/L	U	R
TB100308	Benzene	1	ug/L	U	R
DUP100308	3,3'-Dichlorobenzidine	5	ug/L	U	R
DUP100308	3,3'-Dichlorobenzidine	5	ug/L	U	R
DUP100308	3,3'-Dichlorobenzidine	5	ug/L	U	R
FB100308	3,3'-Dichlorobenzidine	5	ug/L	U	R
FB100308	3,3'-Dichlorobenzidine	14	ug/L	U	R
FB100308	3,3'-Dichlorobenzidine	20	ug/L	U	R
MW-7	3,3'-Dichlorobenzidine	5	ug/L	U	R
MW-7	3,3'-Dichlorobenzidine	5	ug/L	U	R
MW-7	3,3'-Dichlorobenzidine	5	ug/L	U	R
MW-7MS	3,3'-Dichlorobenzidine	21	ug/L		J
MW-7MS	3,3'-Dichlorobenzidine	27	ug/L		J
MW-7MS	3,3'-Dichlorobenzidine	15	ug/L		J
MW-7MSD	3,3'-Dichlorobenzidine	22	ug/L		J
MW-7MSD	3,3'-Dichlorobenzidine	23	ug/L		J
MW-7MSD	3,3'-Dichlorobenzidine	20	ug/L		J
MW-8	3,3'-Dichlorobenzidine	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-8	3,3'-Dichlorobenzidine	5	ug/L	U	R
MW-8	3,3'-Dichlorobenzidine	5	ug/L	U	R
MW-9	3,3'-Dichlorobenzidine	5	ug/L	U	R
MW-9	3,3'-Dichlorobenzidine	6	ug/L	U	R
MW-9	3,3'-Dichlorobenzidine	5	ug/L	U	R
DUP100308	Acenaphthylene	5	ug/L	U	R
DUP100308	Acenaphthylene	5	ug/L	U	R
DUP100308	Acenaphthylene	5	ug/L	U	R
FB100308	Acenaphthylene	5	ug/L	U	R
FB100308	Acenaphthylene	14	ug/L	U	R
FB100308	Acenaphthylene	20	ug/L	U	R
MW-7	Acenaphthylene	5	ug/L	U	R
MW-7	Acenaphthylene	5	ug/L	U	R
MW-7	Acenaphthylene	5	ug/L	U	R
MW-7MS	Acenaphthylene	84	ug/L		J
MW-7MS	Acenaphthylene	80	ug/L		J
MW-7MS	Acenaphthylene	75	ug/L		J
MW-7MSD	Acenaphthylene	82	ug/L		J
MW-7MSD	Acenaphthylene	81	ug/L		J
MW-7MSD	Acenaphthylene	91	ug/L		J
MW-8	Acenaphthylene	5	ug/L	U	R
MW-8	Acenaphthylene	5	ug/L	U	R
MW-8	Acenaphthylene	5	ug/L	U	R
MW-9	Acenaphthylene	0.3	ug/L	J	J
MW-9	Acenaphthylene	0.3	ug/L	J	J
MW-9	Acenaphthylene	0.3	ug/L	J	J
DUP100308	Acetophenone	5	ug/L	U	R
DUP100308	Acetophenone	5	ug/L	U	R
DUP100308	Acetophenone	5	ug/L	U	R
FB100308	Acetophenone	5	ug/L	U	R
FB100308	Acetophenone	14	ug/L	U	R
FB100308	Acetophenone	20	ug/L	U	R
MW-7	Acetophenone	5	ug/L	U	R
MW-7	Acetophenone	5	ug/L	U	R
MW-7	Acetophenone	5	ug/L	U	R
MW-7MS	Acetophenone	76	ug/L		J
MW-7MS	Acetophenone	72	ug/L		J
MW-7MS	Acetophenone	74	ug/L		J
MW-7MSD	Acetophenone	71	ug/L		J
MW-7MSD	Acetophenone	78	ug/L		J
MW-7MSD	Acetophenone	92	ug/L		J
MW-8	Acetophenone	5	ug/L	U	R
MW-8	Acetophenone	5	ug/L	U	R
MW-8	Acetophenone	5	ug/L	U	R
MW-9	Acetophenone	5	ug/L	U	R
MW-9	Acetophenone	6	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-9	Acetophenone	5	ug/L	U	R
DUP100308	Anthracene	5	ug/L	U	R
DUP100308	Anthracene	5	ug/L	U	R
DUP100308	Anthracene	5	ug/L	U	R
FB100308	Anthracene	5	ug/L	U	R
FB100308	Anthracene	14	ug/L	U	R
FB100308	Anthracene	20	ug/L	U	R
MW-7	Anthracene	5	ug/L	U	R
MW-7	Anthracene	5	ug/L	U	R
MW-7	Anthracene	5	ug/L	U	R
MW-7MS	Anthracene	98	ug/L		J
MW-7MS	Anthracene	95	ug/L		J
MW-7MS	Anthracene	91	ug/L		J
MW-7MSD	Anthracene	100	ug/L		J
MW-7MSD	Anthracene	90	ug/L		J
MW-7MSD	Anthracene	110	ug/L		J
MW-8	Anthracene	5	ug/L	U	R
MW-8	Anthracene	5	ug/L	U	R
MW-8	Anthracene	0.3	ug/L	J	J
MW-9	Anthracene	0.4	ug/L	J	J
MW-9	Anthracene	0.5	ug/L	J	J
MW-9	Anthracene	0.5	ug/L	J	J
DUP100308	Atrazine	5	ug/L	U	R
DUP100308	Atrazine	5	ug/L	U	R
DUP100308	Atrazine	5	ug/L	U	R
FB100308	Atrazine	5	ug/L	U	R
FB100308	Atrazine	14	ug/L	U	R
FB100308	Atrazine	20	ug/L	U	R
MW-7	Atrazine	5	ug/L	U	R
MW-7	Atrazine	5	ug/L	U	R
MW-7	Atrazine	5	ug/L	U	R
MW-7MS	Atrazine	110	ug/L		J
MW-7MS	Atrazine	95	ug/L		J
MW-7MS	Atrazine	93	ug/L		J
MW-7MSD	Atrazine	110	ug/L		J
MW-7MSD	Atrazine	94	ug/L		J
MW-7MSD	Atrazine	120	ug/L		J
MW-8	Atrazine	5	ug/L	U	R
MW-8	Atrazine	5	ug/L	U	R
MW-8	Atrazine	5	ug/L	U	R
MW-9	Atrazine	5	ug/L	U	R
MW-9	Atrazine	6	ug/L	U	R
MW-9	Atrazine	5	ug/L	U	R
DUP100308	Benzaldehyde	5	ug/L	U	R
DUP100308	Benzaldehyde	5	ug/L	U	R
DUP100308	Benzaldehyde	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
FB100308	Benzaldehyde	5	ug/L	U	R
FB100308	Benzaldehyde	14	ug/L	U	R
FB100308	Benzaldehyde	20	ug/L	U	R
MW-7	Benzaldehyde	5	ug/L	U	R
MW-7	Benzaldehyde	5	ug/L	U	R
MW-7	Benzaldehyde	5	ug/L	U	R
MW-7MS	Benzaldehyde	49	ug/L		J
MW-7MS	Benzaldehyde	46	ug/L		J
MW-7MS	Benzaldehyde	47	ug/L		J
MW-7MSD	Benzaldehyde	48	ug/L		J
MW-7MSD	Benzaldehyde	48	ug/L		J
MW-7MSD	Benzaldehyde	58	ug/L		J
MW-8	Benzaldehyde	5	ug/L	U	R
MW-8	Benzaldehyde	5	ug/L	U	R
MW-8	Benzaldehyde	5	ug/L	U	R
MW-9	Benzaldehyde	5	ug/L	U	R
MW-9	Benzaldehyde	6	ug/L	U	R
MW-9	Benzaldehyde	5	ug/L	U	R
DUP100308	Benzo(A)Anthracene	5	ug/L	U	R
DUP100308	Benzo(A)Anthracene	5	ug/L	U	R
DUP100308	Benzo(A)Anthracene	0.3	ug/L	J	J
FB100308	Benzo(A)Anthracene	5	ug/L	U	R
FB100308	Benzo(A)Anthracene	14	ug/L	U	R
FB100308	Benzo(A)Anthracene	20	ug/L	U	R
MW-7	Benzo(A)Anthracene	0.3	ug/L	BJ	J
MW-7	Benzo(A)Anthracene	0.3	ug/L	J	J
MW-7	Benzo(A)Anthracene	0.4	ug/L	J	J
MW-7MS	Benzo(A)Anthracene	89	ug/L		J
MW-7MS	Benzo(A)Anthracene	93	ug/L		J
MW-7MS	Benzo(A)Anthracene	85	ug/L	B	J
MW-7MSD	Benzo(A)Anthracene	91	ug/L		J
