GROUNDWATER AND STREAM ASSESSMENT REPORT
MERCHANTS METALS
Statesville, Iredell County, North Carolina

ESI Project ER10-125.02
August 26, 2011

FOR

Merchants Metals, Inc.
165 Fanjoy Road
Statesville, NC 28687

BY

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NORTH CAROLINA LICENSED 8-29-11 SEAL 1645 GEOLOGIST MICHAEL JAMES BURNS

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Table of Contents

Attachments

ACRONYMS

AC	Asphalt Concrete/Liquid Asphalt
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BG	Background Sample
BGS	Below the Ground Surface
CESQG	Conditionally Exempt Small Quantity Generator
COC	Contaminant of Concern
CORRACTS	Corrective Action Report (RCRA)
DENR	Department of Environment and Natural Resources
DMW	Deep Monitoring Well
DOT	Department of Transportation
DRO	Diesel Range Organic
DWM	Division of Waste Management
ECHO	Enforcement and Compliance History Online
EDR	Environmental Data Resources, Inc.
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ESI	Environmental Services, Inc.
GRO	Gasoline Range Organic
HWS	Hazardous Waste Section
IHSB	Inactive Hazardous Sites Branch
LUST	Leaking Underground Storage Tank
MEK	2-Butanone
MSCC	Maximum Soil Contaminant Concentrations
MW	Monitoring Well
NCDENR	North Carolina Department of Environmental and Natural Resources
NPDES	National Pollution Discharge Elimination System
PAH	Polycyclic Aromatic Hydrocarbon
RAP	Recycled Asphalt
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
REC	Registered Environmental Consultant
RSM	Registered Site Manager
TCLP	Toxicity Characteristic Leaching Procedure
TMW	Temporary Monitoring Well
TPH	Total Petroleum Hydrocarbon
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WSW	Water Supply Well

RECEIVED
JAN 19 2012
NCDENR MRO IHSB

1.0 INTRODUCTION

Environmental Services, Inc. (ESI) has completed the Groundwater and Stream Assessment Report at the Merchants Metals, Inc., facility located at 165 Fanjoy Road in Statesville, Iredell County, North Carolina **(Figure 1** in **Appendix 1)**. The *property* is located at 35°47'47.71"N latitude and 80°49'25.49"W longitude (center of *property*). The purpose of the Groundwater and Stream Assessment (hereafter referred to as *Assessment*) was to evaluate concentrations of zinc, lead and cadmium in groundwater near the former galvanizing building, in the onsite surface water, in the onsite stream sediment, and in stormwater runoff as requested in the North Carolina Department of Environment and Natural Resources (NCDENR) - Hazardous Waste Section (HWS) letter dated April 7, 2011. Tabulated summaries of information and data (as well as appropriate figures) have been provided.

2.0 AREAS OF CONCERN

Pursuant to the April 7, 2011 NCDENR-HWS letter, ESI was to perform an *Assessment* of the following areas of concern:

- Onsite stream sediment and surface water.
- Stormwater runoff from culverts that empty into the onsite stream.
- Groundwater in the area of the former galvanizing building.

2.1 Contaminants of Concern

Based on previous assessment work completed for the project, the contaminants of concerns for the *Assessment* are zinc, lead and cadmium.

3.0 ASSESSMENT

The areas of concern identified in Section 2.0 were assessed between June 21 and 23, 2011. The following sections describe the sample locations, sample collection methods and procedures.

3.1 Surface Water and Sediment Sampling

The stream assessment activities were proposed to include the collection of upstream sediment and surface water was well as downstream sediment and surface water samples to evaluate for the presence of zinc, lead and cadmium. ESI personnel performed a site reconnaissance of the western wooded portions of the *property* on June 21 and 23, 2011

to evaluate potential sample collection locations. ESI personnel walked the stream to the south and noted that the flowing portion continued to the east, then to the north and ended at what appeared to be a spring at the base of the slope. The spring appeared to be one of sources of the surface water along with possibly groundwater recharge and was continuously flowing. ESI personnel also noted three (3) culverts/pipes in the southern portion of the wooded area that ran from stormwater drains in the paved production/storage areas and emptied into, at the time, dry stormwater channels that connected to the stream. The stream and stormwater channels were traversed and mapped in approximate locations by the field personnel. The approximate locations of the stream and stormwater channels are presented on **Figure 2** in the **Appendix 1**. None of the stormwater channels contained water during the investigation and the spring as well as the stream only had base-flow (low flow) due to the very little rainfall up to that point during 2011. A four (4) feet diameter culvert was noted to the north of where the stream became perennial and a smaller culvert was noted in the northwestern portion of the *property* where a streams flows from the adjacent landfill onto the site. ESI did not note any perennial streams that flow from offsite onto the *property* for the collection.

3.1.1 Spring Sampling

Since the spring appeared to be where some of the stream flow originated on the site, ESI personnel collected a water sample (P-1/GW) and a sediment sample (P-1/SED). There was buried fence materials, empty drums and other debris noted in the area where the spring originated. The spring samples were collected and submitted for laboratory analysis for zinc, lead and cadmium per SW846-6010C. The water samples included SM-3030C preparation. **Figure 3** in **Appendix 1** shows the approximate location of the spring and sample locations.

3.1.2 Surface Water and Sediment Sampling

After collecting the spring samples, ESI personnel collected surface water and sediment samples at an area south of a large four feet diameter drainage culvert and along the stream at the northern *property* line (downstream). The sample locations are presented on **Figure 3** in **Appendix 1**. The surface water samples

were collected immediately upstream from the sediment sample locations to ensure that a minimal amount of sediment in the water samples. The surface water samples were placed directly into the laboratory-prepared containers and submitted for laboratory analysis for zinc, lead and cadmium per SW846-6010C with SM-3030C preparation. The sediment samples were collected from the upper four inches of the steam bed and placed in laboratory-prepared containers. Disposable nitrile gloves were worn between samples locations. The sediment samples were submitted for laboratory analysis for zinc, lead and cadmium per SW846-6010C.

3.1.3 Stormwater Runoff Samples

ESI has not collected stormwater runoff samples at the site since there haven't been predictable representative storm events. The only storm events that have occurred since the beginning of the *Assessment* are summer pop-up storms which have difficult to predict duration and coverage. ESI plans to collect the stormwater runoff samples in the near future during a predictable, representative storm event. The sample results will be forwarded to NCDENR-HWS once the sampling has been completed.

3.2 Groundwater Assessment

On June 21 through 22, 2011, ESI provided oversight of the installation of shallow monitoring wells MW-1, MW-2 and MW-3 to evaluate groundwater impact with zinc, lead and cadmium. Monitoring well MW-1 was installed immediately to the west of the former galvanizing building as close as possible to the old hydrochloric acid tank. Monitoring well MW-2 was installed to the northwest of the former galvanizing building and monitoring well MW-3 was installed on the east side of the former galvanizing building. During the drilling activities for the monitoring well, soil cuttings were observed and classified in the field by a senior geologist. The monitoring wells were completed as type II wells consisting of 10 feet of 2-inch diameter slotted PVC well screen, and 40 feet (MW-2 and MW-3) or 45 feet (MW-1) of 2-inch diameter solid PVC riser to the ground surface. The PVC well sections were attached using threaded joints;

no PVC glue or solvents will be used in the monitoring well construction. A sand pack of #2 torpedo sand was placed from the bottom of the soil boring to one foot above the well screen interval. A two foot thick layer of bentonite was placed above the sand pack. Cement grout was tremied into the soil boring to the ground surface. The well was constructed with a 2 foot by 2 foot concrete pad, with a flush-mount manhole cover and locking cap. The monitoring well construction logs and soil boring logs are included in the **Appendix 2**. The top of casing elevations were measured referencing monitoring well MW-1 as a datum of 100 feet. The monitoring well construction details are provided on **Table 1** in the **Appendix 3**. The monitoring well locations are provided as **Figure 3** in **Appendix 1.**

The monitoring wells were developed using a submersible pump until the groundwater was mostly free of sediment. Samples of the development water were collected for laboratory analysis and the development water was drummed for proper disposal.

The monitoring wells were purged using a submersible pump through a flow cell. Measurements of pH, specific conductivity, temperature, dissolved oxygen, turbidity and oxidation reduction potential (ORP) were performed following each purged well volume until there were two (2) or three (3) consecutive stabilized readings of each parameter. Once the parameters had stabilized, groundwater samples were collected for laboratory analyses for zinc, lead and cadmium per SW846-6010C with SM-3030C preparation. Field sample logs that include the purge data is provided in **Appendix 4**.

3.3 Field and Laboratory QA/QC

To prevent cross contamination in the field that could result in inaccurate analytical data, ESI required subcontracted firms and field personnel to observe strict decontamination procedures. The decontamination procedures are briefly described below.

3.3.1 Drilling Equipment Decontamination Procedure

The drilling contractor was required to setup a decontamination pad away from the assessment area. The decontamination pad consisted of several layers (at least 3) of plastic sheeting of sufficient length and width for the drill rig to fit onto with at least

a 5 foot space between the drill rig and the ground surface on all sides. The base of the decontamination pad was constructed in a way so that the decontamination water would drain to a location where it was collected into 55-gallon drums for storage until laboratory results were evaluated. The drill rigs and drilling equipment were decontaminated using a high pressure steam cleaner. The drill rigs and drilling equipment were steam cleaned upon arrival to the *property*, between each soil boring, and prior to leaving the *property*. Any hand drilling equipment used was steam cleaned prior to, between soil borings, and after any drilling activities. The effectiveness of the decontamination process was evaluated by collecting equipment rinsate blanks (EB-1 and EB-2) for laboratory analyses. The equipment rinsate results are summarized on **Table 5** in **Appendix 3**. The laboratory reports are included as **Appendix 5.**

3.3.2 Personnel Decontamination Procedures

All field personnel were required to wear disposable nitrile gloves during sampling activities. The gloves were stored in a new Ziploc plastic bag between sample locations to prevent cross-contamination. The gloves were changed and discarded after collection of each sample. The gloves were changed and discarded if they were damaged during sampling.

