

**COPY**

## LUST Investigation Field Procedures Workplan

Kipp's Auto & Towing Service  
5507 West Hampton Avenue  
Milwaukee, Wisconsin

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PECFA BUREAU

October 2, 2012

by METCO

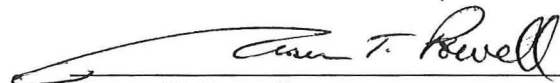
WDNR File Reference #: 03-41-543343

PECFA Claim #: 53218-5041-07

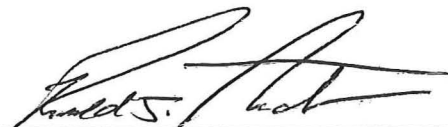


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This document was prepared by:



Jason T. Powell  
Staff Scientist



Ronald J. Anderson, P.G.  
Senior Hydrogeologist/Project Manager



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709 Gillette St, Suite 3 ♦ La Crosse, WI 54603 ♦ 1-800-552-2932 ♦ Fax (608) 781-8893 Email: [rona@metcohq.com](mailto:rona@metcohq.com) ♦ [www.metcohq.com](http://www.metcohq.com)

October 28, 2012

WDNR BRRTS#: 03-41-543343

PECFA Claim #: 53218-5041-07

Melvin Kipp  
c/o Allen Kipp  
5507 West Hampton Avenue  
Milwaukee, WI 53218

Dear Mr. Kipp,

Enclosed is our "LUST Investigation Field Procedures Workplan" concerning the Kipp's Auto & Towing Service site in Milwaukee, Wisconsin. This document outlines the procedures and the methods used to conduct such an investigation.

A copy of this workplan will be sent to the Wisconsin Department of Safety & Professional Services (DSPS) for review.

We appreciate the opportunity to be of service to you on this project. Should you have any questions or require additional information, do not hesitate to contact our La Crosse office.

Sincerely,

Jason T. Powell  
Staff Scientist

C: Monica Weis – DSPS

**LUST Investigation Field Procedures Workplan - METCO  
Kipp's Auto & Towing Service**

**Table of Contents**

OBJECTIVES..... 1

INTRODUCTION.....2

SITE BACKGROUND.....3

SITE CONDITIONS.....3

SCOPE OF WORK.....4

METCO PROCEDURES AND METHODS.....6

SCHEDULE FOR INVESTIGATION PROJECT.....9

APPENDIX A/SITE MAPS..... 11

APPENDIX B/INVESTIGATION CHECKLIST.....12

APPENDIX C/LUST SAMPLING GUIDELINES.....13

APPENDIX D/WDNR DOCUMENTS.....14

APPENDIX E/PROJECT DOCUMENTS.....15

APPENDIX F/HEALTH AND SAFETY PLAN.....16

APPENDIX G/QUALIFICATIONS.....17

**LUST Investigation Field Procedures Workplan - METCO  
Kipp's Auto & Towing Service**

**LIST OF ACRONYMS**

**AST** - Aboveground Storage Tank  
**ASTM** - American Society for Testing and Materials  
**Cd** - Cadmium  
**DOT** - Department of Transportation  
**DRO** - Diesel Range Organics  
**ES** - Enforcement Standards  
**gpm** - gallons per minute  
**GRO** - Gasoline Range Organics  
**HNU** - brand name for Photoionization Detector  
**ID** - inside-diameter  
**LAST** - Leaking Aboveground Storage Tank  
**LUST** - Leaking Underground Storage Tank  
**MSL** - Mean Sea Level  
**MTBE** - Methyl-tert-butyl ether  
**MW** - Monitoring Well  
**NIOSH** - National Institute for Occupational Safety & Health  
**NR** - Natural Resources  
**OD** - outside-diameter  
**PAH** - Polynuclear Aromatic Hydrocarbons  
**PAL** - Preventive Action Limits  
**Pb** - Lead  
**PECFA** - Petroleum Environmental Cleanup Fund  
**PID** - Photoionization Detector  
**POTW** - Publicly Owned Treatment Works  
**ppb ug/kg** - parts per billion  
**ppm mg/kg** - parts per million  
**psi** - pounds per square inch  
**PVC** - Polyvinyl Chloride  
**PVOC** - Petroleum Volatile Organic Compounds  
**RAP** - Remedial Action Plan  
**scfm** - standard cubic feet per minute  
**SVE** - Soil Vapor Extraction  
**USCS** - Unified Soil Classification System  
**USGS** - United States Geological Survey  
**UST** - Underground Storage Tank  
**VOC** - Volatile Organic Compounds  
**WDCOMM** - Wisconsin Department of Commerce  
**WDILHR** - Wisconsin Department of Industry, Labor, and Human Relations  
**WDNR** - Wisconsin Department of Natural Resources  
**WPDES** - Wisconsin Pollutant Discharge Elimination System

# **LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service**

## **OBJECTIVES**

### **Requirements of the WDNR**

A Leaking Underground Storage Tank (LUST) Investigation is required by the Wisconsin Department of Natural Resources (WDNR) by authority of Section 292.11 of the Wisconsin Statutes. According to the WDNR, any soil that tests over 10 ppm Gasoline Range Organics (GRO) or Diesel Range Organics (DRO) requires an investigation. Any soil that tests over the Chapter NR720 Soil Cleanup Standards or NR746 Table 1/Table 2 Values may require remediation. Any groundwater that tests over the Preventive Action Limits (PAL) or Enforcement Standards (ES) for compounds listed in Chapter NR140 of the Wisconsin Statutes requires an investigation and possible remediation. For a further explanation of WDNR rules and regulations, see Appendix D.

### **Requirements of the PECFA Program**

According to rules adopted in May 2006, the maximum allowable cost for an initial LUST Investigation shall be no more than \$20,000 unless pre-approved by PECFA. All consultant and commodity service costs must not exceed the Wisconsin Department of Safety and Professional Services (DSPS) Usual and Customary Charges.

### **Purpose of Document**

This document briefly outlines all methods and procedures used by METCO personnel concerning "LUST Investigations". These guidelines are strictly followed unless changed by managing personnel, site conditions, or project situations. All changes will be clearly noted.

All work conducted by METCO is undertaken in accordance with approved methods and regulations of the WDNR Bureau for Remediation and Redevelopment and DSPS Bureau of PECFA.

This document is site specific and will always be on-site during the project.

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## INTRODUCTION

### Site Name

Kipp's Auto & Towing Service

### Site Address

5507 West Hampton Avenue  
Milwaukee, Wisconsin

### Legal Description

NW ¼, NW ¼, Section 2, Township 7 North, Range 21 East, Milwaukee County

### Contact or Client

Melvin Kipp  
c/o Allen Kipp  
5507 West Hampton Avenue  
Milwaukee, WI 53218  
(414) 527-3417

### WDSPS Project Manager

Monica Weis  
Wisconsin Department of Safety & Professional Services  
141 NW Barstow Street, 4<sup>th</sup> Floor  
Waukesha, WI 53188  
(262) 521-2732

### Consultant

METCO  
Ronald J. Anderson, P.G.  
Jason T. Powell  
709 Gillette Street, Suite 3  
La Crosse, WI 54603  
(608) 781-8879

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## SITE BACKGROUND

### Facility

A gas station operated on the subject property from 1951 until 1998. In 1986 a 3,000-gallon leaded gasoline UST and an 8,000-gallon unleaded gasoline UST were removed from the property. Two new 3,000 and 8,000-gallon gasoline UST's were installed in the same location. The UST's were in use until 1998, when retail gasoline sales were discontinued. A 500-gallon waste oil UST also exists on the southwest corner of the building. The waste oil UST is older and may date back to the 1950's. Currently the property is used as an automobile repair shop.

On May 6, 2005, Moraine Environmental, Inc completed one soil boring near the former pump island during an Environmental Site Assessment. A soil sample was collected at 7 feet below ground surface for DRO and GRO analysis. Laboratory analysis from the soil sample showed 15 ppm DRO and 69 ppm GRO. The petroleum contamination was subsequently reported to the WDNR, who then required that a site investigation be conducted at the subject property.