MW-7MSD	Benzo(A)Anthracene	89	ug/L		J
MW-7MSD	Benzo(A)Anthracene	110	ug/L	B	J
MW-8	Benzo(A)Anthracene	0.3	ug/L	BJ	J
MW-8	Benzo(A)Anthracene	5	ug/L	U	R
MW-8	Benzo(A)Anthracene	5	ug/L	U	R
MW-9	Benzo(A)Anthracene	5	ug/L	U	R
MW-9	Benzo(A)Anthracene	6	ug/L	U	R
MW-9	Benzo(A)Anthracene	5	ug/L	U	R
DUP100308	Benzo(K)Fluoranthene	0.2	ug/L	BJ	J
DUP100308	Benzo(K)Fluoranthene	5	ug/L	U	R
DUP100308	Benzo(K)Fluoranthene	5	ug/L	U	R
FB100308	Benzo(K)Fluoranthene	5	ug/L	U	R
FB100308	Benzo(K)Fluoranthene	14	ug/L	U	R
FB100308	Benzo(K)Fluoranthene	20	ug/L	U	R
MW-7	Benzo(K)Fluoranthene	0.2	ug/L	BJ	J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7	Benzo(K)Fluoranthene	5	ug/L	U	R
MW-7	Benzo(K)Fluoranthene	0.2	ug/L	J	J
MW-7MS	Benzo(K)Fluoranthene	98	ug/L		J
MW-7MS	Benzo(K)Fluoranthene	100	ug/L		J
MW-7MS	Benzo(K)Fluoranthene	78	ug/L	B	J
MW-7MSD	Benzo(K)Fluoranthene	95	ug/L		J
MW-7MSD	Benzo(K)Fluoranthene	95	ug/L		J
MW-7MSD	Benzo(K)Fluoranthene	110	ug/L	B	J
MW-8	Benzo(K)Fluoranthene	0.4	ug/L	BJ	J
MW-8	Benzo(K)Fluoranthene	5	ug/L	U	R
MW-8	Benzo(K)Fluoranthene	5	ug/L	U	R
MW-9	Benzo(K)Fluoranthene	5	ug/L	U	R
MW-9	Benzo(K)Fluoranthene	6	ug/L	U	R
MW-9	Benzo(K)Fluoranthene	5	ug/L	U	R
DUP100308	Benzo(G,H,I)Perylene	0.4	ug/L	BJ	J
DUP100308	Benzo(G,H,I)Perylene	5	ug/L	U	R
DUP100308	Benzo(G,H,I)Perylene	5	ug/L	U	R
FB100308	Benzo(G,H,I)Perylene	0.3	ug/L	BJ	J
FB100308	Benzo(G,H,I)Perylene	14	ug/L	U	R
FB100308	Benzo(G,H,I)Perylene	20	ug/L	U	R
MW-7	Benzo(G,H,I)Perylene	0.3	ug/L	BJ	J
MW-7	Benzo(G,H,I)Perylene	5	ug/L	U	R
MW-7	Benzo(G,H,I)Perylene	5	ug/L	U	R
MW-7MS	Benzo(G,H,I)Perylene	120	ug/L		J
MW-7MS	Benzo(G,H,I)Perylene	120	ug/L		J
MW-7MS	Benzo(G,H,I)Perylene	110	ug/L	B	J
MW-7MSD	Benzo(G,H,I)Perylene	120	ug/L		J
MW-7MSD	Benzo(G,H,I)Perylene	110	ug/L		J
MW-7MSD	Benzo(G,H,I)Perylene	140	ug/L	B	J
MW-8	Benzo(G,H,I)Perylene	0.5	ug/L	BJ	J
MW-8	Benzo(G,H,I)Perylene	5	ug/L	U	R
MW-8	Benzo(G,H,I)Perylene	5	ug/L	U	R
MW-9	Benzo(G,H,I)Perylene	0.2	ug/L	BJ	J
MW-9	Benzo(G,H,I)Perylene	6	ug/L	U	R
MW-9	Benzo(G,H,I)Perylene	5	ug/L	U	R
DUP100308	Benzo(A)Pyrene	0.3	ug/L	BJ	J
DUP100308	Benzo(A)Pyrene	5	ug/L	U	R
DUP100308	Benzo(A)Pyrene	5	ug/L	U	R
FB100308	Benzo(A)Pyrene	0.2	ug/L	BJ	J
FB100308	Benzo(A)Pyrene	14	ug/L	U	R
FB100308	Benzo(A)Pyrene	20	ug/L	U	R
MW-7	Benzo(A)Pyrene	0.3	ug/L	BJ	J
MW-7	Benzo(A)Pyrene	5	ug/L	U	R
MW-7	Benzo(A)Pyrene	5	ug/L	U	R
MW-7MS	Benzo(A)Pyrene	110	ug/L		J
MW-7MS	Benzo(A)Pyrene	110	ug/L		J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7MS	Benzo(A)Pyrene	100	ug/L	B	J
MW-7MSD	Benzo(A)Pyrene	110	ug/L		J
MW-7MSD	Benzo(A)Pyrene	100	ug/L		J
MW-7MSD	Benzo(A)Pyrene	140	ug/L	B	J
MW-8	Benzo(A)Pyrene	0.4	ug/L	BJ	J
MW-8	Benzo(A)Pyrene	5	ug/L	U	R
MW-8	Benzo(A)Pyrene	5	ug/L	U	R
MW-9	Benzo(A)Pyrene	0.2	ug/L	BJ	J
MW-9	Benzo(A)Pyrene	6	ug/L	U	R
MW-9	Benzo(A)Pyrene	5	ug/L	U	R
DUP100308	Biphenyl	5	ug/L	U	R
DUP100308	Biphenyl	5	ug/L	U	R
DUP100308	Biphenyl	5	ug/L	U	R
FB100308	Biphenyl	5	ug/L	U	R
FB100308	Biphenyl	14	ug/L	U	R
FB100308	Biphenyl	20	ug/L	U	R
MW-7	Biphenyl	5	ug/L	U	R
MW-7	Biphenyl	5	ug/L	U	R
MW-7	Biphenyl	5	ug/L	U	R
MW-7MS	Biphenyl	71	ug/L		J
MW-7MS	Biphenyl	71	ug/L		J
MW-7MS	Biphenyl	63	ug/L		J
MW-7MSD	Biphenyl	68	ug/L		J
MW-7MSD	Biphenyl	74	ug/L		J
MW-7MSD	Biphenyl	77	ug/L		J
MW-8	Biphenyl	5	ug/L	U	R
MW-8	Biphenyl	5	ug/L	U	R
MW-8	Biphenyl	5	ug/L	U	R
MW-9	Biphenyl	0.3	ug/L	J	J
MW-9	Biphenyl	0.3	ug/L	J	J
MW-9	Biphenyl	0.2	ug/L	J	J
DUP100308	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
DUP100308	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
DUP100308	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
FB100308	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
FB100308	Bis(2-Chloroethoxy)Methane	14	ug/L	U	R
FB100308	Bis(2-Chloroethoxy)Methane	20	ug/L	U	R
MW-7	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-7	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-7	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-7MS	Bis(2-Chloroethoxy)Methane	80	ug/L		J
MW-7MS	Bis(2-Chloroethoxy)Methane	76	ug/L		J
MW-7MS	Bis(2-Chloroethoxy)Methane	80	ug/L		J
MW-7MSD	Bis(2-Chloroethoxy)Methane	81	ug/L		J
MW-7MSD	Bis(2-Chloroethoxy)Methane	80	ug/L		J
MW-7MSD	Bis(2-Chloroethoxy)Methane	99	ug/L		J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-8	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-8	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-8	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-9	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
MW-9	Bis(2-Chloroethoxy)Methane	6	ug/L	U	R
MW-9	Bis(2-Chloroethoxy)Methane	5	ug/L	U	R
DUP100308	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
DUP100308	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
DUP100308	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