3.3.3 Field Instrument Decontamination Procedures

Field instruments, such as groundwater probes and water quality probes, were decontaminated in a three (3) step process prior use at each sample location. The decontamination steps were as follows:

- Step 1: Spray instrument with Liqui-Nox™/deionized water to wash
- Step 2: Spray with clean deionized water to rinse
- Step 3: Spray with isopropyl alcohol/deionized water

Following decontamination, the instruments were allowed to air dry, then wrapped in plastic to protect them from coming into contact with potential sources of contamination, and stored in a sealed container.

3.4 Field and Laboratory QA/QC

3.4.1 Field QA/QC

There were several types of field-generated quality controls utilized by ESI. These controls were the use of field-cleaned equipment rinsate and duplicate samples. ESI collected field-cleaned equipment rinsate as well as sediment and groundwater duplicate samples. The equipment rinsate and duplicate samples results are provided on **Tables 2, 3, 4 and 5** in **Appendix 3**. The laboratory results are provided as **Appendix 5**.

3.4.2 Laboratory QA/QC

All sample bottles, vials and jars were received by the subcontracted laboratory already pre-cleaned and contained the proper preservative, if needed, for the appropriate laboratory method. A clean insulated cooler was provided as well to hold sample containers. Prior to sampling, the ESI senior geologist filled the cooler with ice. The cooler was kept isolated away from possible contamination, like other equipment and containers, during the entire sampling event (from the laboratory to the site and back to the laboratory). All equipment and containers were also organized into sections of used vs. unused. Container types, preservation techniques, holding times, and transport methods are as specified for the appropriate laboratory methods.

Chain-of-custody documentation was implemented in the field and accompanied the samples to the laboratory. A state-certified, subcontracted laboratory analyzed all samples using approved analytical methods. The laboratory reports which include the QA/QC data are provided as **Appendix 5**.

3.5 Analytical Methods

Based on the established contaminants of concern, ESI performed laboratory analyses for sediment, surface water and groundwater samples as follows:

Analytical Methods

- Metals (SW-846 Method 6010C), zinc, lead and cadmium
- SM-3030C Preparation, metals in water

3.6 Soil Cuttings and Purge Water Management

During the *Assessment*, ESI placed soil cuttings, purge water, and decontamination water into dedicated 55-gallon drums. The 55-gallon drums are labeled as to the date they were containerized, the origin of the soil and/or water, and the responsible consultant. Following the completion of the field work, there were 24 drums onsite awaiting disposal. As part of the field work, ESI personnel collected samples of the development water and soil cuttings for laboratory analysis per SW846-6010C with SM-3030C preparation for water samples. The laboratory results for the development water and soil cuttings analysis are summarized on **Table 6** in **Appendix 3** and the laboratory reports are provided in **Appendix 5**.

On August 8, 2011, ESI personnel mobilized to the site to meet Shamrock Environmental Corporation (Shamrock). Shamrock loaded the drums onto a truck and transported the drums offsite for disposal at an NCDENR-approved facility. The material manifest is provided in **Appendix 6**. No drums related to this *Assessment* remain on the *property*.

4.0 SITE GEOLOGY AND HYDROGEOLOGY

4.1 Site Geologic Conditions

The *property* is located in the Piedmont physiographic province of North Carolina. Based on the 1985 Geologic Map of North Carolina, the *property* is underlain by mafic metavolcanic rock and biotite gneiss.

4.2 Subsurface Conditions

The subsurface conditions observed in the soil borings advanced for the monitoring wells consisted of an upper stratum of micaceous clay with low to medium plasticity to 42 feet below ground surface (bgs) and 45 feet bgs. There were some interbedded gravelly clay layers in borings MW-2 and MW-3 between about 32 feet and 36 feet bgs. The micaceous clay material was generally underlain by a very hard clay layer that extended between 43 feet bgs and 48 feet bgs. The hard clay layer was generally underlain by sandy clay to the maximum boring termination depth of 55 feet bgs. Saturated soil was generally encountered at between 40 feet and 50 feet bgs in the soil borings. The soil borings logs are provided in **Appendix 2.**

4.2.1 Hydrogeologic Conditions

Groundwater levels in the monitoring wells were measured using a Solinist water level meter capable of readings to 0.01 feet. The water level meter was decontaminated between measurements to prevent cross-contamination. The water level meter was lowered into the well until a tone sounded and the depth was recorded. Groundwater levels measured on June 23, 2011 in the monitoring well MW-1 was 39.04 feet bgs, MW-2 was 37.86 feet bgs, and MW-3 was 38.20 feet bgs. The groundwater level measurement data from the monitoring wells are provided on **Table 1** in **Appendix 3.** A groundwater contour map is provided as **Figure 4** in **Appendix 1.** Based on the groundwater elevation data collected on June 23, 2011, groundwater in the vicinity of the former galvanizing building appears to be flowing to the northwest.

5.0 ASSESSMENT RESULTS

5.1 Sediment Sampling

As mentioned in Section 3.1, ESI collected samples from three (3) locations along the onsite stream. A sediment sample was collected at the point where the spring discharged to the stream channel (P-1), along the western *property* line (SED-2), and at the northern *property* line (SED-1) where the stream exits the site. The sediment samples were

collected from the upper four inches of the stream bed and submitted for laboratory analysis for zinc, lead and cadmium per SW846-6010C.

The laboratory results from the sediment samples were compared to the EPA Region 4 Waste Management Division, Sediment Screening Values for Hazardous Waste Sites as directed by the NCDENR-HWS. The following is a summary of the analytical results from the June 23, 2011 sampling:

- ✓ Zinc concentrations exceeded the Screening Value/Effects Value of 124 milligrams per kilogram (mg/Kg) in sample locations P-1 (4790 mg/Kg) and SED-2 (1430 mg/Kg).
- ✓ Cadmium concentrations exceeded the Screening Value of 1 mg/Kg and the Effects Value of 0.676 mg/Kg in sample location P-1 (4.53 mg/Kg).

The laboratory results are summarized on **Table 2** in **Appendix 3**. The laboratory reports are provided in **Appendix 5**.

5.2 Surface Water Sampling

As mentioned in Section 3.1, ESI collected samples from three (3) locations along the onsite stream. A surface sample was collected at the spring (P-1), along the western *property* line (SW-2), and at the northern *property* line (SW-1) where the stream exits the site. The surface water samples were collected from and submitted for laboratory analysis for zinc, lead and cadmium per SW846-6010C with SM-3030C preparation. All of the surface water samples were clear and appeared to be free of sediment.

The laboratory results from the surface water samples were compared to the 15A North Carolina Administrative Code (NCAC) Freshwater Quality Standards (NC 2B). The following is a summary of the analytical results from the June 23, 2011 sampling:

- ✓ Zinc concentrations exceeded the NC 2B Standard of 50 micrograms per liter (ug/L) in sample locations P-1 (2280 ug/L), SW-2 (413 ug/L) and SW-1 (152 ug/L).

The laboratory results are summarized on **Table 3** in **Appendix 3**. The laboratory reports are provided in **Appendix 5**.

5.3 Groundwater Sampling

As mentioned in Section 3.2, ESI collected samples from three (3) shallow monitoring wells (MW-1, MW-2 and MW-3) installed in the vicinity of the former galvanizing building. The groundwater samples were submitted for laboratory analysis for zinc, lead and cadmium per SW846-6010C with SM-3030C preparation.

The laboratory results from the groundwater samples were compared to the 15A NCAC 2L Groundwater Quality Standards (NC 2L). The following is a summary of the analytical results from the June 23, 2011 sampling:

- ✓ Zinc concentrations exceeded the NC 2L of 1000 micrograms per liter (ug/L) in sample location MW-1 (4390 ug/L).
- ✓ Cadmium concentrations exceeded the NC 2L of 2 ug/L and in sample location MW-1 (2.6 ug/L).

The laboratory results are summarized on **Table 4** in **Appendix 3**. The laboratory reports are provided in **Appendix 5**.

The field measurements for pH completed during the groundwater sampling indicated levels of about 5.2 Standard Units (SU) in monitoring well MW-1, 5.5 SU in MW-2, and 5.0 SU in MW-3. The pH levels in the monitoring wells appear to be slightly acidic.

6.0 ASSESSMENT CONCLUSIONS

On June 21, 22 and 23, 2011, ESI completed the sediment, surface water and groundwater assessment at the Merchants Metals facility in Statesville, North Carolina. The stormwater runoff portion of the *Assessment* was not completed since predictable storm events did not occur as of the date of this report. The stormwater runoff sampling is planned for the next representative, predictable storm event and the data will be forwarded to the NCDENR-HWS upon receipt of those results. The scope of the *Assessment* was per an April 7, 2011 NCDENR-HWS response to the ISSP Report.

Based on the field reconnaissance of the site stream, ESI noted that a groundwater-fed spring is located immediately downhill of the former galvanizing building. The spring appears to be a source of the water for the flowing portion of the stream. The stream flows from the spring to the south, then west, and then north toward the northern *property* line. There were several culverts that appear to originate in the paved production/storage areas of the facility and empty into stormwater channels that lead to the main stream. A portion of a stream from the adjacent landfill enters the *property* near the northwest portion and flows into the onsite stream.

The subsurface conditions encountered in the soil borings for the monitoring wells consisted of consisted of an upper stratum of micaceous clay with low to medium plasticity. The micaceous clay material was generally underlain by a very hard clay layer. The hard clay layer was generally underlain by sandy clay to the maximum boring termination depth of 55 feet bgs. Saturated soil was generally encountered at between 40 feet and 50 feet bgs in the soil borings.