Numerous other LUST, ERP, and Spill sites exist in the City of Milwaukee. However, it does not appear that any are close enough to be impacting or impacted by the subject property.

### Potential Risks and Impacts

The subject property and surrounding properties are all served by the City of Milwaukee municipal water supply, which draws its potable water from Lake Michigan. METCO is not aware of any private water supply wells in the area, however neighboring properties will be inspected for private water supply wells during the site investigation.

METCO is not currently aware of any other impacts, receptors, risks, or local problems associated with the subject property.

## SITE CONDITIONS

### Topography

According to the USGS Hydrologic Atlas, Milwaukee is located in the southern portion of the Lake Michigan Basin. Present day landforms in this area were formed by continental glaciers, which advanced from the north and east scouring the bedrock surface and transporting rock debris in the ice. As the glaciers melted, this unconsolidated material was deposited on the bedrock

## **LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service**

surface. Kettle moraine deposits, which consist of permeable stratified sediments and till, exist in much of Milwaukee County. Glacial lake deposits of poorly permeable clay, silt, and sand occur along the shores of Lake Michigan.

The elevation of the site is approximately 660 feet above Mean Sea Level (MSL). See Appendix A for site location.

### **Geology**

Native unconsolidated materials in this area generally consist of silt/clay to silty sand. The unconsolidated materials are underlain by Silurian dolomite at approximately 100-150 feet below ground surface.

### **Hydrology**

The nearest surface water is Lincoln Creek, which exists approximately 1,500 feet to the southwest of the subject property.

### **Hydrogeology**

Based on nearby LUST sites, the depth to groundwater in this area is approximately 10-12 feet below ground surface. Groundwater flow direction is expected to be toward the southeast to southwest.

## **SCOPE OF WORK**

### **LUST Investigation**

An investigation consists of collecting samples of soil and groundwater for analysis by a laboratory for compounds related to petroleum products. The WDNR requires that the investigation determine the degree and extent of contaminants in these mediums, which is commonly referred to as "defining the contaminant plume". Further background information will also be collected to assist in the investigation.

### **Geoprobe Project**

METCO has proposed a one to two day Geoprobe Project. We propose 12 to 15 borings to 15 feet with soil and groundwater sampling. The Geoprobe will be used to collect soil samples at various depths in order to determine the general extent of contaminants in the subsurface environment.

The goal of the Geoprobe Project is to complete the following:

1. Determine general subsurface geotechnical characteristics.



## **LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service**

2. Determine general extent of the contaminants in the unconsolidated deposits.
3. Determine the general extent of contaminants in groundwater, if applicable.
4. Determine if contaminants have migrated to competent rock, if applicable.

This data will either completely define the extent of contamination or be used to guide the Drilling Project if required.

### **Drilling Project (if required)**

METCO has proposed 6 to 8 boreholes to be completed on/off site. METCO has also proposed 5 to 7 monitoring wells to be installed on/off site. Based on the results of the Geoprobe project, we will be able to determine how many monitoring wells will need to be installed.

The goal of the Drilling Project is to complete the following:

1. Collect a soil sample for field analysis every 2.5 feet of boring.
2. Collect at least two soil samples for laboratory analysis in every boring.
3. Verify, through sampling, the horizontal and vertical extent of soil contamination, including smear zones.
4. Install monitoring wells in an arrangement that fully defines the horizontal and vertical extent of groundwater contamination.
5. Develop the monitoring wells.
6. Collect at least two rounds of groundwater samples from the monitoring wells.
7. If conditions warrant, perform slug tests on at least one monitoring well.

### **Report Preparation**

The final report, prepared by METCO, will include background information, observations, procedures, methods, field data, laboratory analysis, site maps, data analysis, risk assessment, conclusions, and recommendations concerning all activities conducted for this project. This report will be submitted to the client and the WDNR or DSPS for review and discussion.

## **METCO PROCEDURES AND METHODS**

### **Geoprobe**

The Geoprobe consists of a truck mounted, hydraulically driven unit that advances 1-inch diameter, 3 or 4-foot long, stainless steel rods into the subsurface. At desired depths, either a soil or water sample can be collected.

A 4-foot or 5-foot long, ½ or 1-inch diameter soil sampler is advanced to the sampling location. At desired depths, a soil sample is collected and brought to the surface for analysis.

All Geoprobe holes are properly abandoned to ground level using bentonite clay and a surface seal.

### **Drilling**

Drilling is conducted with a truck mounted auger drill rig. To penetrate any unconsolidated materials, work is conducted in accordance with ASTM D-1452 "Soil Investigation and Sampling by Auger Boring". If bedrock is encountered and cannot be penetrated with auger boring, an accepted air-rotary drilling procedure will be used.

Sampling unconsolidated materials is done in accordance with ASTM D-1586 "Penetration Tests and Split-Barrel Sampling of Soils" using a 2-inch outside diameter (O.D.), 2.5 foot split spoon sampler. Using this procedure, a split spoon sampler is driven into the soil by a 140-pound weight falling 30-inches, and a soil sample collected.

All borings are properly abandoned to ground level using bentonite clay.

### **HNU Screening**

Each of the samples, for headspace analysis, are placed in a clean, clear, plastic Ziploc bag. These containers are to be filled ¼ full. All containers are the same size and filled to the same volume. The containers are then sealed.

Once collected and sealed, samples are shaken for 30 seconds to break apart soil clods. They are then allowed to establish headspace. The following table is used to determine headspace equilibration time.

Outside temperature    Time to establish headspace

- <40 deg. F    40 minutes

## LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

- 41-55 deg. F 20 minutes
- 56-69 deg. F 10 minutes
- >70 deg. F 5 minutes

To take readings, the HNU probe is inserted into the plastic bag halfway between the sample and the highest meter response recorded. The samples are screened with a MODEL HW-101 HNU Meter equipped with a 10.2 eV lamp. Metered calibration is done at the beginning of each workday. Other notes taken are as follows:

1. Temperature and weather conditions.
2. Date of last factory calibration.
3. Field calibration gas used and concentration.
4. Date and time of last calibration.
5. Instrument gain setting.
6. Erratic instrument readings.
7. Cleaning or repairs performed in the field.
8. Sample moisture (saturated, wet, moist, damp, dry).
9. Petroleum odors or staining of samples.
10. Any instrument quenching.
11. Other relevant information.

### Monitoring Wells

Groundwater monitoring well installations are completed under the direction of a METCO hydrogeologist and in accordance with Wisconsin Department of Natural Resources Chapter NR141, "Groundwater Monitoring Well Requirements." The monitoring wells are constructed of flush-threaded, two-inch inside diameter schedule 40 or 80 polyvinyl chloride (PVC) piping. Ten-foot well screens with 0.010-inch slots are installed approximately 5 to 6 feet into the watertable. A uniform washed sand is installed around the well screens to serve as a filter pack. Granular bentonite is used above the filter pack to provide a surface seal. Steel, locking protective well casings are cemented in at each well. Any variances from NR141 will be reported to the WDNR.

Each well is developed by alternately surging and purging with a clean polyethylene bailer for 20 to 30 minutes to remove fines from the well screen, after which ten well volumes are removed using a submersible pump.

## **LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service**

Groundwater level measurements are obtained using an electronic water level indicator. All measurements are recorded to the nearest 0.01-foot. The probe is thoroughly washed between measurements.

At least two rounds of samples are collected using a bottom loading, disposable, polyethylene bailer and disposable polyethylene cord. Approximately four well volumes are purged from each well before collecting samples.

Depending on site conditions and groundwater sampling results, a slug test may be conducted on one of the monitoring wells to determine hydrogeologic parameters (hydraulic conductivity, transmissivity, and flow velocity). During the slug test, groundwater in a monitoring well is displaced using a solid plastic slug, while water levels are recorded using a transducer and data logger. Water levels are recorded until the water level in the well returns to equilibrium. Slug test data is evaluated using the Bouwer and Rice method.