FB100308	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
FB100308	Bis(2-Chloroethyl) Ether	14	ug/L	U	R
FB100308	Bis(2-Chloroethyl) Ether	20	ug/L	U	R
MW-7	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-7	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-7	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-7MS	Bis(2-Chloroethyl) Ether	69	ug/L		J
MW-7MS	Bis(2-Chloroethyl) Ether	72	ug/L		J
MW-7MS	Bis(2-Chloroethyl) Ether	65	ug/L		J
MW-7MSD	Bis(2-Chloroethyl) Ether	67	ug/L		J
MW-7MSD	Bis(2-Chloroethyl) Ether	75	ug/L		J
MW-7MSD	Bis(2-Chloroethyl) Ether	81	ug/L		J
MW-8	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-8	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-8	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-9	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
MW-9	Bis(2-Chloroethyl) Ether	6	ug/L	U	R
MW-9	Bis(2-Chloroethyl) Ether	5	ug/L	U	R
DUP100308	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
DUP100308	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
DUP100308	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
FB100308	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
FB100308	Bis(2-Ethylhexyl) Phthalate	14	ug/L	U	R
FB100308	Bis(2-Ethylhexyl) Phthalate	20	ug/L	U	R
MW-7	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
MW-7	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
MW-7	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
MW-7MS	Bis(2-Ethylhexyl) Phthalate	91	ug/L		J
MW-7MS	Bis(2-Ethylhexyl) Phthalate	99	ug/L		J
MW-7MS	Bis(2-Ethylhexyl) Phthalate	91	ug/L		J
MW-7MSD	Bis(2-Ethylhexyl) Phthalate	94	ug/L		J
MW-7MSD	Bis(2-Ethylhexyl) Phthalate	93	ug/L		J
MW-7MSD	Bis(2-Ethylhexyl) Phthalate	120	ug/L		J
MW-8	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
MW-8	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
MW-8	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
MW-9	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-9	Bis(2-Ethylhexyl) Phthalate	6	ug/L	U	R
MW-9	Bis(2-Ethylhexyl) Phthalate	5	ug/L	U	R
DUP100308	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
DUP100308	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
DUP100308	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
FB100308	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
FB100308	4-Bromophenyl Phenyl Ether	14	ug/L	U	R
FB100308	4-Bromophenyl Phenyl Ether	20	ug/L	U	R
MW-7	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-7	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-7	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-7MS	4-Bromophenyl Phenyl Ether	100	ug/L		J
MW-7MS	4-Bromophenyl Phenyl Ether	100	ug/L		J
MW-7MS	4-Bromophenyl Phenyl Ether	94	ug/L		J
MW-7MSD	4-Bromophenyl Phenyl Ether	100	ug/L		J
MW-7MSD	4-Bromophenyl Phenyl Ether	99	ug/L		J
MW-7MSD	4-Bromophenyl Phenyl Ether	120	ug/L		J
MW-8	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-8	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-8	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-9	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
MW-9	4-Bromophenyl Phenyl Ether	6	ug/L	U	R
MW-9	4-Bromophenyl Phenyl Ether	5	ug/L	U	R
DUP100308	Butylbenzyl Phthalate	5	ug/L	U	R
DUP100308	Butylbenzyl Phthalate	5	ug/L	U	R
DUP100308	Butylbenzyl Phthalate	5	ug/L	U	R
FB100308	Butylbenzyl Phthalate	5	ug/L	U	R
FB100308	Butylbenzyl Phthalate	14	ug/L	U	R
FB100308	Butylbenzyl Phthalate	20	ug/L	U	R
MW-7	Butylbenzyl Phthalate	2	ug/L	J	J
MW-7	Butylbenzyl Phthalate	5	ug/L	U	R
MW-7	Butylbenzyl Phthalate	5	ug/L	U	R
MW-7MS	Butylbenzyl Phthalate	95	ug/L		J
MW-7MS	Butylbenzyl Phthalate	100	ug/L		J
MW-7MS	Butylbenzyl Phthalate	94	ug/L		J
MW-7MSD	Butylbenzyl Phthalate	98	ug/L		J
MW-7MSD	Butylbenzyl Phthalate	100	ug/L		J
MW-7MSD	Butylbenzyl Phthalate	120	ug/L		J
MW-8	Butylbenzyl Phthalate	5	ug/L	U	R
MW-8	Butylbenzyl Phthalate	5	ug/L	U	R
MW-8	Butylbenzyl Phthalate	5	ug/L	U	R
MW-9	Butylbenzyl Phthalate	5	ug/L	U	R
MW-9	Butylbenzyl Phthalate	6	ug/L	U	R
MW-9	Butylbenzyl Phthalate	5	ug/L	U	R
DUP100308	Caprolactam	5	ug/L	U	R
DUP100308	Caprolactam	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
DUP100308	Caprolactam	5	ug/L	U	R
FB100308	Caprolactam	5	ug/L	U	R
FB100308	Caprolactam	14	ug/L	U	R
FB100308	Caprolactam	20	ug/L	U	R
MW-7	Caprolactam	5	ug/L	U	R
MW-7	Caprolactam	5	ug/L	U	R
MW-7	Caprolactam	5	ug/L	U	R
MW-7MS	Caprolactam	39	ug/L		J
MW-7MS	Caprolactam	29	ug/L		J
MW-7MS	Caprolactam	33	ug/L		J
MW-7MSD	Caprolactam	40	ug/L		J
MW-7MSD	Caprolactam	27	ug/L		J
MW-7MSD	Caprolactam	41	ug/L		J
MW-8	Caprolactam	5	ug/L	U	R
MW-8	Caprolactam	5	ug/L	U	R
MW-8	Caprolactam	5	ug/L	U	R
MW-9	Caprolactam	5	ug/L	U	R
MW-9	Caprolactam	6	ug/L	U	R
MW-9	Caprolactam	5	ug/L	U	R
DUP100308	Carbazole	5	ug/L	U	R
DUP100308	Carbazole	5	ug/L	U	R
