




REMOVAL ASSESSMENT REPORT
M&H ZINC SITE
LaSALLE, LaSALLE COUNTY, ILLINOIS
TDD No.: S05-0808-001
STN JV Contract No. EP-S5-06-03


November 14, 2008

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 5 Emergency Response Branch
77 West Jackson Blvd.
Chicago, IL 60604

Prepared by:  Date: 11/14/08
Chad Gibson, START Project Manager

Reviewed by:  Date: 11/18/08
Richard Baldino, START QA Manager

Approved by:  Date: 11/19/08
Raghu Nagam, START Program Manager



STN Environmental, JV

125 South Wacker Drive, Suite 1180 • Chicago, IL 60606 • (312) 443-0550

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1.0 INTRODUCTION

Under Technical Direction Document (TDD) No. S05-0808-001, the U.S. Environmental Protection Agency (U.S. EPA) tasked STN Environmental JV (STN), the Superfund Technical Assessment and Response Team (START) contractor, to conduct a removal assessment of the M&H Zinc site in LaSalle, LaSalle County, Illinois. START was tasked to (1) prepare a health and safety plan and sampling plan, (2) investigate unknown chemicals in an old laboratory, (3) conduct potential asbestos containing material (ACM) sampling, (4) investigate unknown oil in sewer drains, (5) document on-site conditions with written logbook notes and photographs (Appendix A), (6) procure analytical services, (7) perform analytical data validation (Appendix B), and (8) prepare a Removal Assessment Report.

This Removal Assessment Report discusses the site background (Section 2.0), removal assessment activities (Section 3.0), analytical results (Section 4.0), and potential site related threats (Section 5.0). Section 6.0 provides a summary of the removal assessment.

2.0 SITE BACKGROUND

This section discusses the site description and history of operations.

2.1 SITE DESCRIPTION

The entire M&H Site, located in La Salle, LaSalle County, Illinois is approximately 160 acres inclusive of inactive primary zinc smelting operations and associated abandoned buildings, a rolling mill, and the active Carus Chemical Company (Carus) and its property (Appendix C, Figure 1). The M&H Site is bounded by the Little Vermilion River to the north and east and by private residences to the south and west. Tracts of farmland and a limestone quarry are located across the Little Vermilion River to the north and east of the site, respectively. The City of LaSalle obtains their drinking water from a cluster of four wells with the nearest municipal well situated approximately 0.75 miles south of the M& H Site. An abandoned sewer line runs across the property, which serves as a transport mechanism for surface water runoff directly into the Little Vermilion River. A wetland is located approximately 0.5 miles upstream from the M&H Site and the Illinois River is located approximately 1 mile downstream of the M&H Site.

The M&H Site began operations in 1858 when raw materials such as zinc ore and various grades of coal were transported to smelt zinc. A rolling mill was built on-site in 1866 to produce zinc sheets. This process included a furnace that used producer gas as fuel. Any sulfur dioxide generated was recovered and converted into sulfuric acid and stored in on-site tanks. The M&H Site also had an ammonium sulfate fertilizer plant which was operational for a few years during the early 1950s. Coal mining occurred at the M&H Site until 1937, where two mining shafts (one vertical, one horizontal) remain today. Zinc smelting ceased in 1961, while sulfuric acid manufacturing halted in 1968. From this time until 1978 when bankruptcy was declared, the facility only performed rolling mill operations. This 12 acre tract was purchased by Fred and Cynthia Carus in 1980 and became the LaSalle Rolling Mills.

The LaSalle Rolling Mills worked under contract with the United States Mint to generate metal blanks for pennies and operated until 2000 when bankruptcy was declared. In 2003, EPA conducted an emergency removal action at the LaSalle Rolling Mills to address cyanide contamination, old plating line waste, and various other chemicals and storage tanks that remained after the rolling mill closure. This removal action is complete. The Carus Chemical Company (Chemical Company) and the Carus Chemical Property are located to the south of the rolling mills. The chemical company has been operational since

1915 and mainly produces potassium permanganate.

The M&H Site has been divided into two operable units (OU), OU1 and OU2. As negotiated by a settlement order signed in September 2006, OU1 includes the Carus Chemical Company and property, the Little Vermilion River adjacent to the entire M&H Site, and a large slag and sinter waste pile, approximately 6 acres in area and 40 to 100 feet in depth. OU2, approximately 140 acres, is identified as the production area of the former zinc smelting and rolling processes and the immediate property surrounding this area. Specifically, OU2 includes the former rolling mill facility, approximately 150 associated former buildings and structures, a shallow slag and sinter pile which heterogeneously covers the former production area of the M&H Site, several abandoned and closed mine shafts, an undeveloped woodland, and surrounding residential areas.

The M&H Site was listed on the National Priorities List (NPL) on September 29, 2003. Two primary sources located on the property were used to score the site for the NPL. The first source is the six-acre waste pile located on the Carus Chemical Company property of the M&H Site (OU1).

The second source is a shallow waste pile, composed of sinter and slag heterogeneously deposited throughout the former smelter property, included within OU2. The contaminants discovered in the second source appear to be the result of former zinc smelter activities and ancillary operations as described above. Runoff from this shallow sinter and slag cover flows into the Little Vermilion River through natural drainage pathways and manmade conduits. In the central portion of OU2, west of the abandoned railroad, there is a conduit running from an abandoned pump house to the Little Vermilion River as well as drainage which enters an old abandoned and collapsed storm sewer line which runs east-west across the entire width of OU2.

During the November 1991 Comprehensive Environmental Response, Compensation, And Liability Act (CERCLA) screening site inspection, and the December 1993 CERCLA Integrated Assessment sampling, the IEPA collected several samples from the two sources. Five of the samples were taken from the sinter slag cover on OU2. The IEPA also observed a release to surface water during the 1993 screening which was subsequently substantiated by chemical analyses of sediment samples in the Little Vermilion River.

The preliminary results of the U.S. EPA 2007 Phase I RI show there is ubiquitous metal contamination across the entire site, primarily were arsenic, lead, cadmium, copper, mercury, and zinc in soils, debris

piles, building materials, surface water, and groundwater. There are also areas of high polychlorinated biphenyl (PCB) contamination in debris piles and surface and subsurface soils near Building 100, the rolling mill, and the furnaces. Trichloroethene contamination is also found in soils and groundwater in the vicinity of the rolling mill on OU2. Polyaromatic hydrocarbons are detected ubiquitously on OU2. Asbestos has been found in concentrations as high as 6.5 percent.

In August 2008, the U.S. EPA Remedial Branch asked for assistance from the U.S. EPA Emergency Response Branch (ERB) with the assessment of abandoned chemicals in a dilapidated laboratory and suspected ACM. On August 15, 2008 U.S.EPA On-Scene Coordinator (OSC) Theisen met U.S. EPA remedial project manager (RPM) Collier at the site to look at the abandoned chemicals and potential ACM. OSC Theisen observed that the laboratory with abandoned chemicals was in poor shape and posed a threat release if the building were to collapse. OSC Theisen notified the RPM that he would conduct a removal site assessment to address the abandoned chemicals and potential ACM.

3.0 REMOVAL ASSESSMENT ACTIVITIES

On August 26, 2008, U.S. EPA OSC Theisen and U.S. EPA RPM Collier met with START members Chad Gibson and Tracy Koach at the site to conduct assessment activities. Site assessment activities included documentation of the laboratory chemicals and potential ACM and collection of waste samples, and ACM samples. START subcontracted STAT Analysis Corporation to analyze samples.

The site assessment activities began with a tailgate safety briefing and a site walk through the site to identify potential ACM and abandoned laboratory chemicals. The laboratory building was overgrown with bushes and weeds. Prior to entry, a path was cut to make sure that all trip hazards were removed. The laboratory building was found to be dilapidated and not structurally sound. Upon entry into the laboratory it was noted that all the waste containers that were present during the August 15, 2008 visit had been removed from the building. The potential responsible party (PRP) representative had gathered all the containers and had them stored in drums at his facility. The PRP was directed by the OSC and RPM to properly dispose of the containers.