### **Well Elevation Survey**

All wells are surveyed to the nearest 0.01-foot MSL by a qualified surveying company.

### **Sample Analysis**

Environmental samples are collected to minimize both soil disturbance and exposure of the sample to the air.

Field observations such as soil characteristics, petroleum odors, product sheens, and staining associated with the samples are continuously noted throughout sampling.

The amount of sample taken, the size of the container used, and the type of sample preservation used, will depend on the laboratory contracted and for which parameters the soil samples are analyzed. See Appendix C for LUST Sample Guidelines.

All collected samples are stored in a cooler that maintains a temperature of, at most, 4 degrees Celsius. The coolers are accompanied by a complete chain of custody and are delivered to the laboratory within two days of sampling.

The WDNR document, "LUST Analytical and Quality Assurance Guidance, July 1993" is referenced in determining what parameters in which the soil and water samples will be analyzed, and the amount of duplicates/blanks required.

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## Quality Assurance/Quality Control/Waste Management

All drilling and sampling equipment advanced into the subsurface is cleaned between sampling locations. This consists of washing with a biodegradable Alconox solution and rinsing with potable water. Wash and rinse water are disposed of atop an isolated area of asphalt for evaporation or discharged into a local storm sewer.

Drill cuttings, field screened as being contaminated, are contained in 55-gallon DOT barrels, characterized, and properly disposed of by METCO and/or client.

Development and purge waters are contained in 55 gallon DOT barrels, characterized, and properly disposed of by METCO and/or the client. Disposal options will depend on the amount of water, type of contaminants, and concentration of contaminants. All wastewater contaminants and disposal activities are recorded with complete documentation submitted to the WDNR.

## Variances

We are not aware of any variances needed at this time.

## SCHEDULE FOR INVESTIGATION PROJECT

The following is a checklist of activities that have been, or will be completed, concerning the LUST Investigation, along with an estimated time frame. A typical LUST Investigation takes approximately 2 to 6 months. The investigation may take up to 12 months if bedrock or groundwater is contaminated.

- 1) METCO submits a LUST Investigation Project proposal to client (done).
- 2) Proposal acceptance by client. METCO notifies the WDNR that a consultant has been contracted (done).
- 3) Client obtains PECFA Packet and Site Eligibility Letter from PECFA (done).
- 4) METCO submits a LUST Investigation Field Procedures Workplan to client and WDNR for review and approval (10/2/12).
- 5) METCO conducts Geoprobe Project (2-4 weeks). More than one field mobilization may be needed to complete project depending on complexity of the site and project (1 month to receive lab results).
- 6) Depending on the results of the investigation, METCO prepares a brief summary report or final report and sends copies to client and WDNR (2 months after lab results are received).

**NOTE: If groundwater is found to be impacted or suspected of being**

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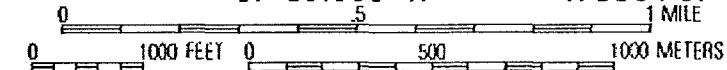
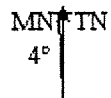
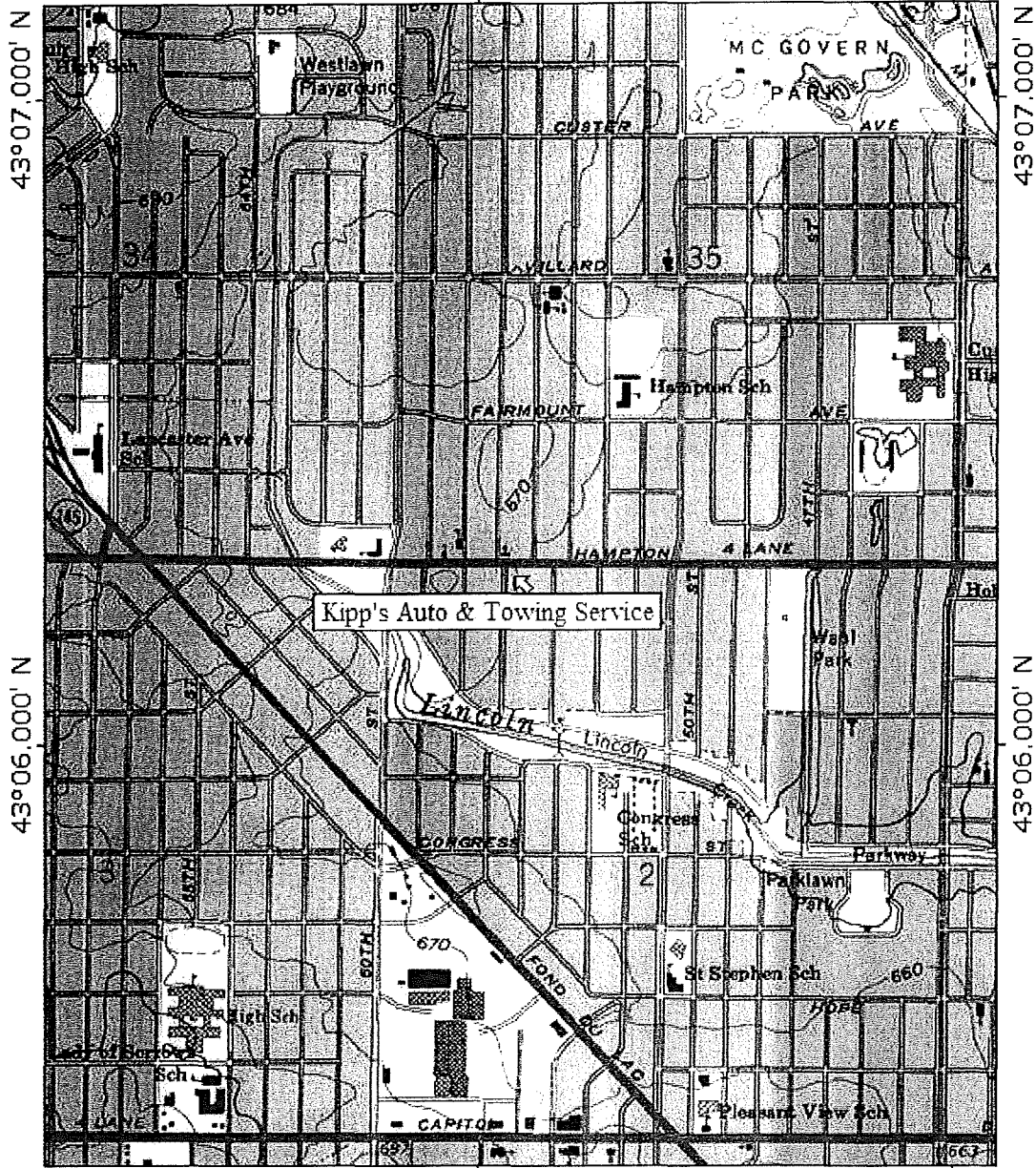
**impacted by released contaminants, the WDNR will require a Drilling Project with monitoring wells.**

- 7) METCO conducts Drilling Project (2 months). More than one field mobilization may be needed to complete project depending on complexity of the site and project (1 month to receive lab results).
- 8) METCO develops/surveys the installed monitoring wells and collects. Round 1 groundwater samples for laboratory analysis (1 month to receive lab results).
- 9) METCO collects Round 2 groundwater samples for laboratory analysis (1 month to receive lab results).
- 10) METCO completes any additional work that is needed, such as slug tests (1 month).
- 11) METCO prepares a LUST Investigation report that contains all collected data and submits to the client and WDNR (3-6 months).
- 12) If no further investigation work is required, METCO will apply for "site closure" with the WDNR or WDCOMM. Upon closure, METCO will complete the PECFA Application and submit for reimbursement (reimbursement takes 3 to 6 months).
- 13) If further investigation and/or remediation is required METCO will provide further assistance.