DUP100308	Carbazole	5	ug/L	U	R
FB100308	Carbazole	5	ug/L	U	R
FB100308	Carbazole	14	ug/L	U	R
FB100308	Carbazole	20	ug/L	U	R
MW-7	Carbazole	5	ug/L	U	R
MW-7	Carbazole	5	ug/L	U	R
MW-7	Carbazole	5	ug/L	U	R
MW-7MS	Carbazole	100	ug/L		J
MW-7MS	Carbazole	93	ug/L		J
MW-7MS	Carbazole	92	ug/L		J
MW-7MSD	Carbazole	100	ug/L		J
MW-7MSD	Carbazole	89	ug/L		J
MW-7MSD	Carbazole	110	ug/L		J
MW-8	Carbazole	5	ug/L	U	R
MW-8	Carbazole	5	ug/L	U	R
MW-8	Carbazole	0.6	ug/L	J	J
MW-9	Carbazole	2	ug/L	J	J
MW-9	Carbazole	2	ug/L	J	J
MW-9	Carbazole	2	ug/L	J	J
DUP100308	4-Chloroaniline	5	ug/L	U	R
DUP100308	4-Chloroaniline	5	ug/L	U	R
DUP100308	4-Chloroaniline	5	ug/L	U	R
FB100308	4-Chloroaniline	5	ug/L	U	R
FB100308	4-Chloroaniline	14	ug/L	U	R
FB100308	4-Chloroaniline	20	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7	4-Chloroaniline	0.4	ug/L	J	J
MW-7	4-Chloroaniline	5	ug/L	U	R
MW-7	4-Chloroaniline	5	ug/L	U	R
MW-7MS	4-Chloroaniline	89	ug/L		J
MW-7MS	4-Chloroaniline	80	ug/L		J
MW-7MS	4-Chloroaniline	88	ug/L		J
MW-7MSD	4-Chloroaniline	94	ug/L		J
MW-7MSD	4-Chloroaniline	86	ug/L		J
MW-7MSD	4-Chloroaniline	110	ug/L		J
MW-8	4-Chloroaniline	5	ug/L	U	R
MW-8	4-Chloroaniline	5	ug/L	U	R
MW-8	4-Chloroaniline	5	ug/L	U	R
MW-9	4-Chloroaniline	5	ug/L	U	R
MW-9	4-Chloroaniline	6	ug/L	U	R
MW-9	4-Chloroaniline	5	ug/L	U	R
DUP100308	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
DUP100308	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
DUP100308	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
FB100308	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
FB100308	4-Chlorophenyl Phenyl Ether	14	ug/L	U	R
FB100308	4-Chlorophenyl Phenyl Ether	20	ug/L	U	R
MW-7	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-7	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-7	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-7MS	4-Chlorophenyl Phenyl Ether	90	ug/L		J
MW-7MS	4-Chlorophenyl Phenyl Ether	85	ug/L		J
MW-7MS	4-Chlorophenyl Phenyl Ether	82	ug/L		J
MW-7MSD	4-Chlorophenyl Phenyl Ether	89	ug/L		J
MW-7MSD	4-Chlorophenyl Phenyl Ether	87	ug/L		J
MW-7MSD	4-Chlorophenyl Phenyl Ether	100	ug/L		J
MW-8	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-8	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-8	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-9	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
MW-9	4-Chlorophenyl Phenyl Ether	6	ug/L	U	R
MW-9	4-Chlorophenyl Phenyl Ether	5	ug/L	U	R
DUP100308	Chrysene	5	ug/L	U	R
DUP100308	Chrysene	5	ug/L	U	R
DUP100308	Chrysene	5	ug/L	U	R
FB100308	Chrysene	5	ug/L	U	R
FB100308	Chrysene	14	ug/L	U	R
FB100308	Chrysene	20	ug/L	U	R
MW-7	Chrysene	5	ug/L	U	R
MW-7	Chrysene	5	ug/L	U	R
MW-7	Chrysene	0.3	ug/L	J	J
MW-7MS	Chrysene	87	ug/L		J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7MS	Chrysene	96	ug/L		J
MW-7MS	Chrysene	79	ug/L		J
MW-7MSD	Chrysene	89	ug/L		J
MW-7MSD	Chrysene	90	ug/L		J
MW-7MSD	Chrysene	100	ug/L		J
MW-8	Chrysene	5	ug/L	U	R
MW-8	Chrysene	5	ug/L	U	R
MW-8	Chrysene	5	ug/L	U	R
MW-9	Chrysene	5	ug/L	U	R
MW-9	Chrysene	6	ug/L	U	R
MW-9	Chrysene	5	ug/L	U	R
DUP100308	Dibenz(A,H)Anthracene	0.3	ug/L	BJ	J
DUP100308	Dibenz(A,H)Anthracene	5	ug/L	U	R
DUP100308	Dibenz(A,H)Anthracene	5	ug/L	U	R
FB100308	Dibenz(A,H)Anthracene	0.3	ug/L	BJ	J
FB100308	Dibenz(A,H)Anthracene	14	ug/L	U	R
FB100308	Dibenz(A,H)Anthracene	20	ug/L	U	R
MW-7	Dibenz(A,H)Anthracene	0.3	ug/L	BJ	J
MW-7	Dibenz(A,H)Anthracene	5	ug/L	U	R
MW-7	Dibenz(A,H)Anthracene	5	ug/L	U	R
MW-7MS	Dibenz(A,H)Anthracene	120	ug/L		J
MW-7MS	Dibenz(A,H)Anthracene	110	ug/L		J
MW-7MS	Dibenz(A,H)Anthracene	110	ug/L	B	J
MW-7MSD	Dibenz(A,H)Anthracene	120	ug/L		J
MW-7MSD	Dibenz(A,H)Anthracene	100	ug/L		J
MW-7MSD	Dibenz(A,H)Anthracene	140	ug/L	B	J
MW-8	Dibenz(A,H)Anthracene	0.4	ug/L	BJ	J
MW-8	Dibenz(A,H)Anthracene	5	ug/L	U	R
MW-8	Dibenz(A,H)Anthracene	5	ug/L	U	R
MW-9	Dibenz(A,H)Anthracene	0.2	ug/L	BJ	J
MW-9	Dibenz(A,H)Anthracene	6	ug/L	U	R
MW-9	Dibenz(A,H)Anthracene	5	ug/L	U	R
DUP100308	Dibenzofuran	5	ug/L	U	R
DUP100308	Dibenzofuran	5	ug/L	U	R
DUP100308	Dibenzofuran	5	ug/L	U	R
FB100308	Dibenzofuran	5	ug/L	U	R
FB100308	Dibenzofuran	14	ug/L	U	R
FB100308	Dibenzofuran	20	ug/L	U	R
MW-7	Dibenzofuran	5	ug/L	U	R
MW-7	Dibenzofuran	5	ug/L	U	R
MW-7	Dibenzofuran	5	ug/L	U	R
MW-7MS	Dibenzofuran	85	ug/L		J
MW-7MS	Dibenzofuran	81	ug/L		J
MW-7MS	Dibenzofuran	77	ug/L		J
MW-7MSD	Dibenzofuran	83	ug/L		J
MW-7MSD	Dibenzofuran	82	ug/L		J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7MSD	Dibenzofuran	94	ug/L		J
MW-8	Dibenzofuran	5	ug/L	U	R
MW-8	Dibenzofuran	5	ug/L	U	R
MW-8	Dibenzofuran	5	ug/L	U	R
MW-9	Dibenzofuran	1	ug/L	J	J
MW-9	Dibenzofuran	1	ug/L	J	J
MW-9	Dibenzofuran	1	ug/L	J	J
DUP100308	Di-N-Butyl Phthalate	1	ug/L	BJ	J
DUP100308	Di-N-Butyl Phthalate	0.3	ug/L	J	J
DUP100308	Di-N-Butyl Phthalate	0.3	ug/L	J	J