The only chemical substance that was found in the laboratory was a drum full of small packets of "M&H Peanuts". The label indicated that they consisted of zinc calceen. The OSC directed START to collect a sample of the zinc calceen and a composite sample from the material and debris on the floor. All samples were collected in Level C personal protection equipment (PPE) in accordance with the approved site specific health and safety plan. Sample MH-1 was collected from the zinc calceen packets. The material was a fine grey solid material. Sample MH-2 was collected from a 10-point composite of the dust and debris throughout the laboratory. All samples were collected using dedicated scoops and placed into a clean jar for laboratory analysis of total metals. These samples are summarized in Table 3-1.

A total of 4 areas were identified as containing potential ACM. These areas included the scale house, the ground behind building 1943, southeast side of the rolling mill, and the east side of the rolling mill. A total of nine samples from these areas were submitted to the laboratory for ACM analysis. All ACM samples were collected in Level C PPE. Samples MH-3 and MH-4 were collected from the scale house from pipe insulation. Samples MH-5, MH-6 and MH-7 were collected from materials on the ground behind building 1943. Samples MH-9 and MH-10 were collected off pipe insulation off the southeast side of the rolling mill. Sample MH-11 was collected from pipe insulation in a room off of the southeast side of the rolling mill. Sample MH-13 was collected from a pipe off the east side of the rolling mill. All

sample locations are described in more detail in Table 3-2 and in Appendix A Photographic Log. All ACM samples were analyzed by polarized light microscopy EPA Method 600/M4-82-020 to determine percentage asbestos.

During the collection of ACM samples behind building 1943, a half full 25-gallon drum was found. The drum contents were manufactured by Nalco and contained "Internal Treatment". Sample MH-8 was collected from the drum for pH analysis. In the room off the southeast side of the rolling mill was a stack of bags that contained white powder. The white powder was spilled over the ground and was easily aerosolized. Sample MH-12 was collected from the white powder for pH analysis.

All samples were placed on ice and hand delivered under chain of custody to STAT Analysis Corporation in Chicago, Illinois for analysis.

On October 17, 2008 START conducted a second removal assessment at the site. Prior to this assessment, the U.S. EPA Remedial Branch conducted subsurface soil investigation activities at the site. During these activities, a thick viscous material (oil) was observed in a 4 feet deep manhole located inside the rolling mill. The manhole was approximately 18 inches in diameter and lined with bricks. There were 2 pipes that fed the manhole; an approximate 8-inch diameter pipe extended to the north and an 4-inch diameter pipe extended to the west/southwest. The north line appeared to be covered with oil. It was unclear how far the oil extended down the line and no additional manholes could be accessed. The RPM requested further assistance from the U.S. EPA ERB to identify hazards related to the oily material in the manhole. On October 17, 2008 START, collected one sample of the oil. Sample MHOU2-SEWER was collected by attaching a clean 1-liter plastic sample container to a 5-foot long pole and lowering the container into the thick viscous material, and transferring to a clean jar. The sample was submitted for laboratory analysis for volatile organic compounds (VOC), total petroleum hydrocarbons (TPH), and polychlorinated biphenyls (PCB). The sample results are summarized in Table 3-3.

Table 3-1
Liquid and Solid Sample Results
MH Zinc.
LaSalle, Illinois
TDD# S05-0808-001

Location Summary	U.S. EPA RSL ^A	U.S. EPA SSL ^B	Zinc "Calceen" packets	Floor sweepings from laboratory	White material in building of SE corner of rolling mill	Drum behind Building "1943"
Sample ID			MH-1	MH-2	MH-8	MH-12
Metals (mg/kg)						
Arsenic (As)	0.39	0.4	96	58	NA	
Barium (Ba)	15,000	5,500	16	340		
Cadmium (Cd)	70	78	2000	740		
Chromium (Cr)	280	270	2.8	170		
Lead (Pb)	400	400 ^C	2300	16,000		
Mercury (Hg)	6.7	10	0.037	13		
Selenium (Se)	390	390	30	ND		
Silver (Ag)	390	390	36	13		
Zinc (Zn)	23,000	23,000	500,000	85,000		
TCLP (mg/L)^D	Action Level					
Lead (Pb)		5.0	5.0	48		
General Chemistry	Action Level					
pH	<2 or >12.5		6.3	6.6	7	9.3

Notes:

- mg/kg milligram per kilogram
- mg/L milligram per liter
- NA Not Analyzed
- Bolded** values exceed RSLs
- Italic* values exceed SSL

^A The Region 9 PRGs have been harmonized with similar risk-based screening levels used by Regions 3 and 6 into a single table: "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites (Sept 2008); Residential soil screening values are used.

^B Soil Screening Levels, based on most stringent of ingestion or inhalation for human health criteria

^C A screening level of 400/mg/kg has been set for lead based on the Revised Interim Soil Lead Guidance for RCRA Corrective Action Facilities (U.S. EPA 1994)

^D Toxicity Characteristic Leaching Procedure defines a characteristic waste under 40 CFR §261.24

**Table 3-2
Asbestos Sample Results
MH Zinc.
LaSalle, Illinois
TDD# S05-0808-001**

Location Summary	Pipe covering in Scale House	Pipe cover outside Scale House	White material on ground behind Building "1943"	Pipe covering (brown) on ground behind Building "1943"	Pipe covering (black) on ground behind Building "1943"	Pipe cover from ESE side of Rolling Mill	Pipe elbow cover on ESE side of Rolling mill	Pipe cover from room on ESE side of Rolling Mill	Pipe cover from East side of Rolling Mill
Sample ID	MH-3	MH-4	MH-5	MH-6	MH-7	MH-9	MH-10	MH-11	MH-13
Asbestos Componentenets (%)									
Chrysotile	ND	ND	15-20	10-15	10-15	10-15	10-15	10-15	10-15
Non-Asbestos Components (%)									
Glass	99-100	99-100	--	--	--	--	--	--	--
Binder	--	--	80-85	80-85	80-85	80-85	80-85	80-85	80-85

Notes:

ND Not Detected
% Percent

**Table 3-1
Manhole Sample Results
MH Zinc.
LaSalle, Illinois
TDD# S05-0808-001**

Location Summary	U.S. EPA RSL ^A	U.S. EPA TSCA ^B	Sewer drain inside Rolling Mill
Sample ID			MHOU2-SEWER
PCB (mg/kg)			
Aroclor 1016	3.9	1.0	ND
Aroclor 1221	0.17		ND
Aroclor 1232	0.17		ND
Aroclor 1242	0.22		ND
Aroclor 1248	0.22		ND
Aroclor 1254	0.22		ND
Aroclor 1260	0.22		4.2
Total Petroleum Hydrocarbons (mg/kg)			
TPH (GRO)			240
TPH (DRO)			190000
TPH (ERO)			590,000

Notes:

- DRO Diesel range organics
- ERO Extended range organics
- GRO Gasoline range organics
- mg/kg milligrams per kilogram
- ND Not detected above laboratory detection limits
- RSL Regional Screening Levels
- TPH Total petroleum hydrocarbons
- TSCA Toxic Substances Control Act
- Bolded** values exceed evaluation criteria

The Region 9 PRGs have been harmonized with similar risk-based screening levels used by Regions 3 and 6 into a single table: "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites (Sept 2008)

^A

^B

TSCA defines the waste as a bulk PCB remediation waste in the high occupancy area

4.0 ANALYTICAL RESULTS

This section summarizes the analytical results of the samples collected during all removal assessment activities. The laboratory analyzed nine potential ACM samples for total asbestos using EPA method 600/M4-82-020; two waste solids samples for metals using EPA methods 6010B and 7471A; one waste liquid sample for flashpoint using EPA method 1010; one waste solid sample for pH using EPA method 9045C; and one oil sample for VOCs using EPA Method 8260B, TPH using EPA Method 8015M, and PCBs using EPA Method 8082. All samples were submitted to STAT Analysis Corporation in Chicago, Illinois for analysis. Two samples (MH-1 and MH-2) were analyzed for Toxicity characteristic Leaching Procedure (TCLP) concentrations by method EPA 1311 after the total metal sample results were received. Appendix B provides the letter for the validated analytical results for the samples. The data validation report for the sample results from the site is presented in Appendix B.