Based on the laboratory results for the sediment samples collected from the stream at three (3) locations, it appears that the sediment at the spring and at the sample point along the western *property* line are impacted by zinc above the EPA Region 4 Screening/Effects Value. Cadmium concentrations at the spring exceeded both the EPA Region 4 Screening Value and Effects Value. None of the other concentrations exceeded the EPA Region 4 Screening Values or Effects Values.

Based on the laboratory results from the surface water samples collected from the stream at three (3) locations, it appears that the surface water at the spring, at the sample point along the western *property* line, and at the downstream location near the northern *property* line are impacted by zinc above the NCDENR Freshwater Quality Standards (2B). None of the concentrations of lead or cadmium exceeded the 2B Standards.

Groundwater samples were collected from monitoring wells MW-1, MW-2 and MW-3 as part of this *Assessment*. Based on the data collected, the zinc and cadmium concentrations at monitoring well MW-1, which was the closest to the former hydrochloric acid tank, exceeded the NC 2L Standards. Lead concentrations at monitoring well MW-1 were below the NC 2L Standard. None of the concentrations detected at monitoring wells MW-2 or MW-3 met or exceeded the applicable NC 2L Standard.

It is ESI's understanding that since groundwater impact has been detected above regulatory standards, the incident may be referred to the NCDENR Inactive Hazardous Sites Branch for further assessment and remediation.

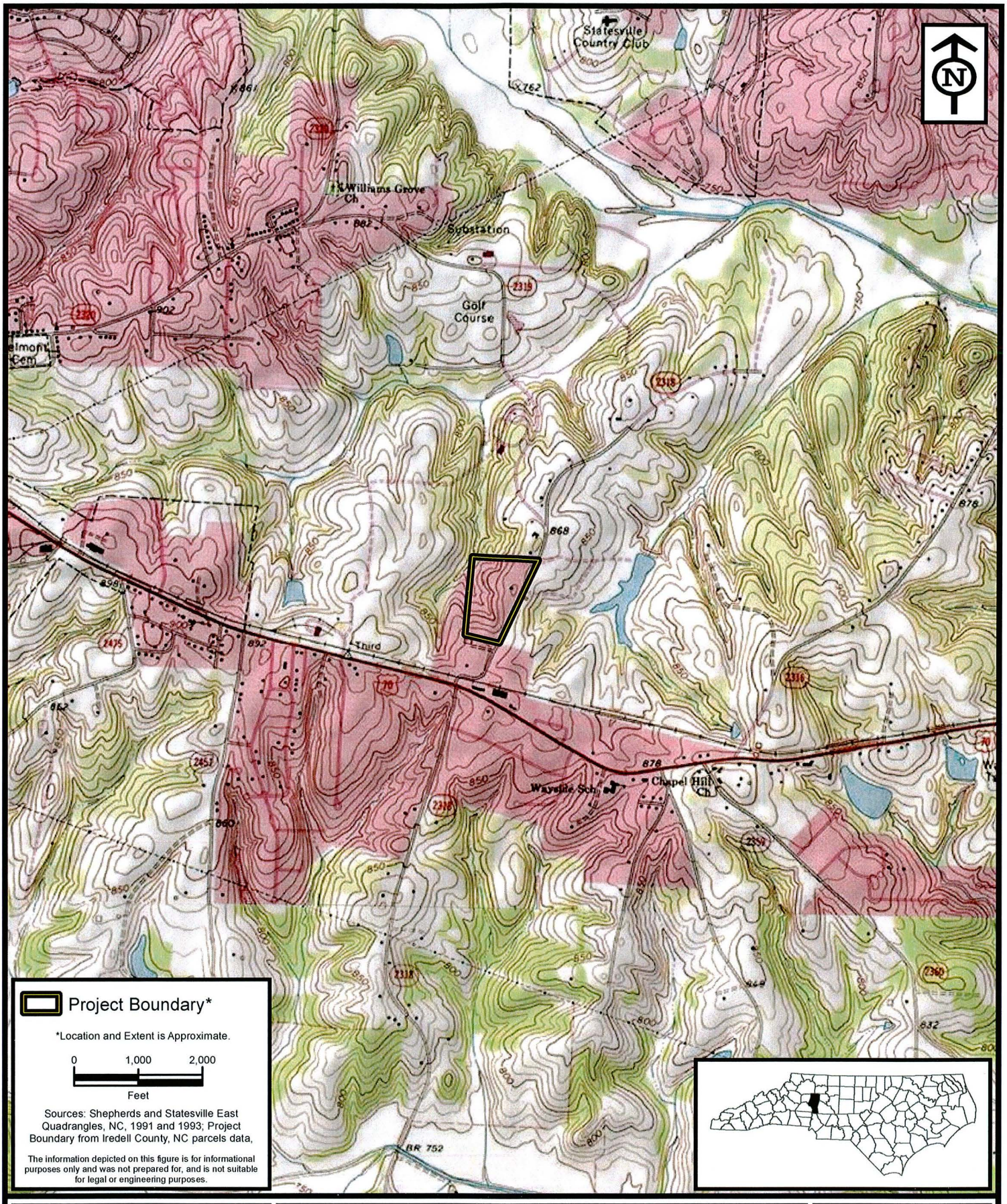
7.0 LIMITATIONS

This monitoring report is limited to the amount of data available from the assessment/monitoring data and testing activities performed by others at the site. This *Assessment* report has been prepared in accordance with generally accepted hydrogeology practices in the State of North Carolina. Reproduction of this document is not authorized, unless as specified by our client, its designees, or ESI.

8.0 ACKNOWLEDGEMENT

ESI appreciates the opportunity to provide professional environmental services to Merchants Metals. If there are any questions, the Raleigh office of ESI should be contacted at (919) 212-1760.

APPENDIX 1



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Project Location

Merchants Metals

Iredell County, North Carolina

Project:	ER10125.02
Date:	Aug 2011
Drwn/Chkd:	KT/MB
Figure:	1

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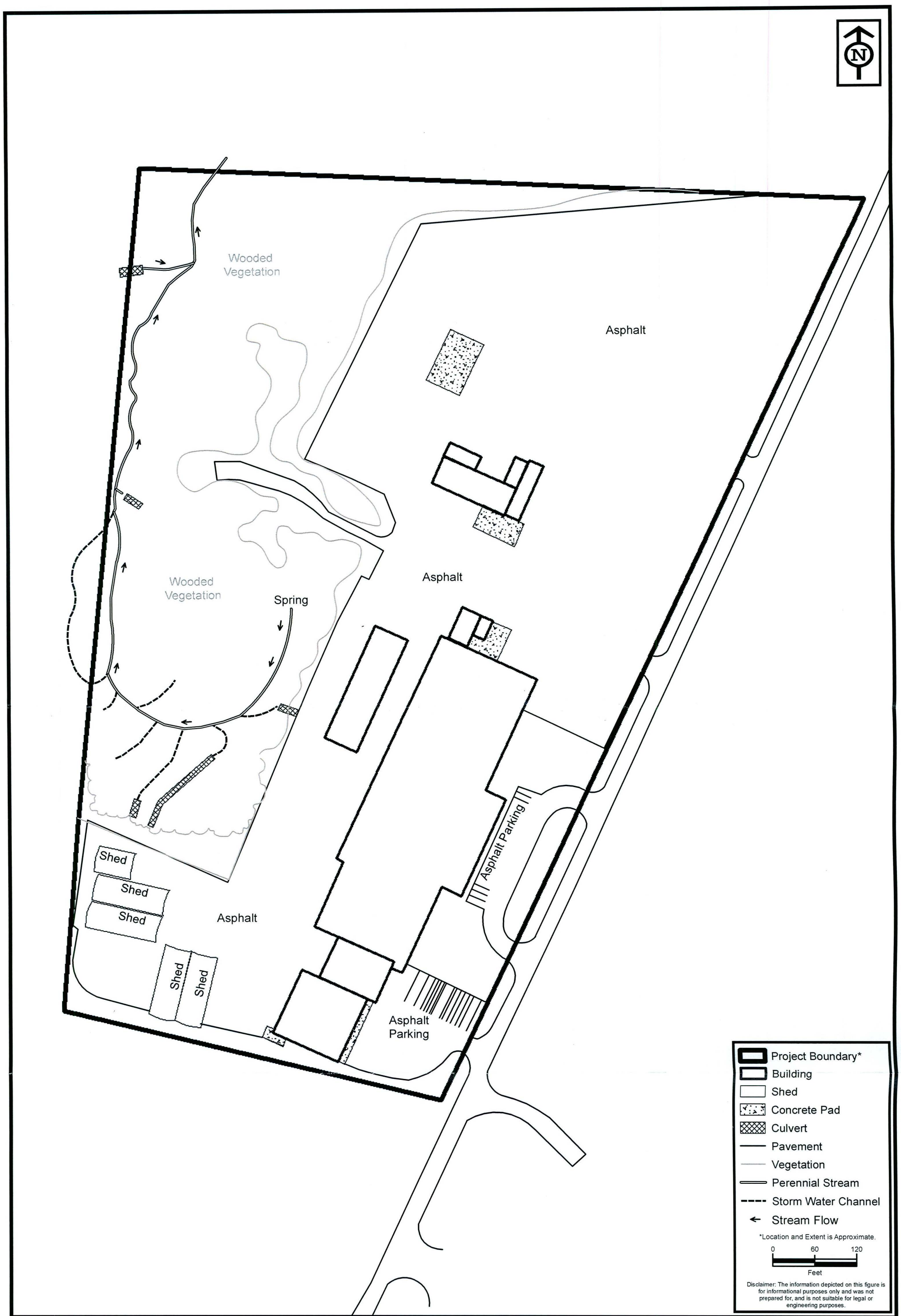