FB100308	Di-N-Butyl Phthalate	0.5	ug/L	BJ	J
FB100308	Di-N-Butyl Phthalate	14	ug/L	U	R
FB100308	Di-N-Butyl Phthalate	20	ug/L	U	R
MW-7	Di-N-Butyl Phthalate	0.7	ug/L	BJ	J
MW-7	Di-N-Butyl Phthalate	0.6	ug/L	J	J
MW-7	Di-N-Butyl Phthalate	0.3	ug/L	J	J
MW-7MS	Di-N-Butyl Phthalate	110	ug/L		J
MW-7MS	Di-N-Butyl Phthalate	100	ug/L		J
MW-7MS	Di-N-Butyl Phthalate	100	ug/L	B	J
MW-7MSD	Di-N-Butyl Phthalate	110	ug/L		J
MW-7MSD	Di-N-Butyl Phthalate	97	ug/L		J
MW-7MSD	Di-N-Butyl Phthalate	130	ug/L	B	J
MW-8	Di-N-Butyl Phthalate	2	ug/L	BJ	J
MW-8	Di-N-Butyl Phthalate	0.5	ug/L	J	J
MW-8	Di-N-Butyl Phthalate	0.3	ug/L	J	J
MW-9	Di-N-Butyl Phthalate	0.5	ug/L	BJ	J
MW-9	Di-N-Butyl Phthalate	6	ug/L	U	R
MW-9	Di-N-Butyl Phthalate	5	ug/L	U	R
DUP100308	2,4-Dichlorophenol	5	ug/L	U	R
DUP100308	2,4-Dichlorophenol	5	ug/L	U	R
DUP100308	2,4-Dichlorophenol	5	ug/L	U	R
FB100308	2,4-Dichlorophenol	5	ug/L	U	R
FB100308	2,4-Dichlorophenol	14	ug/L	U	R
FB100308	2,4-Dichlorophenol	20	ug/L	U	R
MW-7	2,4-Dichlorophenol	5	ug/L	U	R
MW-7	2,4-Dichlorophenol	5	ug/L	U	R
MW-7	2,4-Dichlorophenol	5	ug/L	U	R
MW-7MS	2,4-Dichlorophenol	93	ug/L		J
MW-7MS	2,4-Dichlorophenol	88	ug/L		J
MW-7MS	2,4-Dichlorophenol	90	ug/L		J
MW-7MSD	2,4-Dichlorophenol	95	ug/L		J
MW-7MSD	2,4-Dichlorophenol	90	ug/L		J
MW-7MSD	2,4-Dichlorophenol	110	ug/L		J
MW-8	2,4-Dichlorophenol	5	ug/L	U	R
MW-8	2,4-Dichlorophenol	5	ug/L	U	R
MW-8	2,4-Dichlorophenol	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-9	2,4-Dichlorophenol	5	ug/L	U	R
MW-9	2,4-Dichlorophenol	6	ug/L	U	R
MW-9	2,4-Dichlorophenol	5	ug/L	U	R
DUP100308	Diethyl Phthalate	5	ug/L	U	R
DUP100308	Diethyl Phthalate	5	ug/L	U	R
DUP100308	Diethyl Phthalate	5	ug/L	U	R
FB100308	Diethyl Phthalate	5	ug/L	U	R
FB100308	Diethyl Phthalate	14	ug/L	U	R
FB100308	Diethyl Phthalate	20	ug/L	U	R
MW-7	Diethyl Phthalate	5	ug/L	U	R
MW-7	Diethyl Phthalate	5	ug/L	U	R
MW-7	Diethyl Phthalate	5	ug/L	U	R
MW-7MS	Diethyl Phthalate	100	ug/L		J
MW-7MS	Diethyl Phthalate	91	ug/L	B	J
MW-7MS	Diethyl Phthalate	88	ug/L		J
MW-7MSD	Diethyl Phthalate	98	ug/L		J
MW-7MSD	Diethyl Phthalate	92	ug/L	B	J
MW-7MSD	Diethyl Phthalate	110	ug/L		J
MW-8	Diethyl Phthalate	5	ug/L	U	R
MW-8	Diethyl Phthalate	5	ug/L	U	R
MW-8	Diethyl Phthalate	5	ug/L	U	R
MW-9	Diethyl Phthalate	5	ug/L	U	R
MW-9	Diethyl Phthalate	6	ug/L	U	R
MW-9	Diethyl Phthalate	5	ug/L	U	R
DUP100308	Dimethyl Phthalate	5	ug/L	U	R
DUP100308	Dimethyl Phthalate	5	ug/L	U	R
DUP100308	Dimethyl Phthalate	5	ug/L	U	R
FB100308	Dimethyl Phthalate	5	ug/L	U	R
FB100308	Dimethyl Phthalate	14	ug/L	U	R
FB100308	Dimethyl Phthalate	20	ug/L	U	R
MW-7	Dimethyl Phthalate	5	ug/L	U	R
MW-7	Dimethyl Phthalate	0.3	ug/L	J	J
MW-7	Dimethyl Phthalate	5	ug/L	U	R
MW-7MS	Dimethyl Phthalate	94	ug/L		J
MW-7MS	Dimethyl Phthalate	89	ug/L		J
MW-7MS	Dimethyl Phthalate	84	ug/L		J
MW-7MSD	Dimethyl Phthalate	92	ug/L		J
MW-7MSD	Dimethyl Phthalate	90	ug/L		J
MW-7MSD	Dimethyl Phthalate	100	ug/L		J
MW-8	Dimethyl Phthalate	5	ug/L	U	R
MW-8	Dimethyl Phthalate	5	ug/L	U	R
MW-8	Dimethyl Phthalate	5	ug/L	U	R
MW-9	Dimethyl Phthalate	5	ug/L	U	R
MW-9	Dimethyl Phthalate	6	ug/L	U	R
MW-9	Dimethyl Phthalate	5	ug/L	U	R
DUP100308	2,4-Dinitrotoluene	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
DUP100308	2,4-Dinitrotoluene	5	ug/L	U	R
DUP100308	2,4-Dinitrotoluene	5	ug/L	U	R
FB100308	2,4-Dinitrotoluene	5	ug/L	U	R
FB100308	2,4-Dinitrotoluene	14	ug/L	U	R
FB100308	2,4-Dinitrotoluene	20	ug/L	U	R
MW-7	2,4-Dinitrotoluene	5	ug/L	U	R
MW-7	2,4-Dinitrotoluene	5	ug/L	U	R
MW-7	2,4-Dinitrotoluene	5	ug/L	U	R
MW-7MS	2,4-Dinitrotoluene	100	ug/L		J
MW-7MS	2,4-Dinitrotoluene	97	ug/L		J
MW-7MS	2,4-Dinitrotoluene	92	ug/L		J
MW-7MSD	2,4-Dinitrotoluene	100	ug/L		J
MW-7MSD	2,4-Dinitrotoluene	97	ug/L		J
MW-7MSD	2,4-Dinitrotoluene	110	ug/L		J
MW-8	2,4-Dinitrotoluene	5	ug/L	U	R
MW-8	2,4-Dinitrotoluene	5	ug/L	U	R
MW-8	2,4-Dinitrotoluene	5	ug/L	U	R
MW-9	2,4-Dinitrotoluene	5	ug/L	U	R
MW-9	2,4-Dinitrotoluene	6	ug/L	U	R
MW-9	2,4-Dinitrotoluene	5	ug/L	U	R
DUP100308	2,6-Dinitrotoluene	5	ug/L	U	R
DUP100308	2,6-Dinitrotoluene	5	ug/L	U	R
DUP100308	2,6-Dinitrotoluene	5	ug/L	U	R
FB100308	2,6-Dinitrotoluene	5	ug/L	U	R
FB100308	2,6-Dinitrotoluene	14	ug/L	U	R
FB100308	2,6-Dinitrotoluene	20	ug/L	U	R
MW-7	2,6-Dinitrotoluene	5	ug/L	U	R
MW-7	2,6-Dinitrotoluene	5	ug/L	U	R
MW-7	2,6-Dinitrotoluene	5	ug/L	U	R
MW-7MS	2,6-Dinitrotoluene	100	ug/L		J
MW-7MS	2,6-Dinitrotoluene	100	ug/L		J
MW-7MS	2,6-Dinitrotoluene	94	ug/L		J
MW-7MSD	2,6-Dinitrotoluene	100	ug/L		J
MW-7MSD	2,6-Dinitrotoluene	100	ug/L		J
MW-7MSD	2,6-Dinitrotoluene	120	ug/L		J
MW-8	2,6-Dinitrotoluene	5	ug/L	U	R
MW-8	2,6-Dinitrotoluene	5	ug/L	U	R
MW-8	2,6-Dinitrotoluene	5	ug/L	U	R
MW-9	2,6-Dinitrotoluene	5	ug/L	U	R
MW-9	2,6-Dinitrotoluene	6	ug/L	U	R
MW-9	2,6-Dinitrotoluene	5	ug/L	U	R