4.1 SOLID AND LIQUID SAMPLE RESULTS

Solid sample results were evaluated and compared to U.S. *EPA Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites* (Sept 2008) and the U.S. *EPA Generic Site Screening Levels (SSL)* (July 1996). The results of the solid and liquid samples are summarized in Table 3-1. The sample results contained arsenic, cadmium, lead, and zinc at concentrations exceeding their respective RSL and SSLs. After the total metals sample results were received and reviewed, they were submitted for additional TCLP metals analysis. TCLP sample results were compared to The Federal criteria as presented in Title 40 of the *Code of Federal Regulations*, Part 261 (40 CFR 261) to determine if any of the samples contained TCLP metals at characteristic hazardous waste levels. Samples MH-1 and MH-2 contained TCLP lead concentrations of 5.0 and 48 milligrams per liter (mg/L), respectively. The results exceed the TCLP criteria for lead and are considered characteristic hazardous waste.

The pH of all solid and liquid samples ranged from 6.3 to 9.3 standard units and are considered neutral to alkaline.

4.2 ASBESTOS CONTAINING MATERIAL SAMPLE RESULTS

The results of the potential ACM samples are summarized in Table 3-2. Chrysotile was observed in 8 of the nine samples collected for asbestos ranging in concentration from 10 to 20%. The highest concentration was seen in the white material collected behind building 1943 (MH-5).

4.3 MANHOLE SAMPLE RESULTS

Sample MHO2-SEWER was collected from a manhole inside the rolling mill consisting of an oil, material. The analytical sample results are summarized in Table 3-3. No concentrations of VOCs were detected above the laboratory detection limits. TPH concentrations were detected for all organic ranges: Gasoline (GRO), Diesel (DRO), and Extended (ERO). Higher concentrations were seen in the DRO and ERO results at 190,000 and 590,000 mk/kg, respectively. This indicated that the material mostly consists of the carbon heavy oils.

PCB sample results were evaluated and compared to Toxic Substances Control Act (TSCA) regulatory limits in Title 40 of the *Code of Federal Regulations*, Part 761.61 (2007). The oil material could be considered a bulk PCB remediation waste or liquid waste within the TSCA regulations with limits of 1 and 2 mg/kg for total PCBs, respectively. Sample results contained Aroclor 1260 at a concentration of 4.2 mg/kg. The results exceed the TSCA regulatory limits.

5.0 POTENTIAL SITE-RELATED THREATS

The threats posed by the site were evaluated in accordance with 40 CFR, Section 300.415(b)(2), which lists factors to be considered when determining the appropriateness of a potential removal action at a site. Factors applicable to the M&H Zinc site are discussed below.

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

Analytical results showed that chrysotile asbestos was found in eight samples throughout materials at the site. Chrysotile is considered to be a human carcinogen by the International Agency for Research on Cancer (IARC) and by the U.S. Department of Health and Human Services. Asbestos exposure is associated with parenchymal asbestosis, asbestos-related pleural abnormalities, mesothelioma, and lung cancer, and it may be associated with cancer at some extra-thoracic sites. The ACM was friable; they were in a deteriorated form, dry, and crumbled at the touch. The ACM was found on outside exposed pipes or lying on the ground. ACM that contains more than just 1% asbestos and is friable, is considered to be Regulated Asbestos-Containing Material. Currently there are workers at the site and adjacent sites who can be exposed to the ACM. A large portion of the site is wooded and animals are seen on regular occasions.

Total and TCLP metals results from samples MH-1 and MH-2 exceeded regulatory criteria at the site. Sample analytical results indicated the presence of arsenic, cadmium, lead, and zinc above the RSL and SSL (see Table 3-1). TCLP lead sample results exceeded the regulatory criteria.

The area where these materials were found is in a dilapidated building and is not structurally sound. The building borders the adjacent Carus Chemical Company. If the building were to collapse, the workers at the Chemical Company would be exposed to concentrations of arsenic, cadmium, lead and zinc above regulatory criteria. Exposure to this dust can cause elevated levels of arsenic, cadmium, lead, and zinc in the blood. Exposure to arsenic can cause a discoloration of the skin and the appearance of small corns or warts. Cadmium damages the lungs, can cause kidney disease, and may irritate the digestive tract. Lead can damage the nervous system, kidneys, and reproductive system. The collapse of the building could cause a serious threat to all the workers in the area.

PCB contaminated oil was observed in a manhole in the rolling mill. Sample results of the oil indicated concentrations of PCBs above TSCA bulk remediation and liquid waste criteria. Two stained pipelines were observed extending north and south/southwest from the manhole. The discharge points of the

pipelines could not be determined at the time of the investigation and it is unknown if they leave the site. The integrity of the pipelines is unknown; therefore, it is not known if the oil material has leaked into the surrounding soils.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

The friable ACM was observed at several locations at the site out in the open and in poor condition. Any amount of high winds would cause friable ACM to leave the site into the local populations. The dilapidated laboratory with hazardous levels of metals contains several holes and is exposed to the weather. If rain entered the building, it would come in contact with the hazardous substances on the floor and migrate off site. The building is leaning onto the Carus Chemical Company property. Heavy rains and winds could cause the building to collapse onto the Carus Chemical Company property causing its workers to be exposed to hazardous levels of metals.

The availability of other appropriate federal or state response mechanisms to respond to the release;

The U.S. EPA Remedial Branch has requested the U.S. EPA Emergency Response Branch's assistance in addressing the immediate threats to human health and the environment at the site. The Remedial Branch is currently addressing the long term environmental concerns at the site.

6.0 SUMMARY

Based on the removal program removal assessment results, friable ACM is present throughout the site. ACM that contains more than just 1% asbestos and is friable is considered to be Regulated Asbestos-Containing Material.

EPA's removal program typically addresses friable asbestos when it is outside and can easily be exposed to nearby human populations. Levels of arsenic, cadmium, lead, and zinc were seen in materials at the site above the EPA RSL, SSL, and TCLP criteria. These materials are stored in an old laboratory bordering the Carus Chemical Company that is dilapidated and is not structurally sound. There exists a high possibility that if the building were to collapse that the workers would be exposed to hazardous chemicals.

The presence of toxicity characteristic hazardous wastes in exceedance of regulatory criteria, friable asbestos, and deteriorating conditions where hazardous wastes are stored at the site, pose actual and potential threat to human health and the environment and meets the criteria for a U.S. EPA removal action as listed in 40 CFR 300.415 (b)(2).

APPENDIX A
PHOTOGRAPHIC LOG

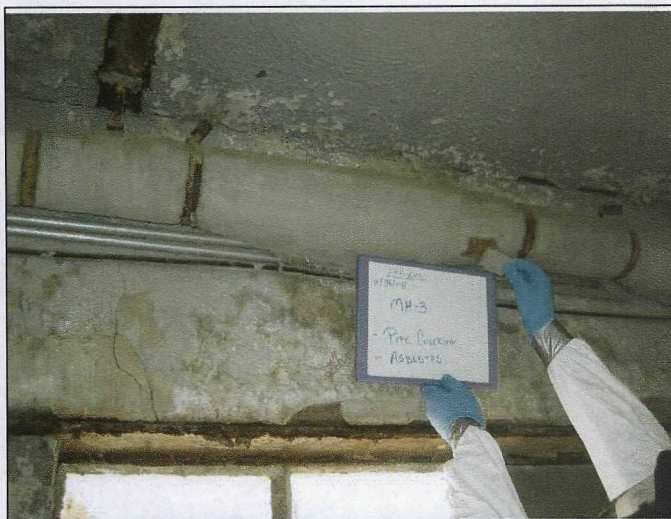


PHOTO 1

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Up

Photographer: T. Koach

Description: Sample MH-3, pipe insulation inside Scale House.



PHOTO 2

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Up

Photographer: T. Koach

Description: Sample MH-4, pipe covering outside Scale House.