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Site Plan

Merchants Metal

Iredell County, North Carolina

Project:	ER10125.02
Date:	Aug. 2011
Drwn/Chkd:	KT/MB
Figure:	2

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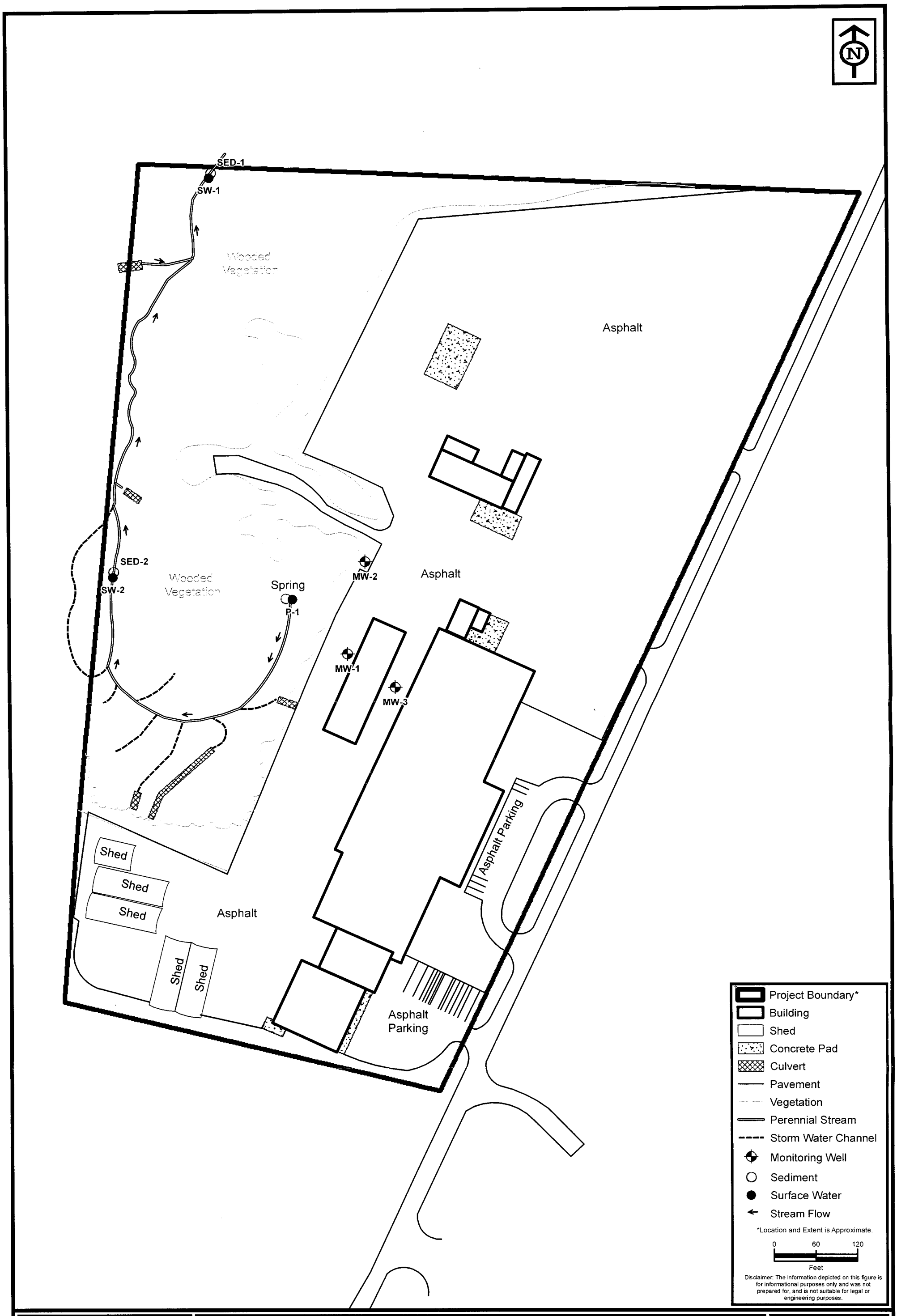

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Sample Locations

Merchants Metal

Iredell County, North Carolina

Project:	ER10125.02
Date:	Aug. 2011
Drwn/Chkd:	KT/MB
Figure:	3

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N

Wooded Vegetation

Asphalt

(60.50)

(61.00)

(61.50)

(60.27)

Wooded Vegetation

Spring

Asphalt

(60.96)

(61.70)

Asphalt Parking

Shed

Shed

Shed

Asphalt

Shed

Shed

Asphalt Parking

- Project Boundary*
- Building
- Shed
- Pavement
- GW Contour
- Vegetation
- Concrete Pad
- Culvert
- Perennial Stream
- Storm Water Channel
- Monitoring Well
- (60.96) GW Elevation
- Direction of GW Flow
- Stream Flow

*Location and Extent is Approximate.

0 60 120

Feet

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for, and is not suitable for legal or engineering purposes.

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Groundwater Contours

Merchants Metal

Iredell County, North Carolina

Project:	ER10125.02
Date:	Aug. 2011
Drwn/Chkd:	KT/MB
Figure:	4

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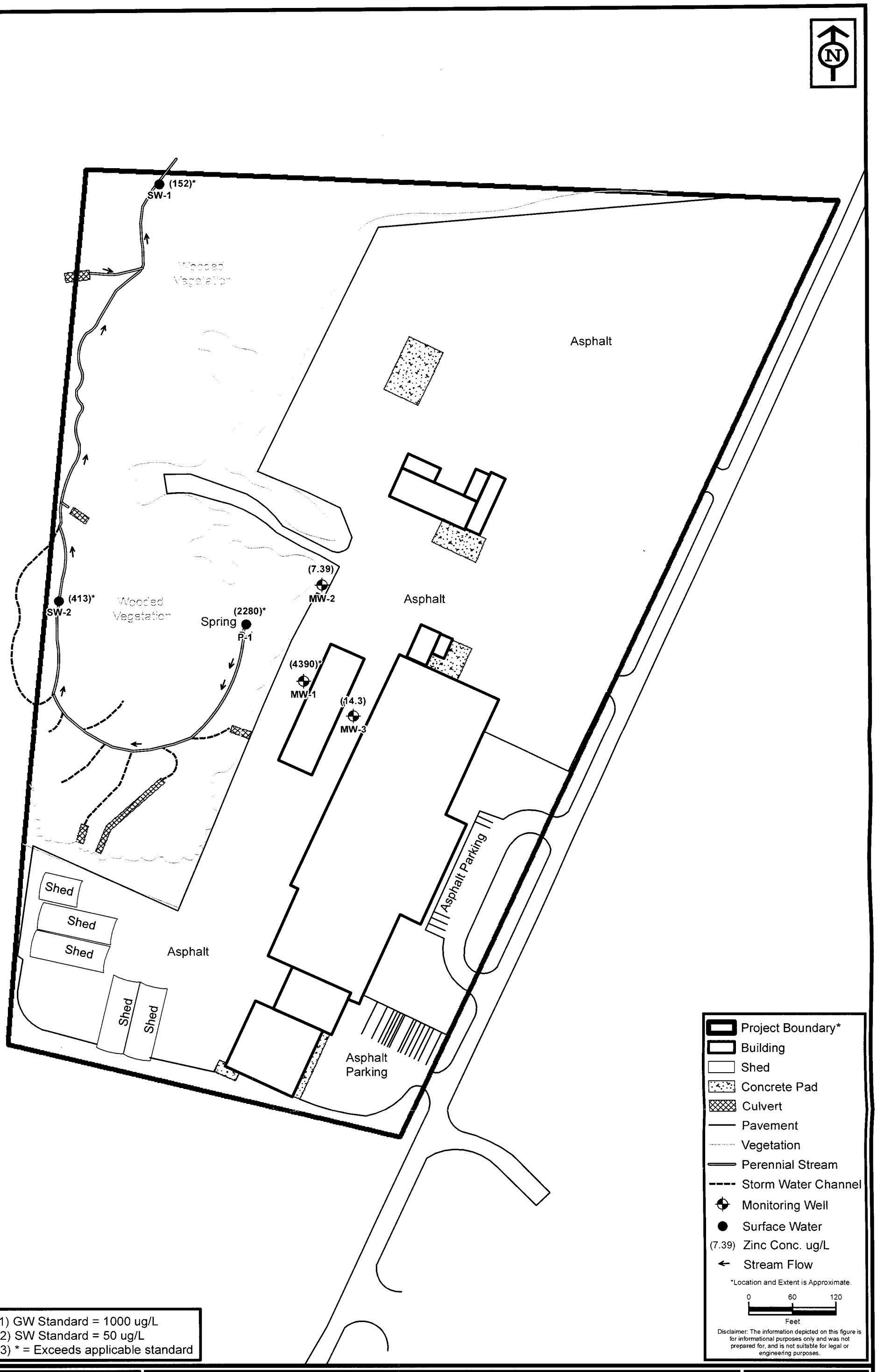

Note: 1) GW Standard = 1000 ug/L
2) SW Standard = 50 ug/L
3) * = Exceeds applicable standard

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Groundwater/ Surface Water Concentrations - Zinc