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## APPENDIX A/SITE MAPS

TOPO! map printed on 08/24/12 from "wisconsin.tpo" and "Untitled.tpg"  
87°59.000' W WGS84 87°58.000' W



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

SITE LOCATION MAP – CONTOUR INTERVAL 10 FEET
KIPP'S AUTO & TOWING SERVICE – MILWAUKEE, WI
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM



**SITE LAYOUT MAP**

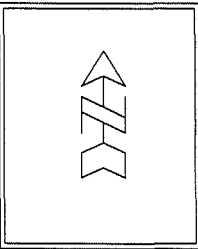
**KIPP'S AUTO & TOWING SERVICE**

MILWAUKEE, WISCONSIN

709 Gillette St. Suite 3  
La Crosse, WI 54603  
Tel: (608) 781-8879  
Fax: (608) 781-8893

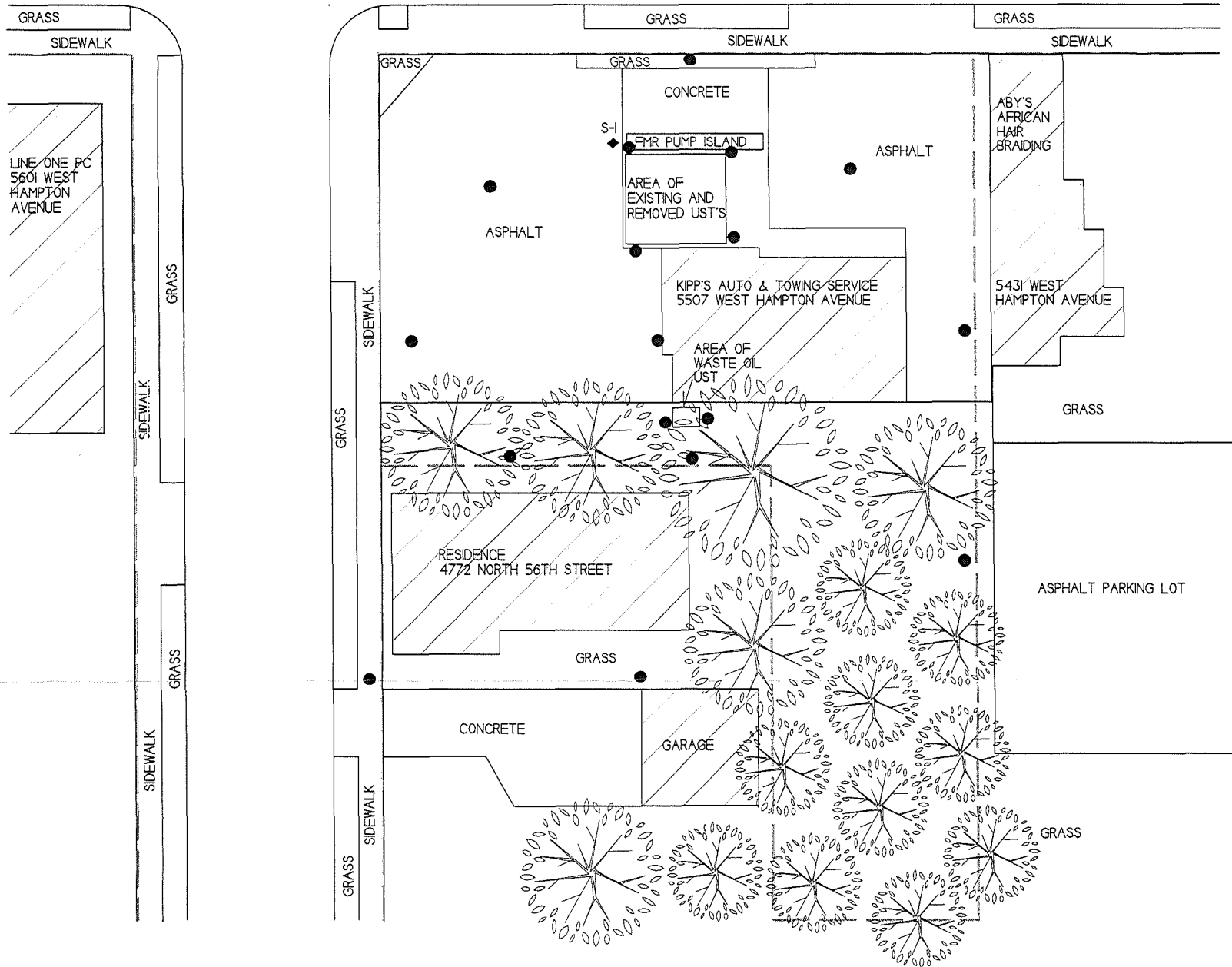
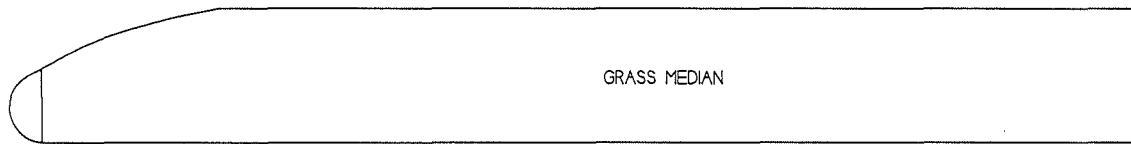
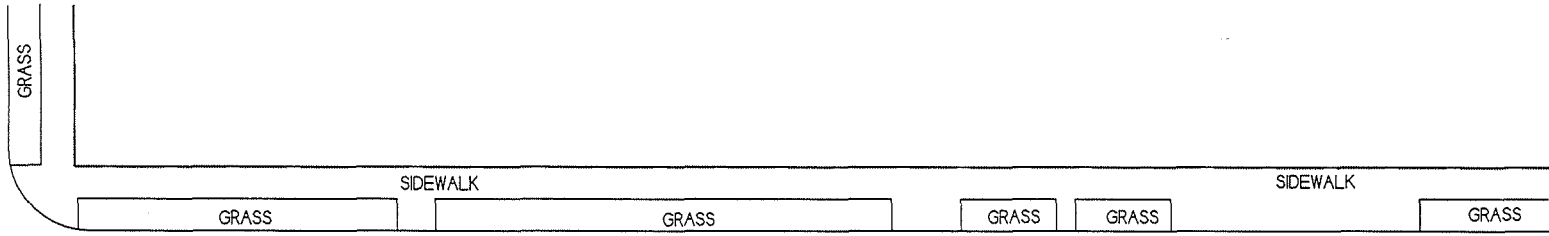
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DATE: 6/23/12

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Excellence through experience



- - PROPERTY LINE
  - - UNDERGROUND ELECTRIC LINE
  - ≡≡≡ - OVERHEAD ELECTRIC LINE
  - - - - - WATER LINE
  - · - · - SEWER LINE
  - · · · - GAS LINE
  - · - · - FIBER OPTIC/PHONE LINE
  - ◆ - SITE ASSESSMENT SOIL SAMPLING LOCATION
  - - PROPOSED GEOPROBE BORING LOCATION
- SCALE:  
1 INCH = 30 FEET
- 0 15 30

NOTE: INFORMATION BASED ON AVAILABLE DATA ACTUAL CONDITIONS MAY DIFFER



# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## APPENDIX B/INVESTIGATION CHECKLIST

SITE INVESTIGATION CHECKLIST  
Revised February 1992 PUBL-SW-115

This checklist was prepared by the Department of Natural Resources. It lists the necessary information to include in a site investigation report, for investigations conducted in accordance with guidelines prepared by the Emergency and Remedial Response Section, of the Bureau of Solid and Hazardous Waste Management, Wisconsin DNR. Sites include those where actions are conducted under the LUST, Spills and Environmental Repair programs. If some of this information is not submitted the report should clearly state why it is omitted. More complete information regarding site investigations is available in the Department's "Guidance on Conducting Environmental Response Actions".

The purpose of the site investigation is to 1) define the extent and degree of contamination and 2) to provide a basis for choosing a remedial action alternative. The narrative portion of the investigation report should clearly address these goals.