PHOTO 3

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Down

Photographer: T. Koach

Description: Sample MH-5, white pipe insulation behind Building "1943"



PHOTO 4

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Down

Photographer: T. Koach

Description: Sample MH-6, brown insulation with paper behind Building "1943"

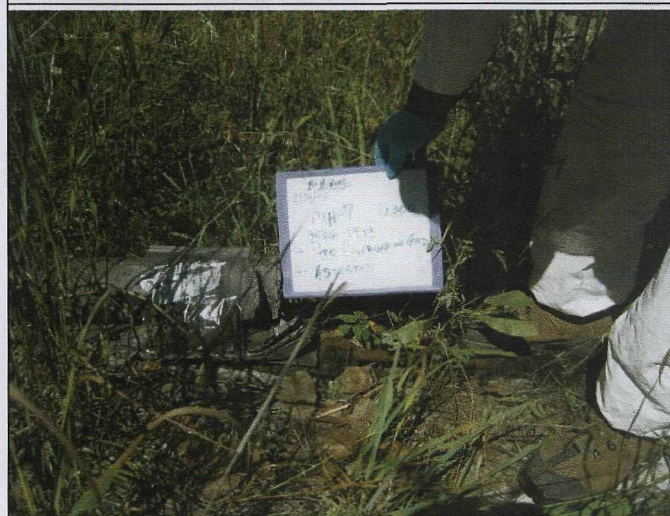


PHOTO 5

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Down

Photographer: T. Koach

Description: Sample MH-7, black paper material behind Building "1943"



PHOTO 6

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Up

Photographer: T. Koach

Description: Sample MH-9, pipe insulation on ESE side of Rolling Mill.

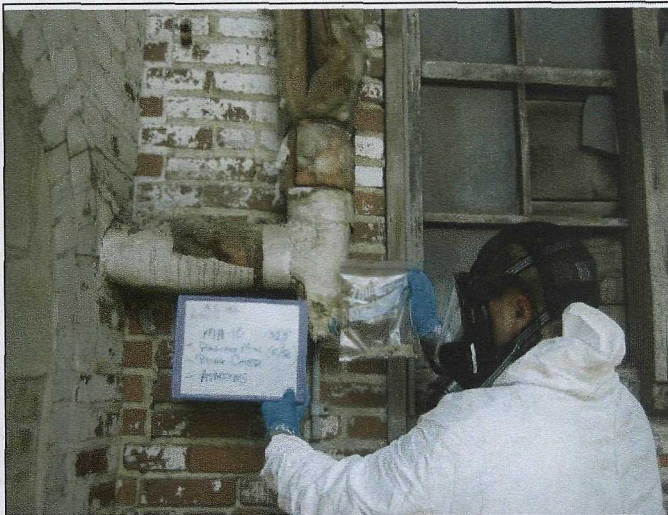


PHOTO 7

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: East

Photographer: T. Koach

Description: Sample MH-10, pipe insulation from an elbow on the ESE side of Rolling Mill.



PHOTO 8

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: North

Photographer: T. Koach

Description: Sample MH-11, pipe insulation in room on the ESE side of Rolling Mill.



PHOTO 9

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: West

Photographer: T. Koach

Description: Sample MH-13, pipe insulation on the east side of the Rolling Mill.

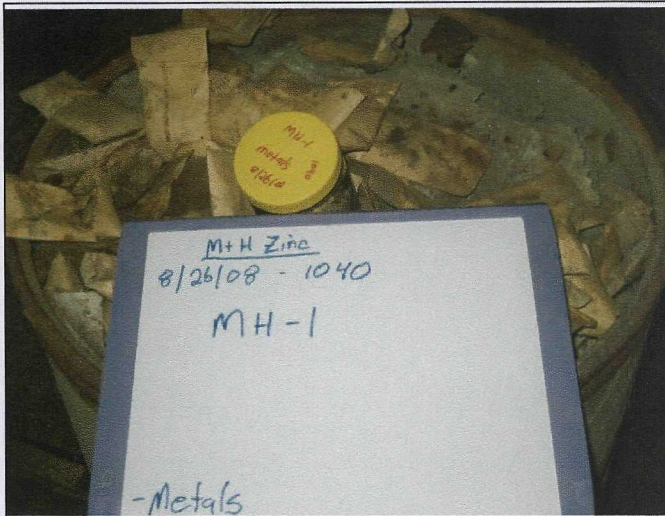


PHOTO 10

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Down

Photographer: T. Koach

Description: Sample MH-1, packets of "Zinc Calceen" in laboratory. Sampled for total metals analysis.

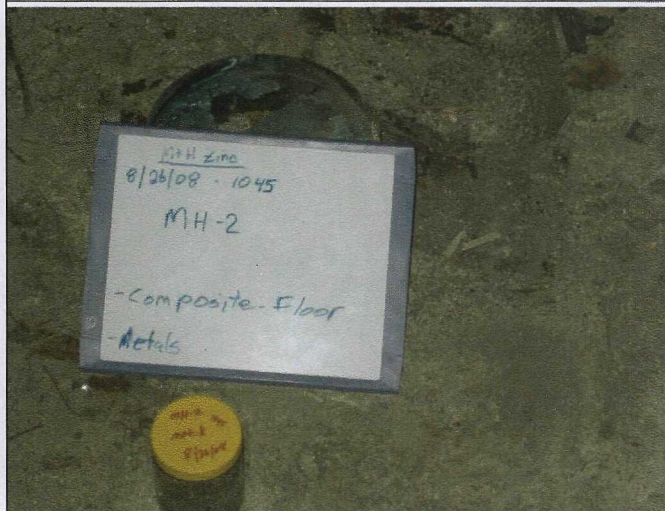


PHOTO 11

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Down

Photographer: T. Koach

Description: Sample MH-2, composite of floor sweeping and debris in laboratory. Sampled for total metals analysis.



PHOTO 12

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: South

Photographer: T. Koach

Description: Sample MH-8, liquid from drum labeled as "Internal Treatment". Sampled for flashpoint analysis.

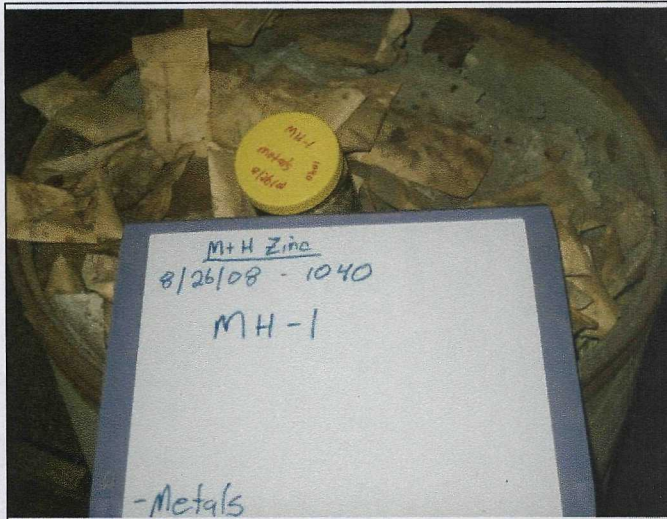


PHOTO 13

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 08/26/08

Direction: Down

Photographer: T. Koach

Description: Sample MH-12, from small room off southeast side of rolling mill. Sampled for pH analysis

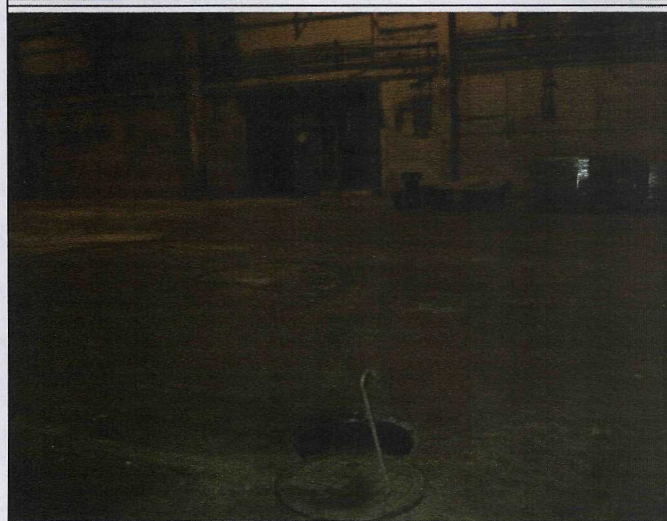


PHOTO 14

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 10/15/08

Direction: North

Photographer: T. Koach

Description: Location of manhole in the Rolling Mill.