Merchants Metal

Iredell County, North Carolina

Project:	ER10125.02
Date:	Aug. 2011
Drwn/Chkd:	KT/MB
Figure:	5

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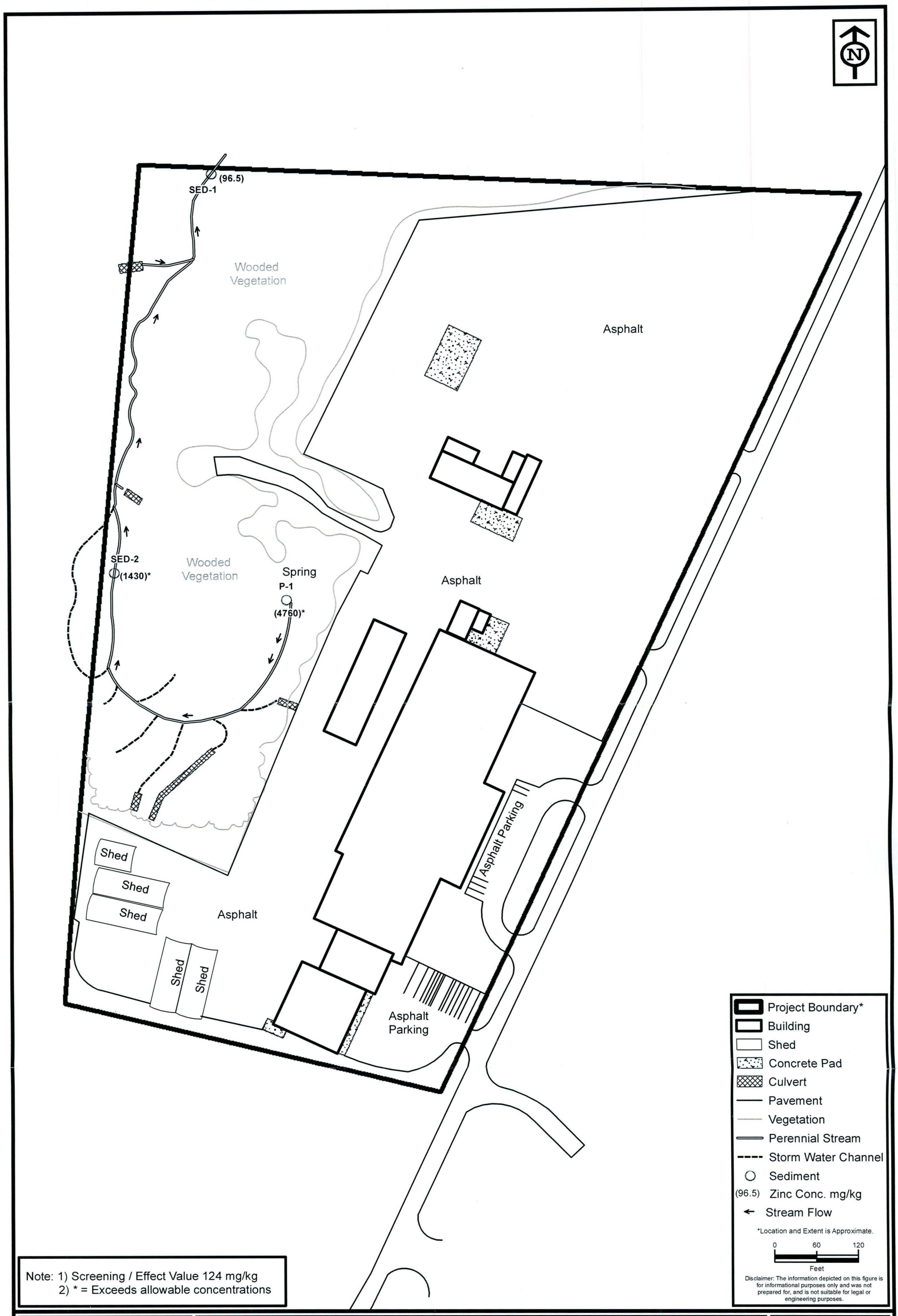

Note: 1) Screening / Effect Value 124 mg/kg
2) * = Exceeds allowable concentrations

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Sediment Concentrations - Zinc

Merchants Metal

Iredell County, North Carolina

Project:	ER10125.02
Date:	Aug. 2011
Drwn/Chkd:	KT/MB
Figure:	6

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APPENDIX 2

Project: Merchants Metals
Project Location: Statesville, Iredell County, North Carolina
Project Number: ER10-125.02

Log of Boring MW-1

Sheet 1 of 1

Date(s) Drilled **June 21, 2011**	Logged By **Brett Miller**	Checked By **MJB**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **8.2 inch**	Total Depth of Borehole **55 feet bgs**
Drill Rig Type **Drillmax 2400**	Drilling Contractor **Geologic Exploration, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **39.04 feet measured on 6/23/11**	Sampling Method(s) **None**	Hammer Data
Borehole Backfill	Location **West side of former Galvanizing Building**	

Elevation, feet	Depth, feet	Sample Type	Sample Number	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0					Concrete		Concrete with rebar.		
						SM		Brown gravelly SAND (moist).		
						GP-GC		Pale tan clayey sandy GRAVEL (dry).		
	5					CL-CH		Orange/red micaceous CLAY, medium plasticity.		
	10									
	15									
	20					CL		Reddish brown micaceous CLAY, medium to low plasticity, low moisture.		
	25					CL		Tan/brown micaceous CLAY, medium moisture content.		
	30									
	35					CL-CH		Yellowish tan micaceous CLAY, medium plasticity, moist.		
	40							6/23/11 ▼		
	45					SC		Yellowish tan sandy CLAY (very hard 45'-48'), wet at 50 feet.		
	50									
	55							Bottom of Boring at 55 feet bgs		
	60									

Figure

P:\Projects\2000-2010\2010\ER10-051 to ER10-140\ER10-125.02_Merchants Metals GWMW-1.bgs [Basic Well Log.tpl]

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 4121

1. WELL CONTRACTOR:
NICHOLAS HAYES
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) MW-1

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 06/21/11 - 06/22/11

4. WELL LOCATION:
165 FANJOY ROAD 28625
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: STATESVILLE COUNTY IREDELL
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___° ___' ___" DMS OR ___ DD
LONGITUDE ___° ___' ___" DMS OR ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
MERCHANT METALS N/A
Facility Name Facility ID# (if applicable)
165 FANJOY ROAD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
MERCHANT METALS
Contact Name
165 FANJOY ROAD
Mailing Address
STATESVILLE NC 28625
City or Town State Zip Code
( ) ___
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 55.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: 39.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 0.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top ___ Bottom ___ Top ___ Bottom ___
Top ___ Bottom ___ Top ___ Bottom ___
Top ___ Bottom ___ Top ___ Bottom ___

7. CASING:

Depth	Diameter	Thickness/ Weight	Material
Top 0.0 Bottom 45.0 Ft.	2 INCH	SCH 40	PVC
Top ___ Bottom ___ Ft.			
Top ___ Bottom ___ Ft.			

8. GROUT:

Depth	Material	Method
Top 0.0 Bottom 41.0 Ft.	PORTLAND BENTONITE	SLURRY
Top ___ Bottom ___ Ft.		
Top ___ Bottom ___ Ft.		

9. SCREEN:

Depth	Diameter	Slot Size	Material
Top 45.0 Bottom 55.0 Ft.	2.0 in.	.010 in.	PVC
Top ___ Bottom ___ Ft.	___ in.	___ in.	
Top ___ Bottom ___ Ft.	___ in.	___ in.	

10. SAND/GRAVEL PACK:

Depth	Size	Material
Top 43.0 Bottom 55.0 Ft.	20-40	FINE SILICA SAND
Top ___ Bottom ___ Ft.		
Top ___ Bottom ___ Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	2.0	CONCRETE/GRAVEL
2.0	5.0	WHITE SAND
5.0	45.0	BROWN SILTY CLAY
45.0	48.0	HARD CLAY
48.0	55.0	BROWN SILTY SAND

12. REMARKS:
BENTONITE SEAL FROM 41.0 TO 43.0 FEET

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 06/24/11

NICHOLAS HAYES
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

Project: Merchants Metals
Project Location: Statesville, Iredell County, North Carolina
Project Number: ER10-125.02

Log of Boring MW-2

Sheet 1 of 1

Date(s) Drilled **June 22, 2011**	Logged By **Brett Miller**	Checked By **MJB**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **5.2 inch**	Total Depth of Borehole **50 feet bgs**
Drill Rig Type **Drillmax 2400**	Drilling Contractor **Geologic Exploration, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **37.86 feet measured on 6/23/11**	Sampling Method(s) **None**	Hammer Data
Borehole Backfill	Location **Northwest of former Galvanizing Building**	

Elevation, feet	Depth, feet	Sample Type	Sample Number	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0					SM CL		Black to grey gravelly SAND. Reddish orange micaceous CLAY, low moisture, low plasticity.		
	5									
	10									
	15					CL		Yellowish/dark tan micaceous CLAY (dry).		
	20									
	25					CL		Brown micaceous CLAY.		
	30									
	35					CL CL		Brown gravelly CLAY. Brown micaceous CLAY, wet at 42', tight at 45'-46'. 6/23/11 ▼		
	40									
	45					SC-CL		Brown sandy CLAY, easier drilling than previous layer (wet).		
	50							Bottom of Boring at 50 feet bgs		
	55									

P:\Projects\2000-2010\2010\ER10-051 to ER10-140\ER10-125.02_Merchants Metals GWMW-2.bgs [Basic Well Log.tpl]

Figure

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 4121

1. WELL CONTRACTOR:
NICHOLAS HAYES
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) MW-2

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 06/22/11

4. WELL LOCATION:
165 FANJOY ROAD 28625
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: STATESVILLE COUNTY IREDELL
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'_____" DMS **OR** _____ DD
LONGITUDE ___°___'_____" DMS **OR** _____ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
MERCHANT METALS — N/A
Facility Name — Facility ID# (if applicable)
165 FANJOY ROAD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
MERCHANT METALS
Contact Name
165 FANJOY ROAD
Mailing Address
STATESVILLE NC 28625
City or Town State Zip Code
(_____) _____
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 50.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: 39.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 0.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top_____ Bottom_____ Top_____ Bottom_____
Top_____ Bottom_____ Top_____ Bottom_____
Top_____ Bottom_____ Top_____ Bottom_____

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 40.0	Ft.	2 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 34.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 40.0	Bottom 50.0	Ft.	2.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 38.0	Bottom 50.0	Ft.	20-40	FINE SILICA SAND
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	5.0	RED CLAY
5.0	12.0	RED SILTY CLAY
12.0	24.0	RED/YELLOW SILTY CLAY
24.0	50.0	BROWN SANDY SILT