DUP100308	Di-N-Octyl Phthalate	0.3	ug/L	BJ	J
DUP100308	Di-N-Octyl Phthalate	5	ug/L	U	R
DUP100308	Di-N-Octyl Phthalate	5	ug/L	U	R
FB100308	Di-N-Octyl Phthalate	5	ug/L	U	R
FB100308	Di-N-Octyl Phthalate	14	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
FB100308	Di-N-Octyl Phthalate	20	ug/L	U	R
MW-7	Di-N-Octyl Phthalate	0.4	ug/L	BJ	J
MW-7	Di-N-Octyl Phthalate	5	ug/L	U	R
MW-7	Di-N-Octyl Phthalate	5	ug/L	U	R
MW-7MS	Di-N-Octyl Phthalate	100	ug/L		J
MW-7MS	Di-N-Octyl Phthalate	100	ug/L		J
MW-7MS	Di-N-Octyl Phthalate	95	ug/L	B	J
MW-7MSD	Di-N-Octyl Phthalate	100	ug/L		J
MW-7MSD	Di-N-Octyl Phthalate	96	ug/L		J
MW-7MSD	Di-N-Octyl Phthalate	120	ug/L	B	J
MW-8	Di-N-Octyl Phthalate	5	ug/L	U	R
MW-8	Di-N-Octyl Phthalate	5	ug/L	U	R
MW-8	Di-N-Octyl Phthalate	5	ug/L	U	R
MW-9	Di-N-Octyl Phthalate	0.4	ug/L	BJ	J
MW-9	Di-N-Octyl Phthalate	6	ug/L	U	R
MW-9	Di-N-Octyl Phthalate	5	ug/L	U	R
DUP100308	Fluoranthene	5	ug/L	U	R
DUP100308	Fluoranthene	0.2	ug/L	J	J
DUP100308	Fluoranthene	0.2	ug/L	J	J
FB100308	Fluoranthene	5	ug/L	U	R
FB100308	Fluoranthene	14	ug/L	U	R
FB100308	Fluoranthene	20	ug/L	U	R
MW-7	Fluoranthene	5	ug/L	U	R
MW-7	Fluoranthene	5	ug/L	U	R
MW-7	Fluoranthene	0.2	ug/L	J	J
MW-7MS	Fluoranthene	98	ug/L		J
MW-7MS	Fluoranthene	92	ug/L		J
MW-7MS	Fluoranthene	91	ug/L		J
MW-7MSD	Fluoranthene	100	ug/L		J
MW-7MSD	Fluoranthene	87	ug/L		J
MW-7MSD	Fluoranthene	110	ug/L		J
MW-8	Fluoranthene	5	ug/L	U	R
MW-8	Fluoranthene	5	ug/L	U	R
MW-8	Fluoranthene	5	ug/L	U	R
MW-9	Fluoranthene	5	ug/L	U	R
MW-9	Fluoranthene	6	ug/L	U	R
MW-9	Fluoranthene	5	ug/L	U	R
DUP100308	Fluorene	5	ug/L	U	R
DUP100308	Fluorene	5	ug/L	U	R
DUP100308	Fluorene	5	ug/L	U	R
FB100308	Fluorene	5	ug/L	U	R
FB100308	Fluorene	14	ug/L	U	R
FB100308	Fluorene	20	ug/L	U	R
MW-7	Fluorene	5	ug/L	U	R
MW-7	Fluorene	5	ug/L	U	R
MW-7	Fluorene	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7MS	Fluorene	90	ug/L		J
MW-7MS	Fluorene	84	ug/L		J
MW-7MS	Fluorene	81	ug/L		J
MW-7MSD	Fluorene	88	ug/L		J
MW-7MSD	Fluorene	85	ug/L		J
MW-7MSD	Fluorene	99	ug/L		J
MW-8	Fluorene	5	ug/L	U	R
MW-8	Fluorene	5	ug/L	U	R
MW-8	Fluorene	5	ug/L	U	R
MW-9	Fluorene	2	ug/L	J	J
MW-9	Fluorene	3	ug/L	J	J
MW-9	Fluorene	2	ug/L	J	J
DUP100308	Hexachlorobenzene	5	ug/L	U	R
DUP100308	Hexachlorobenzene	5	ug/L	U	R
DUP100308	Hexachlorobenzene	5	ug/L	U	R
FB100308	Hexachlorobenzene	5	ug/L	U	R
FB100308	Hexachlorobenzene	14	ug/L	U	R
FB100308	Hexachlorobenzene	20	ug/L	U	R
MW-7	Hexachlorobenzene	5	ug/L	U	R
MW-7	Hexachlorobenzene	5	ug/L	U	R
MW-7	Hexachlorobenzene	5	ug/L	U	R
MW-7MS	Hexachlorobenzene	100	ug/L		J
MW-7MS	Hexachlorobenzene	99	ug/L		J
MW-7MS	Hexachlorobenzene	92	ug/L		J
MW-7MSD	Hexachlorobenzene	100	ug/L		J
MW-7MSD	Hexachlorobenzene	94	ug/L		J
MW-7MSD	Hexachlorobenzene	110	ug/L		J
MW-8	Hexachlorobenzene	5	ug/L	U	R
MW-8	Hexachlorobenzene	5	ug/L	U	R
MW-8	Hexachlorobenzene	5	ug/L	U	R
MW-9	Hexachlorobenzene	5	ug/L	U	R
MW-9	Hexachlorobenzene	6	ug/L	U	R
MW-9	Hexachlorobenzene	5	ug/L	U	R
DUP100308	Indeno(1,2,3-Cd)Pyrene	0.3	ug/L	BJ	J
DUP100308	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
DUP100308	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
FB100308	Indeno(1,2,3-Cd)Pyrene	0.3	ug/L	BJ	J
FB100308	Indeno(1,2,3-Cd)Pyrene	14	ug/L	U	R
FB100308	Indeno(1,2,3-Cd)Pyrene	20	ug/L	U	R
MW-7	Indeno(1,2,3-Cd)Pyrene	0.3	ug/L	BJ	J
MW-7	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
MW-7	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
MW-7MS	Indeno(1,2,3-Cd)Pyrene	120	ug/L		J
MW-7MS	Indeno(1,2,3-Cd)Pyrene	110	ug/L		J
MW-7MS	Indeno(1,2,3-Cd)Pyrene	110	ug/L	B	J
MW-7MSD	Indeno(1,2,3-Cd)Pyrene	120	ug/L		J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7MSD	Indeno(1,2,3-Cd)Pyrene	110	ug/L		J
MW-7MSD	Indeno(1,2,3-Cd)Pyrene	140	ug/L	B	J
MW-8	Indeno(1,2,3-Cd)Pyrene	0.4	ug/L	BJ	J
MW-8	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
MW-8	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
MW-9	Indeno(1,2,3-Cd)Pyrene	0.2	ug/L	BJ	J
MW-9	Indeno(1,2,3-Cd)Pyrene	6	ug/L	U	R
MW-9	Indeno(1,2,3-Cd)Pyrene	5	ug/L	U	R
DUP100308	Isophorone	5	ug/L	U	R
DUP100308	Isophorone	5	ug/L	U	R
DUP100308	Isophorone	5	ug/L	U	R
FB100308	Isophorone	5	ug/L	U	R
FB100308	Isophorone	14	ug/L	U	R
FB100308	Isophorone	20	ug/L	U	R
MW-7	Isophorone	5	ug/L	U	R
MW-7	Isophorone	5	ug/L	U	R
MW-7	Isophorone	5	ug/L	U	R
MW-7MS	Isophorone	85	ug/L		J
MW-7MS	Isophorone	79	ug/L		J
MW-7MS	Isophorone	84	ug/L		J
MW-7MSD	Isophorone	87	ug/L		J
MW-7MSD	Isophorone	83	ug/L		J
MW-7MSD	Isophorone	100	ug/L		J
MW-8	Isophorone	5	ug/L	U	R
MW-8	Isophorone	5	ug/L	U	R
MW-8	Isophorone	5	ug/L	U	R
MW-9	Isophorone	5	ug/L	U	R
MW-9	Isophorone	6	ug/L	U	R
MW-9	Isophorone	5	ug/L	U	R
DUP100308	2-Nitroaniline	10	ug/L	U	R
DUP100308	2-Nitroaniline	9	ug/L	U	R
DUP100308	2-Nitroaniline	9	ug/L	U	R
FB100308	2-Nitroaniline	10	ug/L	U	R