PHOTO 15

Site Name: M&H Zinc

TDD#: S05-0808-001

Location: Lassalle, Illinois

Date: 10/15/08

Direction: Down

Photographer: T. Koach

Description: Oil material inside manhole; note oil on two pipes leading into manhole.

APPENDIX B
VALIDATED ANALYTICAL DATA PACKAGE



STN Environmental, JV

125 South Wacker Drive, Suite 1180 • Chicago, IL 60606 • (312) 443-0550 • (312) 443-0557

MEMORANDUM

Date: November 18, 2008

To: Chad Gibson, Project Manager, STN Environmental JV (STN)
Superfund Technical Assessment and Response Team (START) for region 5

Prepared by: Richard Baldino, Senior Chemist, STN START for Region 5

Subject: Data Validation for
M&H Zinc Site
LaSalle, Illinois
Analytical Technical Direction Document (TDD) No. S05-0808-002
Project TDD No. S05-0808-001

Laboratory: STAT Analysis
Work Order Nos. 08080926 and 08100732
Analyses of 4 Soil Samples for Total Metals, TCLP Metals, and pH. Analysis of 1
Sewer sample for Volatile Organic Compounds (VOCs), Polychlorinated Biphenyls
(PCBs), and Total Petroleum Hydrocarbons (TPH)

1.0 INTRODUCTION

The STN START for region 5 validated analytical data for four soil samples and one sewer sample. Samples were collected at the M&H Zinc Site located in LaSalle, IL on August 26th and October 17th, 2008. The samples were analyzed under Work Order numbers 08080926 and 08100732 by STAT Analysis using U.S. Environmental Protection Agency (U.S. EPA) SW-846 methods 1311, 6020, 7471A, 8015 (modified for TPH), 8082, 8260B, and 9045C (Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846). Two soil samples were analyzed Total Metals and TCLP lead. Four soil samples were analyzed for pH. One sewer sample was analyzed for PCBs, TPH, and VOCs.

Laboratory data were validated using guidelines set forth in the U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA540/R-99/008, October 1999), U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (540/R-94/013, February 1994), and applicable methodologies. The purpose of the chemical data quality evaluation process is to assess the usability of data for the project decision-making process.

Organic data validation consisted of a review of the following QC audits:

- Chain of custody and sample receipt forms review
- Sample preservation and holding time
- GC/MS Instrument performance check, Initial Calibration, and Continuing Calibration
- Blank results
- Surrogate recoveries
- Matrix spike and Matrix Spike Duplicate (MS/MSD) recovery results
- Laboratory Control Sample (LCS) recovery results
- Internal Standard area counts and retention times
- Target compound identification and quantitation

Inorganic data validation consisted of a review of the following QC audits:

- Chain of custody and sample receipt forms review
- Sample preservation and holding time
- Initial Calibration, and Continuing Calibration
- Blank results
- Laboratory Control Sample (LCS) recovery results
- Duplicate sample results
- Matrix spike and Matrix Spike Duplicate (MS/MSD) recovery results

Section 2.0 of this memorandum discusses the results of organic data validation. Section 3.0 of this memorandum discusses the results of inorganic data validation. Section 4.0 presents an overall assessment of the data. The attachment to this memorandum contains the laboratory reporting forms as well as START's handwritten data qualifications where warranted.

2.0 ORGANIC DATA VALIDATION RESULTS

The Results of START's organic data validation are summarized below by QC audit reviewed. The data qualifiers listed below were applied to sample analytical results where warranted (see attachment):

- J – The analyte was detected. The reported concentration was considered estimated.
- U – The analyte was not detected.
- UJ – The analyte was not detected. The reporting limit was considered estimated.

After the START project staff received the data packages, they were inventoried for completeness and then reviewed according to matrix-specific protocols and data quality objectives established for the project.

2.1 SEWER SAMPLE BY METHOD 8260B FOR VOCs

2.1.1 SAMPLE HANDLING

Chain of custody documentation and sample receipt forms were reviewed to ensure requested analyses were performed and that samples arrived at the laboratory intact. The sewer sample was collected on October 17th, 2008 and were received cool and intact by the laboratory. No discrepancies were noted.

2.1.2 SAMPLE PRESERVATION AND HOLDING TIME

Samples were shipped on ice and properly preserved. The VOC sample was analyzed ten days after collection. No discrepancies were noted.

2.1.3 GC/MS TUNING, INITIAL CALIBRATION, AND CONTINUING CALIBRATION

Gas chromatograph/mass spectrometer (GC/MS) instrument performance checks are performed to ensure mass resolution, identification, and to some degree, sensitivity. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis.

Calibration data was not included with the analytical data package. LCS and surrogate recovery data indicate acceptable instrument calibration. No action was taken to qualify analytical data.

2.1.4 BLANK RESULTS

The purpose of laboratory (or field) blank analysis is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities.

Methylene chloride was detected in laboratory method blank sample VBLK102708-1 at 0.006 mg/Kg. No field sample detects were noted for methylene chloride. No action was taken to qualify analytical data.

2.1.5 SURROGATE RECOVERIES

Laboratory performance on individual samples is established by means of fortifying each sample with surrogate compounds (System Monitoring Compounds). Surrogate spike compounds included 4-bromofluorobenzene, toluene-d8, dibromofluoromethane, and 1,2-dichloroethane-d4. Surrogate recoveries for VOCs ranged from 94.5% to 107%. No discrepancies were noted.

2.1.6 MS/MSD RECOVERY RESULTS

Data for matrix spike/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis.

MS/MSD audits were not run for the single sample. No action was taken to qualify analytical data.

2.1.7 LCS RECOVERY RESULTS

Data for laboratory control samples (LCS) are generated to provide information on the accuracy of the analytical method and on the laboratory performance. Laboratory Control Samples (LCS) were fortified with the full list of VOCs and analyzed with each batch of samples. The LCS accuracy performance is measured by Percent Recovery (%R).

The %R for bromomethane in LCS sample VBLK102708-1 was low at 64.9%. The lower control limit was 70%. LCSD recovery was acceptable and surrogate recoveries were acceptable. No action was taken to qualify analytical data

2.1.8 INTERNAL STANDARD AREA COUNTS AND RETENTION TIMES

Internal Standards (IS) performance criteria ensure that GC/MS sensitivity and response are stable during each analysis. Internal standard area counts must not vary by more than thirty percent (-30 percent to +30 percent) from the associated 12 hour calibration standard. The IS compounds used were fluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene.

Internal standard recovery data was not included with the analytical data package. LCS and surrogate recovery data indicate acceptable instrument quantitation. No action was taken to qualify analytical data.

2.1.9 TARGET COMPOUND IDENTIFICATION AND QUANTITATION

The objective of the criteria for GC/MS qualitative analysis is to minimize the number of erroneous identifications of compounds. An erroneous identification can either be a false positive (reporting a compound present when it is not) or a false negative (not reporting a compound that is present). The objective of the criteria for GC/MS quantitative analysis is to ensure that the reported quantitation results and Contract Required Quantitation Limits (CRQLs) are accurate. No discrepancies were noted.

2.2 SEWER SAMPLE BY METHOD 8082 FOR PCBs

2.2.1 SAMPLE HANDLING

Chain of custody documentation and sample receipt forms were reviewed to ensure requested analyses were performed and that samples arrived at the laboratory intact. The sewer sample was collected on October 17th, 2008 and were received cool and intact by the laboratory. No discrepancies were noted.

2.2.2 SAMPLE PRESERVATION AND HOLDING TIME

Samples were shipped on ice and properly preserved. The PCB sample was extracted eight days after collection and analyzed ten days after collection. No discrepancies were noted.

2.2.3 GC/ECD INITIAL CALIBRATION, AND CONTINUING CALIBRATION

Gas chromatograph/mass spectrometer (GC/MS) instrument performance checks are performed to ensure mass resolution, identification, and to some degree, sensitivity. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis.