12. REMARKS:
BENTONITE SEAL FROM 34.0 TO 38.0 FEET

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — 06/24/11 DATE

NICHOLAS HAYES
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

Project: Merchants Metals
Project Location: Statesville, Iredell County, North Carolina
Project Number: ER10-125.02

Log of Boring MW-3

Sheet 1 of 1

Date(s) Drilled **June 22, 2011**	Logged By **Brett Miller**	Checked By **MJB**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **5.2 inch**	Total Depth of Borehole **50 feet bgs**
Drill Rig Type **Drillmax 2400**	Drilling Contractor **Geologic Exploration, Inc.**	Approximate Surface Elevation
Groundwater Level and Date Measured **38.2 feet measured on 6/23/11**	Sampling Method(s) **None**	Hammer Data
Borehole Backfill	Location **East of former Galvanizing Building**	

Elevation, feet	Depth, feet	Sample Type	Sample Number	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0					Asphalt GM CL		Asphalt Dark grey sandy GRAVEL. Reddish orange micaceous CLAY (dry).		
	5									
	10									
	15									
	20									
	25					CL		Yellowish tan micaceous CLAY, dry, low plasticity.		
	30									
						CL		Yellowish tan gravelly CLAY.		
	35					CL		Brown/tan micaceous CLAY, wet at 40', tight at 42'-43'.		
	40							6/23/11 ▼		
	45					SC-CL		Brown sandy CLAY, easier drilling than previous layer (wet).		
	50							Bottom of Boring at 50 feet bgs		
	55									

Figure

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NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 4121

1. WELL CONTRACTOR:
NICHOLAS HAYES
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) MW-3

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)
DATE DRILLED 06/22/11

4. WELL LOCATION:
165 FANJOY ROAD 28625
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: STATESVILLE COUNTY IREDELL
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ° ' " DMS **OR** DD
LONGITUDE ° ' " DMS **OR** DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
MERCHANT METALS N/A
Facility Name Facility ID# (if applicable)
165 FANJOY ROAD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
MERCHANT METALS
Contact Name
165 FANJOY ROAD
Mailing Address
STATESVILLE NC 28625
City or Town State Zip Code
( )
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 50.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: 38.0 FT.
(Use "+" If Above Top of Casing)

d. **TOP OF CASING IS** 0.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST** N/A
f. **DISINFECTION: Type** N/A **Amount** N/A
g. **WATER ZONES** (depth):
Top Bottom Top Bottom
Top Bottom Top Bottom
Top Bottom Top Bottom

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 40.0	Ft.	2 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 34.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 40.0	Bottom 50.0	Ft.	2.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 38.0	Bottom 50.0	Ft.	20-40	FINE SILICA SAND
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	ASPHALT/GRAVEL
1.0	5.0	RED CLAY
5.0	14.0	RED SILTY CLAY
14.0	17.0	RED/YELLOW SILTY CLAY
17.0	43.0	BROWN CLAYEY SILT
43.0	50.0	BROWN SILTY SAND

12. REMARKS:
BENTONITE SEAL FROM 34.0 TO 38.0 FEET

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — 06/24/11 DATE

NICHOLAS HAYES
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

APPENDIX 3

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
MERCHANTS METALS
STATESVILLE, IREDELL COUNTY, NORTH CAROLINA
ESI PROJECT NO. ER10-125.02

WELL NO.	DATE INSTALLED	TOTAL DEPTH (feet bgs)	SCREEN INTERVAL DEPTH (feet bgs)	DATE WATER LEVEL MEASURED	TOC ELEV. (feet)	DEPTH TO GROUNDWATER (feet btoc)	GROUNDWATER ELEVATION
MW-1	6/21/2011	55	45-55	6/23/2011	100.00	39.04	60.96
MW-2	6/22/2011	50	40-50	6/23/2011	98.13	37.86	60.27
MW-3	6/22/2011	50	40-50	6/23/2011	99.90	38.20	61.70

Notes:
1) MW-1 was used as an assumed datum of 100.00.
2) bgs = below ground surface.
3) TOC = top of casing.
4) btoc = below top of casing.

TABLE 2

SUMMARY OF SEDIMENT ANALYTICAL DATA

MERCHANTS METALS

STATESVILLE, IREDELL COUNTY, NORTH CAROLINA

ESI PROJECT NO. ER10-125.02

Boring No.	Date	Zinc	Lead	Cadmium
SED-1 (Down Stream)	6/23/2011	96.5	4.17	<0.0209
SED-1 (DUP)	6/23/2011	40.5	1.85	<0.0204
SED-2	6/23/2011	1430	13.6	0.261
SED-2 (DUP)	6/23/2011	1280	11.2	<0.0361
P-1 (SED)	6/23/2011	4760	19.8	4.53
Screening Value	----	124	30.2	1
Effects Value	----	124	30.2	0.676

Notes:

1) All concentrations expressed in milligram per kilogram (mg/Kg).

2) Regulatory Values are from EPA Region 4 Waste Management Division Sediment Screening Values for Hazardous Waste Sites.

3) DUP = Duplicate sample.

4) Highlighted concentrations exceed the Screeing and Effects Values.

TABLE 3

SUMMARY OF SURFACE WATER ANALYTICAL DATA

MERCHANTS METALS

STATESVILLE, IREDELL COUNTY, NORTH CAROLINA

ESI PROJECT NO. ER10-125.02

Boring No.	Date	Zinc	Lead	Cadmium
SW-1 (Down Stream)	6/23/2011	152	<0.64	<0.278
SW-2	6/23/2011	413	<0.64	<0.278
P-1 (Spring)	6/23/2011	2280	<5	<5
SW STANDARD	---	50	25	2

Notes:

1) All concentrations expressed in micrograms per liter (ug/L).
2) SW Standard = 15A NCAC 2B Fresh Water Quality Standards.
3) Highlighted Concentration Exceeds the Surface Water Standard.

TABLE 4

SUMMARY OF GROUNDWATER ANALYTICAL DATA

MERCHANTS METALS

STATESVILLE, IREDELL COUNTY, NORTH CAROLINA

ESI PROJECT NO. ER10-125.02

Boring No.	Date	Zinc	Lead	Cadmium
MW-1	6/23/2011	4390	<0.64	2.6J
MW-1 (Dup)	6/23/2011	4340	<0.64	2.8J
MW-2	6/23/2011	7.39J	<0.64	<0.278
MW-3	6/23/2011	14.3J	<0.64	<0.278
NC 2L	----	1000	15	2

Notes:

1) All concentrations expressed in micrograms per liter (ug/L).
2) NC 2L Standard = 15A NCAC 02L .0202 Groundwater Quality Standards.
3) Highlighted Concentration Exceeds the NC 2L Standard.
4) DUP = Duplicate sample.
5) J-flag = Concentration detected between the MDL and LCL.

TABLE 5
SUMMARY OF QA/QC ANALYTICAL DATA
MERCHANTS METALS
STATESVILLE, IREDELL COUNTY, NORTH CAROLINA
ESI PROJECT NO. ER10-125.02

Boring No.	Date	Zinc	Lead	Cadmium
EB-1	6/22/2011	16.5J	<0.64	<0.278
EB-2	6/23/2011	5.59J	<0.64	<0.278
NC 2L	----	1000	15	2

Notes:
1) All concentrations expressed in micrograms per liter (ug/L).
2) NC 2L Standard = 15A NCAC 02L .0202 Groundwater Quality Standards.
3) EB = Equipment Blank water.

APPENDIX 4

GROUNDWATER SAMPLING LOG

SITE NAME: **Merchants Metals**	SITE LOCATION: **Statesville, Iredell County, NC**	
WELL NO: **MW-1**	SAMPLE ID: **MW-1**	DATE: **6/23/11**

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 45 feet to 55 feet	STATIC DEPTH TO WATER (feet): 39.04	PURGE PUMP TYPE OR BAILER: Sub.

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (55 feet – 39.04 feet) X 0.16 gallons/foot = 2.79
gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):±41	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ±41	PURGING INITIATED AT:14:37	PURGING ENDED AT:15:15	TOTAL VOLUME PURGED (gallons):9

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or µS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1451	3	3	0.21	39.04	5.12	22.29	3608	1.91	74.0	Sli. cloudy	22.5
1503	3	6	0.25		5.14	22.24	3340	1.08	26.3	clear	53.5
1515	3	9	0.25		5.16	22.30	3369	1.86	12.7	clear	67.8

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

NOTES: STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation; optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: **Merchants Metals**	SITE LOCATION: **Statesville, Iredell County, NC**	
WELL NO: **MW-2**	SAMPLE ID: **MW-2**	DATE: **6/23/11**

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 37.86	PURGE PUMP TYPE OR BAILER: Sub.

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (50 feet – 37.86 feet) X 0.16 gallons/foot = 1.94 gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):±41	FINAL PUMP OR TUBING DEPTH IN WELL (feet):±41	PURGING INITIATED AT:16:43	PURGING ENDED AT:16:57	TOTAL VOLUME PURGED (gallons):4

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or µS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1650	2	2	0.28	39.67	5.49	19.85	157	4.86	22.8	clear	39.0
1657	2	4	0.28	39.89	5.47	19.92	156	4.82	13.2	clear	39.5

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

NOTES: STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation; optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

GROUNDWATER SAMPLING LOG

SITE NAME: **Merchants Metals**	SITE LOCATION: **Statesville, Iredell County, NC**	
WELL NO: **MW-3**	SAMPLE ID: **MW-3**	DATE: **6/23/11**

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/8	WELL SCREEN INTERVAL DEPTH: 40 feet to 50 feet	STATIC DEPTH TO WATER (feet): 37.86	PURGE PUMP TYPE OR BAILER: Sub.