The Department strongly recommends that the site investigation report follow the sequence of information listed here. This will allow for a quick completeness check and more timely review of submittals. Incomplete reports will not be reviewed until all the necessary information has been received. The following information should be included in the site investigation, (as appropriate to each case):

I. INTRODUCTION/COVER LETTER

- \_\_\_ 1. Project title
- \_\_\_ 2. Purpose of report and desired department action
- \_\_\_ 3. Client(s)
- \_\_\_ 4. Author(s), with signatures
- \_\_\_ 5. Scope of Services
- \_\_\_ 6. Dates the work was performed
- \_\_\_ 7. Date of report
- \_\_\_ 8. Subcontractors employed by the consultant

II. GENERAL and BACKGROUND INFORMATION

1. General Information

A. Identify the owner/operator and/or person(s) responsible: (include all applicable)

- \_\_\_ 1. name
- \_\_\_ 2. address
- \_\_\_ 3. day phone number
- \_\_\_ 4. contact person (name)
- \_\_\_ 5. address
- \_\_\_ 6. phone number
- \_\_\_ 7. verification of ownership: photocopy of deed or exact legal description of property

B. Specify the site of contamination:

- \_\_\_ 1. name
- \_\_\_ 2. phone number
- \_\_\_ 3. specific location (street corner, miles from an intersection, etc)
  - \_\_\_ a. legal address (street address if applicable, do not supply just a P.O. Box #)
  - \_\_\_ b. location of impacted properties by latitude and longitude, to an accuracy of seconds, at a minimum (preferred method) or State Plane coordinate system
  - \_\_\_ c. location of impacted properties by quarter, quarter, section, township, range, civil township, county, or other locational criteria if site(s) are not within the Public Land Survey system
- \_\_\_ 4. type of operation: gas station, tank farm, private residence, manufacturer, etc.

C. Site Location Maps

- \_\_\_ 1. General Location Map
  - \_\_\_ locate on a USGS topographic base map (include quadrangle name, series and scale)
  - \_\_\_ locate on a plat map, if applicable
- \_\_\_ 2. Local Base Map: the map must be drawn to scale and include the following items. Other features may also be needed:
  - \_\_\_ a. bar scale
  - \_\_\_ b. North arrow
  - \_\_\_ c. legend
  - \_\_\_ d. location of benchmark used
  - \_\_\_ e. origin of horizontal grid system

3. Including Site Specific Features: more than one map may be appropriate, use the local map for the base map (These maps may be used for several purposes.)

- a. location of discharge on site or facility, for example, the location of (former) tank and pump islands and piping
- b. location of all buildings on site
- c. locations of public utilities, appropriately marked
- d. property boundaries
- e. location of all soil borings and wells (monitoring wells and potable wells)
- f. location of soil vapor points
- g. locations of where field screenings and lab confirmation samples were taken
- h. nearby/neighboring structures and private wells (within 1200 feet)
- i. any nearby surface waters (within map scale)
- j. roads and paved areas, and other access areas
- k. known and potential sources of contamination
- l. known and potential receptors
- m. limits of excavation

2. Site Background

A. General Site Information

- 1. site description, including features like:
  - number of tanks/containers
  - volume/size of tanks/containers
  - tank/container contents, past and present
  - tank/container age, installation dates
  - tank/container construction materials
  - presence and type of leak detection
  - presence and type of secondary containment
- 2. general site construction history
- 3. any past reports of spills, or other incidents
- 4. periods of nonoperation
- 5. proximity of sensitive sites such as schools, homes, private or public wells, etc.

B. Description of Discharge Incident

- 1. type of hazardous substances discharged, known or suspected (released, spilled, lost, etc.)
- 2. approximate amounts discharged
- 3. location of impact
- 4. dates of discharge
- 5. local problems associated with discharge, e.g. vapors in homes, well contamination, etc.
- 6. known receptors

C. Impacts

- 1. existing impacts to human health, safety, welfare and the environment
- 2. any impacts to adjacent or nearby buildings, wells or other structures
- 3. names and addresses of owners of adjacent properties, if those properties have been adversely impacted by the hazardous substance discharge

D. Past Activities, Monitoring and Testing

- 1. dates of site activities, duration and type and potential amounts of discharges
- 2. description of emergency actions taken and of interim actions taken, including dates
- 3. record of activities conducted at the site which had potential to cause contamination
- 4. inventory record system data
- 5. summary of monitoring results, including:
  - product monitoring records according to ILHR 10
  - groundwater monitoring
  - surface water monitoring
  - soil monitoring
  - sediment monitoring
  - atmospheric monitoring
- 6. records of testing, repair, removal or replacement, including dates
- 7. tank/container/line integrity testing
  - method
  - testing firm
  - dates
  - results

E. Hazardous Waste Generation

- 1. hazardous waste manifest
- 2. was hazardous waste ever generated or stored on site?

F. Description of Tank/Container and Soil Removal Activities

1. description of soil conditions in the area of the tank/container excavation or in area of discharge
2. volume of (contaminated) soils removed from the excavation
3. location of stockpiled contaminated soils
4. type of impermeable base for stockpiled soils
5. type of impermeable cover for stockpiled soils
6. if excavation was backfilled, what was used as fill?
7. final deposition of soil excavated, where and how were they used? (daily cover, backfill on/off site, roasted, buried, etc.)
8. condition of tanks, lines, pumps (corrosion, visible leaks, etc?)
9. product (other than petroleum) or waste delivery or storage systems

G. Land Use Information

1. current and past land uses of site and neighboring properties
2. description of zoning of property and adjacent properties

3. Environmental Analysis

A. Site Historical Significance

1. impacts or potential impacts to significant historical or archeological features due to any response activities or the discharge itself
2. presence of buildings greater than 50 years old on or next to discharge site

B. Presence of "Sensitive" Environmental Receptors

1. wildlife habitat
2. state or federal threatened or endangered species
3. sensitive or unique ecosystems or species
4. areas of special natural resource interest
5. other surface waters and wetlands, as appropriate

C. Geology (use maps as appropriate)

1. geologic origin, nature and distribution of bedrock
2. geologic origin, nature and distribution of overlying soils
3. thicknesses of various strata (consolidated and unconsolidated)
4. depth to bedrock
5. geophysical characteristics
6. soil types and texture
7. soil descriptions to include:
  - structure
  - mottling
  - voids
  - layering
  - lenses
  - geologic origin
  - Unified Soil System Classification
  - grain size distribution, if applicable
  - evidence of secondary permeability
  - odor, if evident
  - staining, if evident
8. bedrock descriptions, if impacted:
  - rock type
  - grain size
  - bedding thickness
  - presence of fractures
  - orientation of fractures
  - sedimentary structures
  - secondary porosity/solutional features
  - other
9. topography
10. site hydrology, including
  - intermittent and ephemeral streams,
  - drain tile systems,
  - surface waters
  - wetlands
  - location of floodway and floodplain (this may be best located on a site map)

D. Hydrogeology

1. depth to water table
2. flow directions, seasonal variations

- 3. horizontal and vertical gradients
- 4. hydraulic characteristics: (define as field test results or non-field estimates)
  - hydraulic conductivity, variation
  - transmissivity
  - storativity
- 5. aquifer definition:
  - size
  - use
  - presence of aquitards
- 6. local and regional recharge or discharge area(s)
- 7. potentiometric surface
- 8. location, seasonal variation of groundwater divides
- 9. location and extent of perched groundwater
- 10. local and regional groundwater quality
- 11. hydraulic connection between aquifers
- 12. saturated thickness of aquifer
- 13. estimates of flow volume passing below the discharge site/facility (include calculations in the appendices)
- 14. drillers logs which indicated any abnormal drilling difficulties
- 15. isoconcentration maps
- 16. other

### III. RESULTS

#### 1. Contaminant Migration Pathway and Receptor Assessment

##### A. Potential Vapor and Product Migration Pathways (include depth of burial and construction material)

- 1. sewer lines
- 2. storm sewers
- 3. buried power cables
- 4. buried telephone lines
- 5. tile lines
- 6. more permeable soil lenses
- 7. water lines
- 8. road beds
- 9. foundations
- 10. other

##### B. Potential Receptors of Contamination (description of impacts or potential impacts, if applicable)

- 1. buildings on site
- 2. neighboring basements/buildings
- 3. nearby wells (locations must be provided on a map)
- 4. nearby surface waters, including wetlands
- 5. critical habitats
- 6. endangered species
- 7. outstanding resource waters
- 8. exceptional resource waters
- 9. sensitive or unique ecosystems
- 10. other

##### C. Potential Health Impacts

- 1. danger of explosion
- 2. contaminated private wells
- 3. contaminated public water supply wells
- 4. exposure to vapors
- 5. dermal exposure
- 6. other

#### 2. Sampling and Analysis Results (figures and tables should be used, but general trends and the overall evaluation should be in narrative form) Provide units of measurement for all results. Describe or provide the following information for each media impacted:

##### A. soil chemistry results, per parameter, per location

- 1. field screening results with locations identified
- 2. laboratory (confirmation) sample results with locations identified
- 3. any indication of contamination of soils encountered (staining, odor, etc.)