Calibration data was not included with the analytical data package. LCS and surrogate recovery data indicate acceptable instrument calibration. No action was taken to qualify analytical data.

2.2.4 BLANK RESULTS

The purpose of laboratory (or field) blank analysis is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities. Laboratory method blank sample MB-38457-PCB was run with this SDG. No laboratory method blank detects were noted.

2.2.5 SURROGATE RECOVERIES

Laboratory performance on individual samples is established by means of fortifying each sample with surrogate compounds (System Monitoring Compounds). Surrogate spike compounds included 4-bromofluorobenzene, toluene-d8, dibromofluoromethane, and 1,2-dichloroethane-d4. Surrogate recoveries for VOCs ranged from 56% to 123%. No discrepancies were noted.

2.2.6 MS/MSD RECOVERY RESULTS

Data for matrix spike/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. MS/MSD recoveries ranged from 122% to 138%. No discrepancies were noted.

2.2.7 LCS RECOVERY RESULTS

Data for laboratory control samples (LCS) are generated to provide information on the accuracy of the analytical method and on the laboratory performance. Laboratory Control Samples (LCS) were fortified with the full list of VOCs and analyzed with each batch of samples. The LCS accuracy performance is measured by Percent Recovery (%R). LCS recoveries ranged from 103% to 122%. No discrepancies were noted.

2.2.8 TARGET COMPOUND IDENTIFICATION AND QUANTITATION

The objective of the criteria for GC/ECD qualitative analysis is to minimize the number of false positives (reporting a compound present when it is not) and false negatives (not reporting a compound that is present). The objective of the criteria for GC/ECD quantitative analysis is to ensure that the reported quantitation results and Contract Required Quantitation Limits (CRQLs) are accurate. No discrepancies were noted.

2.3 SEWER SAMPLE BY METHOD 8015 FOR TPH

2.3.1 SAMPLE HANDLING

Chain of custody documentation and sample receipt forms were reviewed to ensure requested analyses were performed and that samples arrived at the laboratory intact. The sewer sample was collected on October 17th, 2008 and were received cool and intact by the laboratory. No discrepancies were noted.

2.3.2 SAMPLE PRESERVATION AND HOLDING TIME

Samples were shipped on ice and properly preserved. The TPH sample was extracted eight days after collection and analyzed ten days after collection. No discrepancies were noted.

2.3.3 GC/FID INITIAL CALIBRATION, AND CONTINUING CALIBRATION

Gas chromatograph/mass spectrometer (GC/MS) instrument performance checks are performed to ensure mass resolution, identification, and to some degree, sensitivity. Initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve. Continuing calibration establishes the 12-hour relative response factors on which the quantitations are based and checks satisfactory performance of the instrument on a day-to-day basis.

Calibration data was not included with the analytical data package. LCS and surrogate recovery data indicate acceptable instrument calibration. No action was taken to qualify analytical data.

2.3.4 BLANK RESULTS

The purpose of laboratory (or field) blank analysis is to determine the existence and magnitude of contamination resulting from laboratory (or field) activities. Laboratory method blank sample MB-38436-TPH was run with this SDG. No laboratory method blank detects were noted.

2.3.5 MS/MSD RECOVERY RESULTS

Data for matrix spike/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. MS/MSD recoveries were all high at 420% to 2200%. High native sample results for TPH were noted which masked the MS/MSD recoveries. LCS recoveries were acceptable. No action was taken to qualify analytical data.

2.3.6 LCS RECOVERY RESULTS

Data for laboratory control samples (LCS) are generated to provide information on the accuracy of the analytical method and on the laboratory performance. Laboratory Control Samples (LCS) were fortified with the full list of VOCs and analyzed with each batch of samples. The LCS accuracy performance is measured by Percent Recovery (%R). LCS recoveries ranged from 79.7% to 90.7%. No discrepancies were noted.

2.3.7 TARGET COMPOUND IDENTIFICATION AND QUANTITATION

The objective of the criteria for GC/ECD qualitative analysis is to minimize the number of false positives (reporting a compound present when it is not) and false negatives (not reporting a compound that is present). The objective of the criteria for GC/ECD quantitative analysis is to ensure that the reported quantitation results and Contract Required Quantitation Limits (CRQLs) are accurate. No discrepancies were noted.

3.0 INORGANIC DATA VALIDATION RESULTS

The Results of START's inorganic data validation are summarized below by QC audit reviewed. The data qualifiers listed below were applied to sample analytical results where warranted (see attachment):

- J – The analyte was detected. The reported concentration was considered estimated.
- U – The analyte was not detected.
- UJ – The analyte was not detected. The reporting limit was considered estimated.

After the START project staff received the data packages, they were inventoried for completeness and then reviewed according to matrix-specific protocols and data quality objectives established for the project.

3.1 SOIL SAMPLES BY METHOD 6020/7471A FOR TOTAL AND TCLP METALS

3.1.1 SAMPLE HANDLING

Chain of custody documentation and sample receipt forms were reviewed to ensure requested analyses were performed and that samples arrived at the laboratory intact. Soil samples were collected on August 26th, 2008 and were received cool and intact by the laboratory. No discrepancies were noted.

3.1.2 SAMPLE PRESERVATION AND HOLDING TIME

Soil metals samples were analyzed up to ten days after collection. Soil TCLP metals samples were analyzed twenty-nine days after collection. No discrepancies were noted.

3.1.3 INITIAL CALIBRATION, AND CONTINUING CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing calibration verification establishes that the initial calibration is still valid by checking the performance of the instrument on a continual basis. No discrepancies were noted.

3.1.4 BLANK RESULTS

The assessment of blank analysis results is to determine the existence and magnitude of contamination resulting from laboratory and/or field activities. Laboratory method blank samples IMBS1 8/29/08, HGMBS2 9/5/08, IMBTCLP1 9/23/08, and IMBW1 9/24/08 were run with SDG 08080926.

Barium was detected in laboratory method blank sample IMBS1 8/29/08 at 0.07 mg/Kg. Field sample results were well above the corrected blank action level of 1 mg/Kg. No action was taken to qualify analytical data.

3.1.5 INTERFERENCE CHECK SAMPLE (ICS) RECOVERIES

The ICP Interference Check Sample (ICS) verifies the contract laboratory's interelement and background correction factors. No discrepancies were noted.

3.1.6 LCS RECOVERY RESULTS

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Laboratory Control Samples (LCS) were fortified with each analyte of interest and analyzed with each batch of samples. The LCS accuracy performance is measured by Percent Recovery (%R). LCS recoveries ranged from 88.1% to 112%. No discrepancies were noted.

3.1.7 MS/MSD RECOVERY RESULTS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The MS/MSD accuracy performance is measured by Percent Recovery (%R).

The MS/MSD recoveries for zinc in sample 08080993-003A were low at 57% and 68.7%. The lower control limit was 75%. Sample 08080993-003A was from a different site, both field sample results in this SDG for zinc were detected, and the LCS recoveries were acceptable. No action was taken to qualify analytical data.

3.1.8 SERIAL DILUTION RESULTS

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. Serial dilution audits were not run with these SDGs. No action was taken to qualify analytical data for missing serial dilution audit results.

3.2 SOIL SAMPLES BY METHOD 9045C FOR pH

3.2.1 SAMPLE HANDLING

Chain of custody documentation and sample receipt forms were reviewed to ensure requested analyses were performed and that samples arrived at the laboratory intact. Soil samples were collected on August 26th, 2008 and were received cool and intact by the laboratory. No discrepancies were noted.

3.2.2 SAMPLE PRESERVATION AND HOLDING TIME

Soil pH samples were analyzed up to four days after collection. No discrepancies were noted.

3.2.3 INITIAL CALIBRATION, AND CONTINUING CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing calibration verification

establishes that the initial calibration is still valid by checking the performance of the instrument on a continual basis. No discrepancies were noted.

3.2.4 DUPLICATE SAMPLE RESULTS

The duplicate sample analysis is designed to demonstrate acceptable method precision by the Laboratory at the time of analysis. Duplicate analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. The duplicate precision performance is measured by Relative Percent Difference (RPD). Duplicate sample RPD was 0%. No discrepancies were noted.