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (50 feet – 38.20 feet) X 0.16 gallons/foot = 1.89 gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):±42	FINAL PUMP OR TUBING DEPTH IN WELL (feet):±42	PURGING INITIATED AT:17:25	PURGING ENDED AT:17:46	TOTAL VOLUME PURGED (gallons):6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µmhos/cm or µS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1730	2	2	0.40	38.50	4.98	20.21	141	2.53	21.8	clear	23.3
1738	2	4	0.20	38.48	4.99	20.29	140	2.51	36.3	clear	28.7
1746	2	6	0.20	38.49	4.98	20.22	139	2.49	12.3	clear	29.3

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

NOTES: STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation; optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

APPENDIX 5

SGS

Laboratory Report of Analysis

To: Mike Burns
Environmental Services, Inc.
524 S. New Hope Road
Raleigh, NC 27610

Report Number: **31101651**

Client Project: **MM1**

Dear Mike Burns,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Michael D. Page at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Michael D. Page — Date
Project Manager
michael.page@sgs.com

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Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < LOD)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Amount detected is between the Method Detection Limit and the Lower Calibration Limit
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range
M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
P-1 (GW)	31101651001	06/23/2011 10:25	06/25/2011 10:00	Water
P-1 (SO)	31101651002	06/23/2011 10:25	06/25/2011 10:00	Soil-Solid as dr

SGS

Results of P-1 (GW)

Client Sample ID: **P-1 (GW)**
Client Project ID: **MM1**
Lab Sample ID: 31101651001-A
Lab Project ID: 31101651

Collection Date: 06/23/2011 10:25
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6010C

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**2.28**		0.0226	0.200	mg/L	10	06/30/2011 16:12

Batch Information

Analytical Batch: **MIP1149**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 16:12**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

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Results of **P-1 (GW)**

Client Sample ID: **P-1 (GW)**
Client Project ID: **MM1**
Lab Sample ID: 31101651001-A
Lab Project ID: 31101651

Collection Date: 06/23/2011 10:25
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:20
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:20

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:20**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/01/2011

N.C. Certification # 481

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Results of P-1 (SO)

Client Sample ID: **P-1 (SO)**
Client Project ID: **MM1**
Lab Sample ID: 31101651002-A
Lab Project ID: 31101651

Collection Date: 06/23/2011 10:25
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 18

Results by SW-846 6010C

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**4760**		53.5	95.5	mg/kg	10	06/29/2011 12:46

Batch Information

Analytical Batch: **MIP1147**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 12:46**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.58 g**
Prep Extract Vol: **50 mL**

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Results of **P-1 (SO)**

Client Sample ID: **P-1 (SO)**
Client Project ID: **MM1**
Lab Sample ID: 31101651002-A
Lab Project ID: 31101651

Collection Date: 06/23/2011 10:25
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 18

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Cadmium	**4.53**		0.0850	0.477	mg/kg	10	06/29/2011 17:29
Lead	**19.8**		0.0625	0.477	mg/kg	10	06/29/2011 17:29

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 17:29**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.58 g**
Prep Extract Vol: **50 mL**

Print Date: 07/01/2011

N.C. Certification # 481

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio

www.us.sgs.com

098535

(1)
CLIENT: ESI
CONTACT: Mike Burns PHONE NO:(719) 2121760
PROJECT: MM1 SITE/PWSID#:
REPORTS TO: MBurns@esinc.cc
FAX NO.:( )
INVOICE TO: QUOTE #:
P.O. NUMBER:

SGS Reference: 3110165 1 PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis Required (3) Cd, Pb, Zn	REMARKS
	P-1	6/23/11	1025	GW	1	G		X	
	P-1	↓	1025	SO	1	G		X	

(5)

Collected/Relinquished By:(1) Bre-Ann Ryzewski	Date 6-24-11	Time 2:45	Received By:
Relinquished By: (2)	Date 6/25/11	Time 10:00	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 2.0
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **ESI** Work Order No.: **31101651**

1. _X_ Shipped
   ___ Hand Delivered

   Notes:

2. _X_ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms

3. ___ Custody Tape on Container
   _X_ No Custody Tape

4. _X_ Samples Intact
   ___ Samples Broken / Leaking

5. _X_ Chilled on Receipt Actual Temp.(s) in °C: 2
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications

6. _X_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

7. ___ Chlorine absent
   _X_ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)

8. _X_ Received Within Holding Time
   ___ Not Received Within Holding Time

9. _X_ No Discrepancies Noted
   ___ Discrepancies Noted

10. ___ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Comments:

Inspected and Logged in by: TP
Date: Mon-6/27/11 00:00

SGS

Laboratory Report of Analysis

To: Mike Burns
Environmental Services, Inc.
524 S. New Hope Road
Raleigh, NC 27610

Report Number: **31101652**

Client Project: **Merchant Metals**

Dear Mike Burns,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Michael D. Page at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Michael D. Page — Date
Project Manager
michael.page@sgs.com

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Laboratory Qualifiers

Report Definitions

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LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
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MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

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J	Amount detected is between the Method Detection Limit and the Lower Calibration Limit
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E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range
M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
Dev-1	31101652001	06/21/2011 12:45	06/25/2011 10:00	Water
EB-1	31101652002	06/22/2011 10:55	06/25/2011 10:00	Water
SED-1	31101652003	06/23/2011 08:47	06/25/2011 10:00	Soil-Solid as dr
SED-1 Dup	31101652004	06/23/2011 08:48	06/25/2011 10:00	Soil-Solid as dr
SED-2	31101652005	06/23/2011 10:38	06/25/2011 10:00	Soil-Solid as dr
SED-2 Dup	31101652006	06/23/2011 10:39	06/25/2011 10:00	Soil-Solid as dr
SW-1	31101652007	06/23/2011 08:43	06/25/2011 10:00	Water
SW-2	31101652008	06/23/2011 10:45	06/25/2011 10:00	Water
DR-2	31101652009	06/23/2011 13:32	06/25/2011 10:00	Soil-Solid as dr
DR-1	31101652010	06/23/2011 13:40	06/25/2011 10:00	Water
EB-2	31101652011	06/23/2011 15:37	06/25/2011 10:00	Water
MW-1	31101652012	06/23/2011 15:16	06/25/2011 10:00	Water
Dup	31101652013	06/23/2011 00:00	06/25/2011 10:00	Water
MW-2	31101652014	06/23/2011 16:58	06/25/2011 10:00	Water
MW-3	31101652015	06/23/2011 17:47	06/25/2011 10:00	Water

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Results of **Dev-1**

Client Sample ID: **Dev-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652001-A
Lab Project ID: 31101652

Collection Date: 06/21/2011 12:45
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**8.14**		0.0226	0.200	mg/L	10	07/6/2011 14:51

Batch Information

Analytical Batch: **MIP1153**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **07/06/2011 14:51**

Prep Batch: **MXX1340**
Prep Method: **SW-846 3010A**
Prep Date/Time: **07/01/2011 08:37**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

SGS

Results of **Dev-1**

Client Sample ID: **Dev-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652001-A
Lab Project ID: 31101652

Collection Date: 06/21/2011 12:45
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	**0.00480**	J	0.000640	0.00500	mg/L	10	07/6/2011 16:49
Cadmium	**0.00150**	J	0.000278	0.00500	mg/L	10	07/6/2011 16:49

Batch Information

Analytical Batch: **MMS1051**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **07/06/2011 16:49**

Prep Batch: **MXX1340**
Prep Method: **SW-846 3010A**
Prep Date/Time: **07/01/2011 08:37**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

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Results of EB-1

Client Sample ID: **EB-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652002-A
Lab Project ID: 31101652

Collection Date: 06/22/2011 10:55
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6010C

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**0.0165**	J	0.00226	0.0200	mg/L	1	06/30/2011 10:54

Batch Information

Analytical Batch: **MIP1148**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 10:54**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

SGS

Results of **EB-1**

Client Sample ID: **EB-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652002-A
Lab Project ID: 31101652

Collection Date: 06/22/2011 10:55
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:02
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:02

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:02**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

N.C. Certification # 481

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Results of **SED-1**

Client Sample ID: **SED-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652003-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 08:47
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 77

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**96.5**		1.32	2.35	mg/kg	1	06/28/2011 18:17

Batch Information

Analytical Batch: **MIP1146**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/28/2011 18:17**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.55 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

N.C. Certification # 481

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Results of **SED-1**

Client Sample ID: **SED-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652003-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 08:47
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 77

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Cadmium	ND	U	0.0209	0.117	mg/kg	10	06/29/2011 17:32
Lead	**4.17**		0.0154	0.117	mg/kg	10	06/29/2011 17:32

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 17:32**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.55 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

N.C. Certification # 481

SGS

Results of **SED-1 Dup**

Client Sample ID: **SED-1 Dup**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652004-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 08:48
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 77

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**40.5**		1.28	2.29	mg/kg	1	06/28/2011 18:23

Batch Information

Analytical Batch: **MIP1146**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/28/2011 18:23**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.57 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of SED-1 Dup

Client Sample ID: **SED-1 Dup**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652004-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 08:48
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 77

Results by SW-846 6020A

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Cadmium	ND	U	0.0204	0.115	mg/kg	10	06/29/2011 17:35
Lead	**1.85**		0.0150	0.115	mg/kg	10	06/29/2011 17:35

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 17:35**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.57 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **SED-2**

Client Sample ID: **SED-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652005-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 10:38
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 50

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**1430**		20.9	37.3	mg/kg	10	06/29/2011 12:51

Batch Information

Analytical Batch: **MIP1147**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 12:51**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.54 g**
Prep Extract Vol: **50 mL**

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Results of **SED-2**

Client Sample ID: **SED-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652005-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 10:38
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 50

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Cadmium	**0.261**		0.0332	0.187	mg/kg	10	06/29/2011 17:38
Lead	**13.6**		0.0244	0.187	mg/kg	10	06/29/2011 17:38