##### B. groundwater sample results, per parameter, per well, over time

- 1. laboratory results
- 2. trends analysis

- \_\_\_ 3. compliance evaluation with NR 140 groundwater standards, if applicable
- C. soil vapor results (define type of survey used)
  - \_\_\_ 1. by parameter
  - \_\_\_ 2. per location
- D. sampling results from other media impacted by the discharge
  - \_\_\_ 1. parameters
  - \_\_\_ 2. locations
- 3. Sampling Methods Used (for each media impacted, lists provided for soil and groundwater only)
  - A. Soils:
    - \_\_\_ 1. description of sample collection method
    - \_\_\_ 2. field screening or analytical instrument type used
      - \_\_\_ lamp strength
      - \_\_\_ calibration
      - \_\_\_ operating procedure
    - \_\_\_ 3. sample container
    - \_\_\_ 4. temperature at which the sample was collected
    - \_\_\_ 5. time allowed for PID or FID samples to achieve at least 70° F, and location
  - B. Groundwater
    - \_\_\_ 1. method and instruments used to obtain sample
    - \_\_\_ 2. any indication of contamination noticed in field
    - \_\_\_ 3. whether the well was purged or not, why and how, and amount removed
    - \_\_\_ 4. drilling method used
    - \_\_\_ 5. monitoring well construction features
    - \_\_\_ 6. abandonment methods
      - \_\_\_ a. boreholes
      - \_\_\_ b. monitoring wells
      - \_\_\_ c. excavations
    - \_\_\_ 7. survey methods
    - \_\_\_ 8. sample container size
    - \_\_\_ 9. sample description
      - \_\_\_ - turbid
      - \_\_\_ - clear
      - \_\_\_ - sheen
      - \_\_\_ - free product
    - \_\_\_ 10. other
  - C. Vapors/Ambient Air
    - \_\_\_ 1. description of sample collection method
    - \_\_\_ 2. field screening, if conducted
    - \_\_\_ 3. sample container
- 4. Quality Control and Quality Assurance
  - A. General QA/QC (for all media impacted)
    - \_\_\_ 1. name and address of laboratory
    - \_\_\_ 2. laboratory certification number
    - \_\_\_ 3. number of blanks, with results:
      - \_\_\_ - field blanks
      - \_\_\_ - trip blanks
      - \_\_\_ - lab spikes
      - \_\_\_ - split samples
      - \_\_\_ - replicate spikes
    - \_\_\_ 4. name and training of person collecting the samples (including certification, if applicable)
  - B. Field Instrument Quality Control (for all media impacted)
    - \_\_\_ 1. instrument make, model and lamp energy
    - \_\_\_ 2. limitations of field screening instruments
      - \_\_\_ - temperature changes
      - \_\_\_ - humidity changes
      - \_\_\_ - other
    - \_\_\_ 3. any repairs to the instrument
    - \_\_\_ 4. field instrument calibration measures conducted
    - \_\_\_ 5. time and frequency or schedule of field instrument calibration
    - \_\_\_ 6. composition of the calibration gas used (calibration product ?)
    - \_\_\_ 7. calibration curves used
    - \_\_\_ 8. correction factor if one was used

- \_\_\_ 9. results of any calibration checks
- \_\_\_ 10. time of day and ambient temperature when calibrations, calibration curves or calibration checks were completed
- \_\_\_ 11. time and temperature that samples were equilibrated if the outside temperature is below 60°F at the time of field analysis

C. Field Sampling and Transportation Quality Control and Assurance (for all media impacted)

- \_\_\_ 1. sample type
- \_\_\_ 2. sample location and associated field and laboratory identification
- \_\_\_ 3. sampling technique used
- \_\_\_ 4. sampling techniques used to minimize exposure of samples to the atmosphere
- \_\_\_ 5. date and time of sampling
- \_\_\_ 6. field preservation performed
- \_\_\_ 7. date and time of preservation or extraction
- \_\_\_ 8. decontamination procedures used during the site investigation
- \_\_\_ 9. deviations from standard operating procedures
- \_\_\_ 10. shipping time and technique

D. Laboratory Receipt and Analysis (for all media impacted)

- \_\_\_ 1. chain of custody forms (4400-151)
- \_\_\_ 2. time and date of receipt of samples by the laboratory
- \_\_\_ 3. sample condition on receipt by the laboratory including
  - the temperature of the samples and
  - whether the samples were properly sealed
- \_\_\_ 4. time and date of analysis
- \_\_\_ 5. method of analysis
- \_\_\_ 6. laboratory detection limit
- \_\_\_ 7. sample results with units of measurement
- \_\_\_ 8. accuracy and precision of replicate spikes
- \_\_\_ 9. results or percent recovery of matrix spikes with every batch of samples not to exceed eight hours

5. Investigative Wastes (for all media impacted, to include but which is not limited to contaminated water from excavations, borings, purge water, rinse waters from decontamination procedures, extra sample)

- \_\_\_ A: analytical results (hazardous determination, if listed?)
- \_\_\_ B: ultimate disposal
- \_\_\_ C: other

IV. SUMMARY AND EVALUATION OF RESULTS (Analysis of Degree and Extent of Contamination)

- \_\_\_ 1. degree and extent of soil contamination
- \_\_\_ 2. degree and extent of groundwater contamination
- \_\_\_ 3. degree and extent of contamination of other media impacted
- \_\_\_ 4. known or potential impacts to receptors, such as water supply wells
- \_\_\_ 4. vapor migration potential
- \_\_\_ 5. impacts from seepage into basements, utility lines, surface waters
- \_\_\_ 6. difficulties experienced during the investigation
- \_\_\_ 7. unanticipated or questionable results
- \_\_\_ 8. details needing emphasis

V. CONCLUSIONS

- \_\_\_ source and type of release defined
- \_\_\_ soil and groundwater contamination adequately defined?
- \_\_\_ further study needed
- \_\_\_ further remediation needed
- \_\_\_ known or potential impacts from the release defined?
- \_\_\_ clean site, ready for case closure
- \_\_\_ other

VI. RECOMMENDATIONS

- \_\_\_ 1. Investigation Incomplete
  - \_\_\_ continued monitoring
  - \_\_\_ additional investigation
- \_\_\_ 2. Remedial Action Alternatives (provide description of alternatives) e.g.:
  - \_\_\_ remediation method (to be) used for contaminated soil



- soil removal, treatment and disposal
- soil venting
- product recovery
- groundwater extraction and treatment
- insitu biological treatment
- other actions (define)

3. Other
- work plans for further action
  - construction proposals for further action
  - pilot study, other treatability studies
  - schedules for further actions
  - required permits
    - air quality
    - wastewater discharge