4.0 OVERALL ASSESSMENT OF DATA

The analytical performance of this data set is very strong. The analytical results meet the data quality objectives defined by the applicable method and validation guidance documentation. The analytical data is usable and acceptable with the qualifications noted above. Rejection of analytical data was not required.

ATTACHEMENT
STL SUMMARY OF ANALYTICAL RESULTS
AND
CHAIN-OF-CUSTODY
(9 Sheets)

STAT Analysis Corporation

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Report Date: September 26, 2008

Print Date: September 26, 2008

Client:	TN & Associates Inc.	Client Sample ID:	MH-1
Lab Order:	08080926	Tag Number:	
Project:	M & H Zinc, LaSalle	Collection Date:	8/26/2008 10:40:00 AM
Lab ID:	08080926-001A	Matrix:	Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	SW7471A					
Mercury	0.037	0.026		mg/Kg-dry	1	Prep Date: 9/5/2008 Analyst: VA 9/5/2008
Metals by ICP/MS	SW6020 (SW3050B)					
Arsenic	96	1		mg/Kg-dry	10	Prep Date: 8/29/2008 Analyst: JG 8/29/2008
Barium	16	1		mg/Kg-dry	10	8/29/2008
Cadmium	2000	10		mg/Kg-dry	200	8/31/2008
Chromium	2.8	1		mg/Kg-dry	10	8/29/2008
Lead	2300	0.52		mg/Kg-dry	10	8/29/2008
Selenium	30	21		mg/Kg-dry	200	8/31/2008
Silver	36	1		mg/Kg-dry	10	8/29/2008
Zinc	500000	10000		mg/Kg-dry	20000	9/24/2008
TCLP Metals by ICP/MS	SW1311/8020 (SW3005A)					
Lead	7.5	0.005		mg/L	5	Prep Date: 9/24/2008 Analyst: JG 9/24/2008
pH (25 °C)	SW9046C					
pH	6.3			pH Units	1	Prep Date: 8/29/2008 Analyst: JMS 8/29/2008
Percent Moisture	D2974					
Percent Moisture	5.0	0.01	*	wt%	1	Prep Date: 9/5/2008 Analyst: JP 9/8/2008

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

* - Non-accredited parameter

RL - Reporting / Quantitation Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Holding time exceeded

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Report Date: September 26, 2008

Print Date: September 26, 2008

Client:	TN & Associates Inc.	Client Sample ID:	MH-2
Lab Order:	08080926	Tag Number:	
Project:	M & H Zinc, LaSalle	Collection Date:	8/26/2008 10:45:00 AM
Lab ID:	08080926-002A	Matrix:	Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Mercury	SW7471A		Prep Date: 9/5/2008		Analyst: VA	
Mercury	13	0.58		mg/Kg-dry	20	9/5/2008
Metals by ICP/MS	SW6020 (SW3050B)		Prep Date: 8/29/2008		Analyst: JG	
Arsenic	58	1.1		mg/Kg-dry	10	8/29/2008
Barium	340	1.1		mg/Kg-dry	10	8/29/2008
Cadmium	740	0.56		mg/Kg-dry	10	8/29/2008
Chromium	170	1.1		mg/Kg-dry	10	8/29/2008
Lead	16000	11		mg/Kg-dry	200	8/31/2008
Selenium	ND	22		mg/Kg-dry	200	8/31/2008
Silver	13	1.1		mg/Kg-dry	10	8/29/2008
Zinc	85000	11000		mg/Kg-dry	20000	9/24/2008
TCLP Metals by ICP/MS	SW1311/6020 (SW3005A)		Prep Date: 9/24/2008		Analyst: JG	
Lead	48	0.005		mg/L	5	9/24/2008
pH (25 °C)	SW9045C		Prep Date: 8/29/2008		Analyst: JMS	
pH	6.6			pH Units	1	8/29/2008
Percent Moisture	D2974		Prep Date: 9/5/2008		Analyst: JP	
Percent Moisture	14.3	0.01	*	wt%	1	9/8/2008

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E - Value above quantitation range

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Report Date: September 26, 2008

Print Date: September 26, 2008

Client:	TN & Associates Inc.	Client Sample ID:	MH-8
Lab Order:	08080926	Tag Number:	
Project:	M & H Zinc, LaSalle	Collection Date:	8/26/2008 1:10:00 PM
Lab ID:	08080926-003A	Matrix:	Water

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
pH	E150.1					Prep Date: 8/26/2008 Analyst JMS
pH	7.0		*	pH units	1	8/26/2008

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

* - Non-accredited parameter

RL - Reporting / Quantitation Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Holding time exceeded

Handwritten signature and date: JMS 8/26/08

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2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Report Date: September 26, 2008

Print Date: September 26, 2008

Client:	TN & Associates Inc.	Client Sample ID:	MH-12
Lab Order:	08080926	Tag Number:	
Project:	M & H Zinc, LaSalle	Collection Date:	8/26/2008 1:35:00 PM
Lab ID:	08080926-004A	Matrix:	Soil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
pH (25 °C)		SW9045C				
pH	9.3			pH Units	1	8/29/2008
						Prep Date: 8/29/2008 Analyst: JMS

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

* - Non-accredited parameter

RL - Reporting / Quantitation Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Holding time exceeded

Handwritten signature and date: 11/15/08

STAT Analysis Corporation

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Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Report Date: October 28, 2008

Print Date: October 28, 2008

Client:	TN & Associates Inc.	Client Sample ID:	MHOU2-SEWER
Lab Order:	08100732	Tag Number:	
Project:	B222-18, Mathiessen & Hegeler Zinc Site (OU2)	Collection Date:	10/17/2008 9:00:00 AM
Lab ID:	08100732-001A	Matrix:	Oil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
PCBs in Oil						
	SW8082 (SW3580A)			Prep Date: 10/25/2008		Analyst: EJJH
Aroclor 1016	ND	0.94		mg/Kg	1	10/27/2008
Aroclor 1221	ND	0.94		mg/Kg	1	10/27/2008
Aroclor 1232	ND	0.94		mg/Kg	1	10/27/2008
Aroclor 1242	ND	0.94		mg/Kg	1	10/27/2008
Aroclor 1248	ND	0.94		mg/Kg	1	10/27/2008
Aroclor 1254	ND	0.94		mg/Kg	1	10/27/2008
Aroclor 1260	4.2	0.94		mg/Kg	1	10/27/2008
Total Petroleum Hydrocarbons						
	SW8015M (SW3580A)			Prep Date: 10/25/2008		Analyst: KSB
TPH (GRO)	240	190		mg/Kg	1	10/27/2008
TPH (DRO)	190000	1900		mg/Kg	10	10/27/2008
TPH (ERO)	590000	19000	*	mg/Kg	100	10/27/2008
Volatile Organic Compounds by GC/MS						
	SW8260B			Prep Date: 10/21/2008		Analyst: PS
Acetone	ND	3.5		mg/Kg	50	10/27/2008
Benzene	ND	0.35		mg/Kg	50	10/27/2008
Bromodichloromethane	ND	0.35		mg/Kg	50	10/27/2008
Bromoform	ND	0.35		mg/Kg	50	10/27/2008
Bromomethane	ND	0.71		mg/Kg	50	10/27/2008
2-Butanone	ND	0.71		mg/Kg	50	10/27/2008
Carbon disulfide	ND	0.35		mg/Kg	50	10/27/2008
Carbon tetrachloride	ND	0.35		mg/Kg	50	10/27/2008
Chlorobenzene	ND	0.35		mg/Kg	50	10/27/2008
Chloroethane	ND	0.71		mg/Kg	50	10/27/2008
Chloroform	ND	0.35		mg/Kg	50	10/27/2008
Chloromethane	ND	0.71		mg/Kg	50	10/27/2008
Dibromochloromethane	ND	0.35		mg/Kg	50	10/27/2008
1,1-Dichloroethane	ND	0.35		mg/Kg	50	10/27/2008
1,2-Dichloroethane	ND	0.35		mg/Kg	50	10/27/2008
1,1-Dichloroethene	ND	0.35		mg/Kg	50	10/27/2008
cis-1,2-Dichloroethene	ND	0.35		mg/Kg	50	10/27/2008
trans-1,2-Dichloroethene	ND	0.35		mg/Kg	50	10/27/2008
1,2-Dichloropropane	ND	0.35		mg/Kg	50	10/27/2008
cis-1,3-Dichloropropene	ND	0.14		mg/Kg	50	10/27/2008
trans-1,3-Dichloropropene	ND	0.14		mg/Kg	50	10/27/2008
Ethylbenzene	ND	0.35		mg/Kg	50	10/27/2008
2-Hexanone	ND	0.71		mg/Kg	50	10/27/2008
4-Methyl-2-pentanone	ND	0.71		mg/Kg	50	10/27/2008
Methylene chloride	ND	0.71		mg/Kg	50	10/27/2008