FB100308	2-Nitroaniline	27	ug/L	U	R
FB100308	2-Nitroaniline	40	ug/L	U	R
MW-7	2-Nitroaniline	9	ug/L	U	R
MW-7	2-Nitroaniline	11	ug/L	U	R
MW-7	2-Nitroaniline	10	ug/L	U	R
MW-7MS	2-Nitroaniline	96	ug/L		J
MW-7MS	2-Nitroaniline	86	ug/L		J
MW-7MS	2-Nitroaniline	87	ug/L		J
MW-7MSD	2-Nitroaniline	96	ug/L		J
MW-7MSD	2-Nitroaniline	86	ug/L		J
MW-7MSD	2-Nitroaniline	100	ug/L		J
MW-8	2-Nitroaniline	9	ug/L	U	R
MW-8	2-Nitroaniline	10	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-8	2-Nitroaniline	9	ug/L	U	R
MW-9	2-Nitroaniline	10	ug/L	U	R
MW-9	2-Nitroaniline	11	ug/L	U	R
MW-9	2-Nitroaniline	10	ug/L	U	R
DUP100308	3-Nitroaniline	10	ug/L	U	R
DUP100308	3-Nitroaniline	9	ug/L	U	R
DUP100308	3-Nitroaniline	9	ug/L	U	R
FB100308	3-Nitroaniline	10	ug/L	U	R
FB100308	3-Nitroaniline	27	ug/L	U	R
FB100308	3-Nitroaniline	40	ug/L	U	R
MW-7	3-Nitroaniline	9	ug/L	U	R
MW-7	3-Nitroaniline	11	ug/L	U	R
MW-7	3-Nitroaniline	10	ug/L	U	R
MW-7MS	3-Nitroaniline	86	ug/L		J
MW-7MS	3-Nitroaniline	79	ug/L		J
MW-7MS	3-Nitroaniline	77	ug/L		J
MW-7MSD	3-Nitroaniline	88	ug/L		J
MW-7MSD	3-Nitroaniline	81	ug/L		J
MW-7MSD	3-Nitroaniline	94	ug/L		J
MW-8	3-Nitroaniline	9	ug/L	U	R
MW-8	3-Nitroaniline	10	ug/L	U	R
MW-8	3-Nitroaniline	9	ug/L	U	R
MW-9	3-Nitroaniline	10	ug/L	U	R
MW-9	3-Nitroaniline	11	ug/L	U	R
MW-9	3-Nitroaniline	10	ug/L	U	R
DUP100308	2-Nitrophenol	5	ug/L	U	R
DUP100308	2-Nitrophenol	5	ug/L	U	R
DUP100308	2-Nitrophenol	5	ug/L	U	R
FB100308	2-Nitrophenol	5	ug/L	U	R
FB100308	2-Nitrophenol	14	ug/L	U	R
FB100308	2-Nitrophenol	20	ug/L	U	R
MW-7	2-Nitrophenol	5	ug/L	U	R
MW-7	2-Nitrophenol	5	ug/L	U	R
MW-7	2-Nitrophenol	5	ug/L	U	R
MW-7MS	2-Nitrophenol	81	ug/L		J
MW-7MS	2-Nitrophenol	83	ug/L		J
MW-7MS	2-Nitrophenol	83	ug/L		J
MW-7MSD	2-Nitrophenol	82	ug/L		J
MW-7MSD	2-Nitrophenol	88	ug/L		J
MW-7MSD	2-Nitrophenol	100	ug/L		J
MW-8	2-Nitrophenol	5	ug/L	U	R
MW-8	2-Nitrophenol	5	ug/L	U	R
MW-8	2-Nitrophenol	5	ug/L	U	R
MW-9	2-Nitrophenol	5	ug/L	U	R
MW-9	2-Nitrophenol	6	ug/L	U	R
MW-9	2-Nitrophenol	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
DUP100308	N-Nitrosodiphenylamine	5	ug/L	U	R
DUP100308	N-Nitrosodiphenylamine	5	ug/L	U	R
DUP100308	N-Nitrosodiphenylamine	5	ug/L	U	R
FB100308	N-Nitrosodiphenylamine	5	ug/L	U	R
FB100308	N-Nitrosodiphenylamine	14	ug/L	U	R
FB100308	N-Nitrosodiphenylamine	20	ug/L	U	R
MW-7	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-7	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-7	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-7MS	N-Nitrosodiphenylamine	120	ug/L		J
MW-7MS	N-Nitrosodiphenylamine	110	ug/L		J
MW-7MS	N-Nitrosodiphenylamine	110	ug/L		J
MW-7MSD	N-Nitrosodiphenylamine	120	ug/L		J
MW-7MSD	N-Nitrosodiphenylamine	110	ug/L		J
MW-7MSD	N-Nitrosodiphenylamine	130	ug/L		J
MW-8	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-8	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-8	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-9	N-Nitrosodiphenylamine	5	ug/L	U	R
MW-9	N-Nitrosodiphenylamine	6	ug/L	U	R
MW-9	N-Nitrosodiphenylamine	5	ug/L	U	R
DUP100308	Phenanthrene	0.2	ug/L	J	J
DUP100308	Phenanthrene	5	ug/L	U	R
DUP100308	Phenanthrene	5	ug/L	U	R
FB100308	Phenanthrene	5	ug/L	U	R
FB100308	Phenanthrene	14	ug/L	U	R
FB100308	Phenanthrene	20	ug/L	U	R
MW-7	Phenanthrene	0.4	ug/L	J	J
MW-7	Phenanthrene	5	ug/L	U	R
MW-7	Phenanthrene	5	ug/L	U	R
MW-7MS	Phenanthrene	98	ug/L		J
MW-7MS	Phenanthrene	93	ug/L		J
MW-7MS	Phenanthrene	89	ug/L		J
MW-7MSD	Phenanthrene	99	ug/L		J
MW-7MSD	Phenanthrene	91	ug/L		J
MW-7MSD	Phenanthrene	110	ug/L		J
MW-8	Phenanthrene	0.2	ug/L	J	J
MW-8	Phenanthrene	5	ug/L	U	R
MW-8	Phenanthrene	0.3	ug/L	J	J
MW-9	Phenanthrene	8	ug/L		J
MW-9	Phenanthrene	9	ug/L		J
MW-9	Phenanthrene	9	ug/L		J
DUP100308	Pyrene	5	ug/L	U	R
DUP100308	Pyrene	5	ug/L	U	R
DUP100308	Pyrene	5	ug/L	U	R
FB100308	Pyrene	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
FB100308	Pyrene	14	ug/L	U	R
FB100308	Pyrene	20	ug/L	U	R
MW-7	Pyrene	5	ug/L	U	R
MW-7	Pyrene	0.4	ug/L	J	J
MW-7	Pyrene	0.3	ug/L	J	J
MW-7MS	Pyrene	82	ug/L		J
MW-7MS	Pyrene	96	ug/L		J
MW-7MS	Pyrene	84	ug/L		J
MW-7MSD	Pyrene	84	ug/L		J
MW-7MSD	Pyrene	92	ug/L		J
MW-7MSD	Pyrene	100	ug/L		J
MW-8	Pyrene	5	ug/L	U	R
MW-8	Pyrene	5	ug/L	U	R
MW-8	Pyrene	5	ug/L	U	R
MW-9	Pyrene	5	ug/L	U	R
MW-9	Pyrene	6	ug/L	U	R
MW-9	Pyrene	5	ug/L	U	R
DUP100308	2,4,5-Trichlorophenol	5	ug/L	U	R
DUP100308	2,4,5-Trichlorophenol	5	ug/L	U	R
DUP100308	2,4,5-Trichlorophenol	5	ug/L	U	R
FB100308	2,4,5-Trichlorophenol	5	ug/L	U	R
FB100308	2,4,5-Trichlorophenol	14	ug/L	U	R
FB100308	2,4,5-Trichlorophenol	20	ug/L	U	R
MW-7	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-7	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-7	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-7MS	2,4,5-Trichlorophenol	96	ug/L		J
MW-7MS	2,4,5-Trichlorophenol	92	ug/L		J