VII. FIGURES

- 1. Site Maps
  - - location maps (regional and local)
  - - water table and/or potentiometric surface maps
  - - isoconcentration maps
  - - surface water depth maps
  - - bedrock and soil type and distribution maps
- 2. Flow Cross Sections
- 3. Extent of Contamination in Soil
- 4. Extent of Contamination in Groundwater (Isoconcentration)
- 5. Locations of Potential Receptors
- 6. Geologic Cross-Sections
  - a. geologic setting
  - b. boring location
  - c. soil classification
  - d. analytical sampling
  - e. monitoring well locations
  - f. water table
  - g. extent of contaminant plume
  - h. concentrations at referenced date and point
  - i. sampling intervals (for soil and groundwater)
  - j. of excavation walls showing location of field screening and/or analytical results, as appropriate
- 7. Photographs (NO black and white photocopies)

VIII. TABLES

- 1. Groundwater Chemistry Results
- 2. Soil Chemistry Results
- 3. Analytical Methods Used
- 4. Standards for Comparison and Compliance Determinations (Tables with compliance standards should be combined with analytical results for comparison)
- 5. Geologic and Hydrogeologic Results
- 6. Groundwater Elevations
- 7. Screening Results
- 8. Other

IX. APPENDICES (up to the author)

- 1. Table giving data for compounds found, such as:
  - Chemical formula, Molecular weight, Ionic potential, Solubility,
  - Vapor pressure, Henry's Law Constant, Kow
- 2. References used to support methods or provide standards methods, including previous reports
- 3. All raw data
- 4. All documentation on forms: (DNR form number)
  - a. soil boring logs (4400-122)
  - b. monitoring well construction logs (4400-113A)
  - c. soil boring/well abandonment forms (3300-5B)
  - d. chain of custody forms
  - e. lab/chemistry results
  - f. groundwater monitoring well information form (4400-89)
  - g. monitoring well development form (4400-113B)
- 5. Variances (for well construction, hazardous waste storage requirements, etc.)

- \_\_\_ 6. Well logs of all impacted wells and potentially impacted wells within 1200' of the discharge site (locate wells on a map)
- \_\_\_ 7. All calculations and assumptions
- \_\_\_ 8. Landfill receipts for disposed soil
- \_\_\_ 9. Regional hydrogeological information references used

Other information that may be needed includes:

- access
- public information plan
- health and safety plan

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## APPENDIX C/LUST SAMPLING GUIDELINES

LUST and Petroleum Analytical and QA Guidance  
July 1993 Revision

Petroleum Substance Discharged	Analysis of Samples Collected for UST Tank Closure Assessments	Solid Waste Program Requirements for Soils to be landfilled <sup>5</sup>	Site Investigation, Pretreatment and Posttreatment Sample Analysis <sup>11</sup>
Regular Gasoline	GRO <sup>2</sup>	Free Liquids <sup>6</sup> GRO Benzene <sup>7</sup> Pb <sup>7</sup> Haz. Waste Deter. <sup>8</sup>	GRO VOC/PVOC <sup>15</sup> Pb <sup>12</sup>
Unleaded Gasoline; Grades 80 100, and 100 LL (Low Lead) Aviation Fuel	GRO <sup>2</sup>	Free Liquids <sup>6</sup> GRO Benzene <sup>7</sup> Pb <sup>7</sup> Haz. Waste Deter. <sup>8</sup>	GRO PVOC
Diesel; Jet Fuels; and No's 1, 2, and 4 Fuel Oil	DRO <sup>3</sup>	Free Liquids <sup>6</sup> DRO Benzene <sup>7</sup> Haz. Waste Deter. <sup>8</sup>	DRO <sup>3</sup> PVOC PAH <sup>13 14</sup>
Crude Oil; Lubricating Oils; No. 6 Fuel Oil	DRO <sup>3</sup>	Free Liquids <sup>6</sup> DRO Haz. Waste Deter. <sup>8</sup>	DRO <sup>3</sup> PAH <sup>13 14</sup>
Unknown Petroleum	GRO <sup>7</sup> and DRO <sup>3 4</sup>	Free Liquids <sup>6</sup> GRO and DRO Pb, Cd <sup>7</sup> Haz. Waste Deter. <sup>8</sup> CN <sup>19</sup> S <sup>2 10</sup>	GRO and DRO <sup>3 4</sup> VOC/PVOC <sup>15</sup> PAH <sup>13 14</sup> Pb, Cd <sup>12</sup>
Waste Oil	DRO <sup>3</sup>	Free Liquids <sup>6</sup> DRO Pb, Cd <sup>7</sup> Haz. Waste Deter. <sup>8</sup> CN <sup>19</sup> S <sup>2 10</sup>	DRO <sup>3</sup> VOC/PVOC <sup>15</sup> PAH <sup>13 14</sup> PCBs <sup>16</sup> Pb, Cd <sup>12</sup>

Abbreviations:

GRO - Gasoline Range Organics, Determined by the Wisconsin Modified GRO Method

DRO - Diesel Range Organics, Determined by the Wisconsin Modified DRO Method

VOC - Volatile Organic Compounds (See Section 11.1 for a list of VOC compounds)

PVOC - Petroleum Organic Compounds ( See Section 11.2 for a list of PVOC compounds)

PAH - Polynuclear Aromatic Hydrocarbons (See Section 11.3 for a list of the PAH compounds)

PCBs - Polychlorinated Biphenyls

Pb - Lead

## SYNERGY ENVIRONMENTAL LAB – Sample Bottle Requirements

**TABLE 1  
SAMPLE & PRESERVATION REQUIREMENTS FOR WATER and  
DRINKING WATER SAMPLES**

Test	Original Sample Container	Preserved	Holding Time to Analysis
<b>WET CHEMISTRY</b>			
Alkalinity SM2320B/EPA 310.2	250 mL HDPE	4°C	14 days
Ammonia EPA 350.1	250 mL HDPE	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
BOD, cBOD SM5210B	500 ml HDPE	4°C	48 hrs.
COD EPA 410.4	500 mL HDPE	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
Chloride EPA 300.0/EPA 325.2	250 mL HDPE	4°C	28 days
Cyanide SW846 9012A/SM4500-CN-C	1000 mL HDPE	4°C, pH>12 with NaOH	14 days
Flashpoint SW846 1010	250 mL HDPE	4°C	28 days
Fluoride EPA 300.0	250 mL HDPE	4°C	28 days
Hardness SW846 6010B	250 mL HDPE	4°C, pH<2 with HNO <sub>3</sub>	180 days
TKN EPA 351.2	1 Liter HDPE	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
Nitrate EPA 300.0	250 mL HDPE	4°C	48 hours
Nitrate+Nitrite EPA 300.0	250 mL HDPE	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
Nitrite EPA 300.0	250 mL HDPE	4°C	48 hours
Oil & Grease EPA 1664	1 Liter Glass	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
Organic Carbon SW846 9060/ EPA 415.1	40 ml Glass	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub> or HCL	28 days
Phenol, Total EPA 420.1	1 Liter Glass	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
Phosphorus, Total EPA 365.3	250 mL HDPE	4°C, pH<2 with H <sub>2</sub> SO <sub>4</sub>	28 days
Sulfate EPA 300.0	250 mL HDPE	4°C	28 days
Total Dissolved Solids EPA 160.1	250 ml HDPE	4°C	7 days
Total Solids EPA 160.3	250 ml HDPE	4°C	7 days
Total Suspended Solids EPA 160.2	250 mL HDPE	4°C	7 days
<b>METALS</b>			
Metals	250 mL HDPE	4°C, pH<2 with HNO <sub>3</sub>	6 months
Mercury SW8467470/EPA 245.1	250 mL HDPE	4°C, pH<2 with HNO <sub>3</sub>	28 days
<b>ORGANICS</b>			
Semivolatiles SW846 8270C	1 Liter amber glass, collect 2 for one of the samples submitted .	4°C	7 days extr. 40 days following extr
PAH SW846 8270C	1 Liter amber glass, collect 2 for one of the samples submitted	4°C	7 days extr. 40 days following extr
PCB SW846 8082	1 Liter amber glass, collect 2 for one of the samples submitted.	4°C	7 days extr. 40 days following extr
DRO, Modified DNR Sep 95	1 Liter amber glass with Teflon lined cap	4°C, 5 mL 50% HCl	7 days extr. 40 days following extr
VOC'S SW846 8260B/EPA524.2	(3) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl, No Headspace	14 days
GRO/VOC	(4) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days
GRO, Modified DNR Sep 95	(2) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days
GRO/PVOC	(2) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days
PVOC	(2) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days

All samples are to be cooled to 4°C until tested.