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

HT - Sample received past holding time

* - Non-accredited parameter

RL - Reporting / Quantitation Limit for the analysis

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

H - Holding time exceeded

MS
11/18/08

STAT Analysis Corporation

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766

Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

Accreditation Numbers: IEPA ELAP 100445; ORELAP IL300001; AIHA 101160; NVLAP LabCode 101202

Report Date: October 28, 2008

Print Date: October 28, 2008

Client:	TN & Associates Inc.	Client Sample ID:	MHOU2-SEWER
Lab Order:	08100732	Tag Number:	
Project:	B222-18, Mathiessen & Hegeler Zinc Site (OU2)	Collection Date:	10/17/2008 9:00:00 AM
Lab ID:	08100732-001A	Matrix:	Oil

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed
Volatile Organic Compounds by GC/MS						
		SW8260B			Prep Date: 10/21/2008	Analyst: PS
Methyl tert-butyl ether	ND	0.35		mg/Kg	50	10/27/2008
Styrene	ND	0.35		mg/Kg	50	10/27/2008
1,1,2,2-Tetrachloroethane	ND	0.35		mg/Kg	50	10/27/2008
Tetrachloroethene	ND	0.35		mg/Kg	50	10/27/2008
Toluene	ND	0.35		mg/Kg	50	10/27/2008
1,1,1-Trichloroethane	ND	0.35		mg/Kg	50	10/27/2008
1,1,2-Trichloroethane	ND	0.35		mg/Kg	50	10/27/2008
Trichloroethane	ND	0.35		mg/Kg	50	10/27/2008
Vinyl chloride	ND	0.35		mg/Kg	50	10/27/2008
Xylenes, Total	ND	1.1		mg/Kg	50	10/27/2008

Qualifiers:	ND - Not Detected at the Reporting Limit	RL - Reporting / Quantitation Limit for the analysis
	J - Analyte detected below quantitation limits	S - Spike Recovery outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	R - RPD outside accepted recovery limits
	HT - Sample received past holding time	E - Value above quantitation range
	* - Non-accredited parameter	H - Holding time exceeded

Handwritten signature: MS
11/14/08



Analysis is Corporation

2242 W. Harrison, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STA@analysis.com AIHA, NELAP and NELAP accredited

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No: 824086

CHAIN OF CUSTODY RECORD

Company: TN&A		Client Tracking No.:							
Project Number:		Quote No.:							
Project Name: MH Zinc									
Project Location: Losalle									
Sampler(s): Clayton Gibson									
Report To: Rich Batolino									
Phone:		Fax:							
e-mail:									
QC Level: 1	2	3	4						
Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp	Grb	Preser	No. of Containers	Remarks	Results Needed:
MH-1	8/26/08	1040	Solid	X			1	Hold TCLP	001
MH-2		1045	Solid	X			1	Hold TCLP	002
MH-3		1230	Acid	X			1		
MH-4		1240	Acid	X			1		
MH-5		1250	Acid	X			1		
MH-6		1255	Acid	X			1		
MH-7		1300	Acid	X			1		
MH-8		1310	Liquid	X			1		
MH-9		1320	Acid	X			1		
MH-10		1325	Acid	X			1		
MH-11		1330	Acid	X			1		
MH-12		1335	Solid	X			1		
MH-13		1345	Acid	X			1		
Relinquished by: (Signature) _____ Date/Time: 8/26/08 10:30 Received by: (Signature) _____ Date/Time: 8/26/08 10:30 Relinquished by: (Signature) _____ Date/Time: _____ Received by: (Signature) _____ Date/Time: _____ Relinquished by: (Signature) _____ Date/Time: _____ Received by: (Signature) _____ Date/Time: _____									
Comments: 2 week TAT Hold TCLP + H fill after total Results are back.									
Preservation Code: A = None B = HNO ₃ C = NaOH D = H ₂ SO ₄ E = HCl F = 5035/ETCore G = Other									



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2242 W. Harrison, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STATinfo@STAT-Analysis.com AIHA, NVLAP and NELAP accredited

CHAIN OF CUSTODY RECORD

N^o: 823814

Page: 1 of 1

Company: <u>STN Environmental, JV</u>		P.O. No.:										
Project Number: <u>EDS # 3222-18</u> Client Tracking No.:		Quote No.:										
Project Name: <u>Matthiessen + Hegeler Zinc Site (OU2)</u>		<div style="border: 1px solid black; padding: 5px;"> Turn Around: <u>5 day</u> Results Needed: am/pm </div>										
Project Location: <u>LaSalle, IL</u>												
Sampler(s): <u>Cheryl Gorman & Tracey Koach</u>												
Report To: <u>Chad Gibson</u> Phone: <u>312-443-0550 x18</u> <u>cc Rich Baldino, Jennifer Koopke</u> Fax: <u>312-443-0557</u> <small>jkkoopke@onesullivan.com</small>												
QC Level: 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>		e-mail: <u>cgibson@onesullivan.com</u> <u>rbaldino@onesullivan.com</u>										
Client Sample Number/Description:	Date Taken	Time Taken	Matrix	Comp.	Grab	Preserv.	No. of Containers	VOC PCP TPH		Remarks	Lab No.	
<u>MAOU2-SEWER</u>	<u>10/17/08</u>	<u>0900</u>	<u>oil</u>		<u>X</u>		<u>1</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>Dilution for VOCs necessary</u>	<u>001</u>
<div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; border: 1px solid black; background: linear-gradient(to top right, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%); background-size: 40px 40px;"> </div>												
Relinquished by: (Signature) <u>Tracey Koach</u>		Date/Time: <u>10/20/08 0900</u>		Comments: Please Bill to (414) 257-4200				<div style="border: 1px solid black; padding: 5px;"> 08100732 Received on this Year <input checked="" type="checkbox"/> No <input type="checkbox"/> Temperature <u>2.8 °C</u> </div>				
Received by: (Signature) <u>Christine Bashaw</u>		Date/Time: <u>10-20-08 1:20</u>		Christine Bashaw								
Relinquished by: (Signature) <u>Christine Bashaw</u>		Date/Time: <u>10-20-08 6:45</u>		TNI Associates								
Received by: (Signature) <u>Christine Bashaw</u>		Date/Time: <u>10/20/08 18:15</u>		103 N. MAYFAIR RD #200								
Relinquished by: (Signature) <u>Christine Bashaw</u>		Date/Time:		Milwaukee, WI 53226								
Received by: (Signature)		Date/Time:		Preservation Code: A = None B = HNO ₃ C = NaOH								
Received by: (Signature)		Date/Time:		D = H ₂ SO ₄ E = HCl F = 5035 TinCore G = Other								

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Craig Chawla

From: Richard Baldino [RBaldino@tnainc.com]
Sent: Tuesday, September 23, 2008 3:56 PM
To: Craig Chawla
Cc: Gibson, Chad
Subject: M&H Zinc and TCLP Lead

Craig:
Please add total Zinc and TCLP lead to the list of analytes for the M&H project (STAT Project Number 08080926) for samples MH-1 and MH-2.

Thanks.

Richard Baldino
Senior Project Chemist
TN & Associates, Inc
100 W. Monroe, Suite 300
Chicago, IL 60603
(847) 494-2685

9/23/2008

APPENDIX C

SITE MAPS