MW-7MS	2,4,5-Trichlorophenol	86	ug/L		J
MW-7MSD	2,4,5-Trichlorophenol	95	ug/L		J
MW-7MSD	2,4,5-Trichlorophenol	90	ug/L		J
MW-7MSD	2,4,5-Trichlorophenol	110	ug/L		J
MW-8	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-8	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-8	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-9	2,4,5-Trichlorophenol	5	ug/L	U	R
MW-9	2,4,5-Trichlorophenol	6	ug/L	U	R
MW-9	2,4,5-Trichlorophenol	5	ug/L	U	R
DUP100308	2,4,6-Trichlorophenol	5	ug/L	U	R
DUP100308	2,4,6-Trichlorophenol	5	ug/L	U	R
DUP100308	2,4,6-Trichlorophenol	5	ug/L	U	R
FB100308	2,4,6-Trichlorophenol	5	ug/L	U	R
FB100308	2,4,6-Trichlorophenol	14	ug/L	U	R
FB100308	2,4,6-Trichlorophenol	20	ug/L	U	R
MW-7	2,4,6-Trichlorophenol	5	ug/L	U	R
MW-7	2,4,6-Trichlorophenol	5	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
MW-7	2,4,6-Trichlorophenol	5	ug/L	U	R
MW-7MS	2,4,6-Trichlorophenol	90	ug/L		J
MW-7MS	2,4,6-Trichlorophenol	84	ug/L		J
MW-7MS	2,4,6-Trichlorophenol	80	ug/L		J
MW-7MSD	2,4,6-Trichlorophenol	87	ug/L		J
MW-7MSD	2,4,6-Trichlorophenol	85	ug/L		J
MW-7MSD	2,4,6-Trichlorophenol	98	ug/L		J
MW-8	2,4,6-Trichlorophenol	5	ug/L	U	R
MW-8	2,4,6-Trichlorophenol	5	ug/L	U	R
MW-8	2,4,6-Trichlorophenol	5	ug/L	U	R
MW-9	2,4,6-Trichlorophenol	5	ug/L	U	R
MW-9	2,4,6-Trichlorophenol	6	ug/L	U	R
MW-9	2,4,6-Trichlorophenol	5	ug/L	U	R
DUP100308	Calcium	89600	ug/L		J
FB100308	Calcium	24800	ug/L		J
MW-7	Calcium	172000	ug/L		J
MW-7MS	Calcium	182528	ug/L		J
MW-7MSD	Calcium	178266	ug/L		J
MW-8	Calcium	88400	ug/L		J
MW-9	Calcium	374000	ug/L		J

Qualified Soil Results using MS/MSD Recoveries:

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
B-31	Aroclor 1260	72	ug/Kg		J
B-32	Aroclor 1260	39	ug/Kg		J
B-33	Aroclor 1260	89	ug/Kg		J
B-33MS	Aroclor 1260	220	ug/Kg		J
B-33MSD	Aroclor 1260	250	ug/Kg		J
B-34	Aroclor 1260	12	ug/Kg	J	J
B-35	Aroclor 1260	42	ug/Kg	U	R
B-36	Aroclor 1260	24	ug/Kg	U	R
DUP091208	Aroclor 1260	40	ug/Kg		J
FB091208	Aroclor 1260	0.56	ug/L	U	R
B-31	Aluminum	7580	mg/Kg	N	R
B-32	Aluminum	9650	mg/Kg	N	R
B-33	Aluminum	7530	mg/Kg	N	R
B-33MS	Aluminum	13757.71	mg/Kg	N	R
B-33MSD	Aluminum	11855.73	mg/Kg		J
B-34	Aluminum	7360	mg/Kg	N	R
B-35	Aluminum	6090	mg/Kg	N	R
B-36	Aluminum	10000	mg/Kg	N	R
DUP091208	Aluminum	7520	mg/Kg	N	R
FB091208	Aluminum	23.6	ug/L	U	R

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
B-31	Barium	433	mg/Kg		J
B-32	Barium	156	mg/Kg		J
B-33	Barium	445	mg/Kg		J
B-33MS	Barium	585.8547	mg/Kg		J
B-33MSD	Barium	604.5689	mg/Kg		J
B-34	Barium	300	mg/Kg		J
B-35	Barium	204	mg/Kg		J
B-36	Barium	146	mg/Kg		J
DUP091208	Barium	151	mg/Kg		J
FB091208	Barium	0.28	ug/L	U	R
B-31	Calcium	137000	mg/Kg	*	R
B-32	Calcium	157000	mg/Kg	*	R
B-33	Calcium	127000	mg/Kg	*	R
B-33MS	Calcium	177481.4	mg/Kg		J
B-33MSD	Calcium	102762.3	mg/Kg		J
B-34	Calcium	166000	mg/Kg	*	R
B-35	Calcium	103000	mg/Kg	*	R
B-36	Calcium	154000	mg/Kg	*	R
DUP091208	Calcium	111000	mg/Kg	*	R
FB091208	Calcium	100	ug/L	U	R
B-31	Copper	432	mg/Kg		J
B-32	Copper	125	mg/Kg		J
B-33	Copper	402	mg/Kg		J
B-33MS	Copper	548.6708	mg/Kg		J
B-33MSD	Copper	564.5671	mg/Kg		J
B-34	Copper	236	mg/Kg		J
B-35	Copper	218	mg/Kg		J
B-36	Copper	72.5	mg/Kg		J
DUP091208	Copper	108	mg/Kg		J
FB091208	Copper	1.3	ug/L	U	R
B-31	Iron	19100	mg/Kg	N	R
B-32	Iron	10800	mg/Kg	N	R
B-33	Iron	14600	mg/Kg	N	R
B-33MS	Iron	21136.23	mg/Kg	N	R
B-33MSD	Iron	19839.84	mg/Kg		J
B-34	Iron	13900	mg/Kg	N	R
B-35	Iron	14500	mg/Kg	N	R
B-36	Iron	15600	mg/Kg	N	R
DUP091208	Iron	7210	mg/Kg	N	R
FB091208	Iron	19.3	ug/L	U	R
B-31	Lead	807	mg/Kg		J
B-32	Lead	269	mg/Kg		J
B-33	Lead	809	mg/Kg		J
B-33MS	Lead	1004.862	mg/Kg		J
B-33MSD	Lead	1030.14	mg/Kg		J

Sample	Constituents	Results	Units	Lab Qualifier	Validation Qualifier
B-34	Lead	442	mg/Kg		J
B-35	Lead	370	mg/Kg		J
B-36	Lead	83	mg/Kg		J
DUP091208	Lead	226	mg/Kg		J
FB091208	Lead	2.9	ug/L	U	R
B-31	Magnesium	8250	mg/Kg	N	R
B-32	Magnesium	7930	mg/Kg	N	R
B-33	Magnesium	8790	mg/Kg	N	R
B-33MS	Magnesium	14731.06	mg/Kg	N	R
B-33MSD	Magnesium	13695.11	mg/Kg		J
B-34	Magnesium	10700	mg/Kg	N	R
B-35	Magnesium	6420	mg/Kg	N	R
B-36	Magnesium	21900	mg/Kg	N	R
DUP091208	Magnesium	4850	mg/Kg	N	R
FB091208	Magnesium	42.3	ug/L	U	J
B-31	Manganese	463	mg/Kg		J
B-32	Manganese	275	mg/Kg		J
B-33	Manganese	394	mg/Kg		J
B-33MS	Manganese	547.8333	mg/Kg		J
B-33MSD	Manganese	481.1672	mg/Kg		J
B-34	Manganese	322	mg/Kg		J
B-35	Manganese	166	mg/Kg		J
B-36	Manganese	353	mg/Kg		J
DUP091208	Manganese	217	mg/Kg		J
FB091208	Manganese	0.24	ug/L	U	R
B-31	Zinc	1110	mg/Kg		J
B-32	Zinc	268	mg/Kg		J
B-33	Zinc	1130	mg/Kg		J
B-33MS	Zinc	1260.092	mg/Kg		J
B-33MSD	Zinc	1423.968	mg/Kg		J
B-34	Zinc	661	mg/Kg		J
B-35	Zinc	506	mg/Kg		J
B-36	Zinc	340	mg/Kg		J
DUP091208	Zinc	227	mg/Kg		J
FB091208	Zinc	3.6	ug/L	U	R

APPENDIX C

Laboratory Data