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 17:38**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.54 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of SED-2 Dup

Client Sample ID: **SED-2 Dup**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652006-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 10:39
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 44

Results by SW-846 6010C

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**1280**		22.7	40.6	mg/kg	10	06/29/2011 12:55

Batch Information

Analytical Batch: **MIP1147**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 12:55**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.56 g**
Prep Extract Vol: **50 mL**

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Results of **SED-2 Dup**

Client Sample ID: **SED-2 Dup**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652006-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 10:39
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 44

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Cadmium	ND	U	0.0361	0.203	mg/kg	10	06/30/2011 14:27
Lead	**11.2**		0.0266	0.203	mg/kg	10	06/29/2011 17:46

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 17:46**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.56 g**
Prep Extract Vol: **50 mL**

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 14:27**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.56 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **SW-1**

Client Sample ID: **SW-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652007-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 08:43
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**0.152**		0.00226	0.0200	mg/L	1	06/30/2011 10:50

Batch Information

Analytical Batch: **MIP1148**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 10:50**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **SW-1**

Client Sample ID: **SW-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652007-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 08:43
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:00
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:00

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:00**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **SW-2**

Client Sample ID: **SW-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652008-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 10:45
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**0.413**		0.00226	0.0200	mg/L	1	06/30/2011 10:57

Batch Information

Analytical Batch: **MIP1148**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 10:57**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **SW-2**

Client Sample ID: **SW-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652008-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 10:45
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:05
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:05

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:05**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

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Results of **DR-2**

Client Sample ID: **DR-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652009-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 13:32
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 73

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**305**		15.1	26.9	mg/kg	10	06/29/2011 12:59

Batch Information

Analytical Batch: **MIP1147**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 12:59**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.51 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of DR-2

Client Sample ID: **DR-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652009-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 13:32
Received Date: 06/25/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 73

Results by SW-846 6020A

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Cadmium	ND	U	0.0239	0.134	mg/kg	10	06/30/2011 14:29
Lead	**15.2**		0.0176	0.134	mg/kg	10	06/29/2011 17:49

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 17:49**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.51 g**
Prep Extract Vol: **50 mL**

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 14:29**

Prep Batch: **MXX1334**
Prep Method: **SW-846 3050B**
Prep Date/Time: **06/28/2011 09:29**
Prep Initial Wt./Vol.: **.51 g**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **DR-1**

Client Sample ID: **DR-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652010-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 13:40
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**1.78**		0.0226	0.200	mg/L	10	06/30/2011 15:53

Batch Information

Analytical Batch: **MIP1149**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:53**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of DR-1

Client Sample ID: **DR-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652010-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 13:40
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6020A

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	**0.0137**		0.000640	0.00500	mg/L	10	06/30/2011 15:07
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:07

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:07**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of EB-2

Client Sample ID: **EB-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652011-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 15:37
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6010C

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**0.00559**	J	0.00226	0.0200	mg/L	1	06/30/2011 10:40

Batch Information

Analytical Batch: **MIP1148**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 10:40**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of EB-2

Client Sample ID: **EB-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652011-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 15:37
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6020A

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/29/2011 18:09
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 14:47

Batch Information

Analytical Batch: **MMS1047**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/29/2011 18:09**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 14:47**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of MW-1

Client Sample ID: **MW-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652012-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 15:16
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6010C

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**4.39**		0.0226	0.200	mg/L	10	06/30/2011 15:59

Batch Information

Analytical Batch: **MIP1149**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:59**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of MW-1

Client Sample ID: **MW-1**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652012-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 15:16
Received Date: 06/25/2011 10:00
Matrix: Water

Results by SW-846 6020A

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:10
Cadmium	**0.00260**	J	0.000278	0.00500	mg/L	10	06/30/2011 15:10

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:10**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **Dup**

Client Sample ID: **Dup**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652013-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 00:00
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**4.34**		0.0226	0.200	mg/L	10	06/30/2011 16:06

Batch Information

Analytical Batch: **MIP1149**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 16:06**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **Dup**

Client Sample ID: **Dup**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652013-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 00:00
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:12
Cadmium	**0.00280**	J	0.000278	0.00500	mg/L	10	06/30/2011 15:12

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:12**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

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Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652014-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 16:58
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**0.00739**	J	0.00226	0.0200	mg/L	1	06/30/2011 11:18

Batch Information

Analytical Batch: **MIP1148**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 11:18**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652014-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 16:58
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:15
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:15

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:15**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652015-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 17:47
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6010C**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Zinc	**0.0143**	J	0.00226	0.0200	mg/L	1	06/30/2011 11:22

Batch Information

Analytical Batch: **MIP1148**
Analytical Method: **SW-846 6010C**
Instrument: **ICP1**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 11:22**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Merchant Metals**
Lab Sample ID: 31101652015-A
Lab Project ID: 31101652

Collection Date: 06/23/2011 17:47
Received Date: 06/25/2011 10:00
Matrix: Water

Results by **SW-846 6020A**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Lead	ND	U	0.000640	0.00500	mg/L	10	06/30/2011 15:17
Cadmium	ND	U	0.000278	0.00500	mg/L	10	06/30/2011 15:17

Batch Information

Analytical Batch: **MMS1048**
Analytical Method: **SW-846 6020A**
Instrument: **ICPMS2**
Analyst: **PSW**
Analytical Date/Time: **06/30/2011 15:17**

Prep Batch: **MXX1331**
Prep Method: **SM 3030-C**
Prep Date/Time: **06/25/2011 10:34**
Prep Initial Wt./Vol.: **50 mL**
Prep Extract Vol: **50 mL**

Print Date: 07/07/2011

N.C. Certification # 481

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio

www.us.sgs.com

103784

(1)

CLIENT: ENVIRONMENTAL SERVICES INC

CONTACT: MIKE BURNS PHONE NO:(919) 212-1760

PROJECT: Merchant Metals SITE/PWSID#:

REPORTS TO: MIKE BURNS FAX NO.:(919) 212-1707

INVOICE TO: MIKE BURNS QUOTE #:

P.O. NUMBER:

SGS Reference: 31101652 PAGE 1 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	Preservatives Used: HNO3 / DI H2O	Analysis Required (3): CD, Pb, Zn	REMARKS
01	DEV-1	6/21/11	12:45	GW	1	G	X		
02	EB-1	6/22/11	10:55	W	1	G	X		
03	SED-1	6/23/11	8:47	S	1	G	X		
04	SED-1 DUP		8:48	S	1	G	X		
05	SED-2		10:38	S	1	G	X		
06	SED-2 DUP		10:39	S	1	G	X		
07	SW-1		9:43	SW	1	G	X		
08	SW-2		10:45	SW	1	G	X		
09	DR-2		13:32	S	1	G	X		
10	DR-1		13:40	GW	1	G	X		

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
BRETT MILLER	6/24/11	11:30	
Relinquished By: (2)	Date	Time	Received By:
	6/25/11	10:00	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 2.0

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
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- Maryland
- New Jersey
- New York
- North Carolina
- Ohio

www.us.sgs.com

103785

(1)

CLIENT: Environmental Services Inc

CONTACT: Mike Burns PHONE NO:(919) 212-1760

PROJECT: MERCHANTS METALS SITE/PWSID#:

REPORTS TO: MIKE BURNS FAX NO.:(919) 212 1707

INVOICE TO: MIKE BURNS QUOTE #:

P.O. NUMBER:

SGS Reference: 31101652

PAGE 2 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	Analysis Required (3)	REMARKS
11	EB-2	6/23/11	15:37	W	1	G	X		
12	mw-1		15:16	GW	1	G	X		
13	DUP		—		1	C	X		
14	mw-2		16:58		1	G	X		
15	mw-3		17:47		1	G	X		
16									
17									

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
BRETT MILLER	6/24/11	11:30	
Relinquished By: (2)	Date	Time	Received By:
	6/25/11	10:00	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature°C: 2.0

Special Deliverable Requirements:

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **ESI** Work Order No.: **31101652**

1. [X] Shipped
   [ ] Hand Delivered
   Notes:

2. [X] COC Present on Receipt
   [ ] No COC
   [ ] Additional Transmittal Forms

3. [ ] Custody Tape on Container
   [X] No Custody Tape

4. [X] Samples Intact
   [ ] Samples Broken / Leaking

5. [X] Chilled on Receipt Actual Temp.(s) in °C: 2
   [ ] Ambient on Receipt
   [ ] Walk-in on Ice; Coming down to temp.
   [ ] Received Outside of Temperature Specifications

6. [X] Sufficient Sample Submitted
   [ ] Insufficient Sample Submitted

7. [ ] Chlorine absent
   [X] HNO3 < 2
   [ ] HCL < 2
   [ ] Additional Preservatives verified (see notes)
   EB-1, EB-2 unpreserved should be HNO3.

8. [ ] Received Within Holding Time
   [X] Not Received Within Holding Time
   DEV-1 received out of hold time.

9. [ ] No Discrepancies Noted
   [X] Discrepancies Noted

10. [ ] No Headspace present in VOC vials
    [ ] Headspace present in VOC vials >6mm

Comments:

Inspected and Logged in by: JJ
Date: Mon-6/27/11 00:00

APPENDIX 6

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Document Number

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORPORATION**

U.S. EPA ID Number: **N.C.0.0.0.0.9.4.2.1.4.4**

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

SHAMROCK ENVIRONMENTAL CORPORATION
519 PATTON AVE., GREENSBORO, NC 27406
(336)-375-1989

Facility's Phone:

U.S. EPA ID Number: **N.C.D.9.9.1.2.7.7.7.3.2**

HM	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval Codes
	1.					
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

Power Unit _____ Trailer # _____

Job #

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)		Month	Day	Year

9.1	9.2	9.3	9.4

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR'S/SHIPPER'S INITIAL COPY