HDPE = High Density Polyethylene.

## SYNERGY ENVIRONMENTAL LAB – Sample Bottle Requirements

**TABLE 2  
SAMPLE & PRESERVATION REQUIREMENTS FOR SOIL SAMPLES**

Test	Original Sample Container	Preserved	Holding Times from Date and Time of Collection			
			Solvent Addition	Shipping	Extraction	Analysis
<b>METALS</b>						
Metals	2 oz glass or soil cup	4°C	NA	NA	NA	180 days
Mercury SW846 7471	2 oz glass or soil cup	4°C	NA	NA	NA	28 days
Chromium Hexavalent SM3500-Cr	2 oz glass or soil cup	4°C	NA	NA	NA	24 hours
<b>ORGANICS</b>						
Any combinations of GRO, VOC, PVOC	1- tared VOC vial with 10 mls methanol, 13 grams of soil collected with syringe	4°C, 1:1 with methanol	Immediately	4 days	21 days	21 days
DRO, Modified	1- tared VOC vial, 13 grams of soil collected with syringe jar	4°C, Hexane	10 days	4 days	47 days	47 days
PAH, SW846 8270C	2 oz glass untared	4°C	NA	NA	14 days	40 days
Semivolatile SW846 8270C	2 oz glass untared	4°C	NA	NA	14 days	40 days
PCB SW846 8082	2 oz glass untared	4°C	NA	NA	14 days	40 days

**All samples are to be cooled to 4°C until tested.**

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## APPENDIX D/WDNR DOCUMENTS

## HAZARDOUS SUBSTANCE/WASTE RELEASES:

## INTERIM SOIL CLEANUP GUIDELINES--PETROLEUM CONTAMINATION

## DNR Closeout Action

BTEX (1)	GRO/DRO	Soil Type (2)	Soils Accessible	Soils Inaccessible or accessible and not technically and economically feasible
<= NR 720	<= 100 ppm	Permeable (K>10 E-6 cm/s)	Close	Close
<= NR 720	<= 250 ppm	Less Permeable (K<=10 E-6 cm/s)	Close	Close
<= NR 720 or > NR 720	> applic. GRO/DRO		Require additional work	Close with consideration of deed instrument according to guidelines

(1) BTEX: proposed criteria developed in preparation of NR 720:

Benzene 5.5 ug/kg  
Toluene 1500 ug/kg  
Ethylbenzene 2900 ug/kg  
Xylenes 4100 ug/kg  
1,2-DCA 4.9 ug/kg

(2) K: Saturated hydraulic conductivity



(b) No soil contamination is present at the site that exceeds any of the soil screening levels in Table 1.

Table 1  
Indicators of Residual Petroleum Product in Soil Pores

	<u>Soil Screening</u> <u>Levels (mg/kg)</u>
<u>Benzene</u>	<u>8.5</u>
<u>1,2-DCA</u>	<u>0.6</u>
<u>Ethylbenzene</u>	<u>4.6</u>
<u>Toluene</u>	<u>38</u>
<u>Xylene</u>	<u>42</u>
<u>1,2,4 - Trimethylbenzene</u>	<u>83</u>
<u>1,3,5 - Trimethylbenzene</u>	<u>11</u>
<u>Naphthalene</u>	<u>2.7</u>

(c) There is no soil contamination within 4 feet of the ground surface that exceeds any of the direct contact soil contaminant concentrations for the substances listed in Table 2.

Table 2  
Protection of Human Health from Direct Contact with  
Contaminated Soil

<u>Substance</u>	<u>Soil Contaminant</u> <u>Concentrations</u> <u>(Top 4 ft of the soil) (mg/kg)</u>
<u>Benzene</u>	<u>1.10</u>
<u>1,2-Dichloroethane (DCA)</u>	<u>0.54</u>

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

(22) "Wastewater and sludge storage or treatment lagoon" means a natural or man-made containment structure, constructed primarily of earthen materials for the treatment or storage of wastewater or sludge, which is not a land disposal system.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; cr. (1m), am (7), (17) and (18), Register, October, 1988, No. 394, eff. 11-1-88; am (6), cr. (20h) and (20m), Register, March, 1994, No. 459, eff. 4-1-94; cr. (1s), (10e), (10s), (20k), r. and recr. (12), (13), Register, August, 1995, No. 476, eff. 9-1-95; cr. (14m), Register, October, 1996, No. 490, eff. 11-1-96; am (20), Register, December, 1998, No. 516, eff. 1-1-99; correction in (9) made under s. 13.93 (2m) (b) 7, Stats., Register, April, 2001, No. 544; CR.02-134: cr. (1u), (1w), (1y) and (20s) Register June 2003 No. 570, eff. 7-1-03.

## Subchapter II — Groundwater Quality Standards

**NR 140.10 Public health related groundwater standards.** The groundwater quality standards for substances of public health concern are listed in Table 1.

Note: For all substances that have carcinogenic, mutagenic or teratogenic properties or interactive effects, the preventive action limit is 10% of the enforcement standard. The preventive action limit is 20% of the enforcement standard for all other substances that are of public health concern. Enforcement standards and preventive action limits for additional substances will be added to Table 1 as recommendations are developed pursuant to ss. 160.07, 160.13 and 160.15, Stats.

**Table 1**  
**Public Health Groundwater Quality Standards**

Substance <sup>1</sup>	Enforcement Standard (micrograms per liter — except as noted)	Preventive Action Limit (micrograms per liter — except as noted)
Acetochlor	7	0.7
Acetochlor ethane sulfonic acid + oxanilic acid (Acetochlor — ESA + OXA)	230	46
Acetone	9 mg/l	1.8 mg/l
Alachlor	2	0.2
Alachlor ethane sulfonic acid (Alachlor — ESA)	20	4
Aldicarb	10	2
Aluminum	200	40
Ammonia (as N)	9.7 mg/l	0.97 mg/l
Antimony	6	1.2
Anthracene	3000	600
Arsenic	10	1
Asbestos	7 million fibers per liter (MFL)	0.7 MFL
Atrazine, total chlorinated residues	3 <sup>2</sup>	0.3 <sup>2</sup>
Bacteria, Total Coliform	0 <sup>3</sup>	0 <sup>3</sup>
Barium	2 milligrams/liter (mg/l)	0.4 mg/l
Bentazon	300	60
Benzene	5	0.5
Benzo(b)fluoranthene	0.2	0.02
Benzo(a)pyrene	0.2	0.02
Beryllium	4	0.4
Boron	1000	200
Bromodichloromethane	0.6	0.06
Bromoform	4.4	0.44
Bromomethane	10	1
Butylate	400	80
Cadmium	5	0.5
Carbaryl	40	4
Carbofuran	40	8
Carbon disulfide	1000	200
Carbon tetrachloride	5	0.5
Chloramben	150	30
Chlordane	2	0.2
Chlorodifluoromethane	7 mg/l	0.7 mg/l
Chloroethane	400	80
Chloroform	6	0.6
Chlorpyrifos	2	0.4
Chloromethane	30	3
Chromium (total)	100	10
Chrysene	0.2	0.02

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Table 1 -- Continued  
Public Health Groundwater Quality Standards

Substance <sup>1</sup>	Enforcement Standard (micrograms per liter -- except as noted)	Preventive Action Limit (micrograms per liter -- except as noted)
Cobalt	40	8
Copper	1300	130
Cyanazine	1	0.1
Cyanide, free <sup>4</sup>	200	40
Dacthal	70	14
1,2-Dibromoethane (EDB)	0.05	0.005
Dibromochloromethane	60	6
1,2-Dibromo-3-chloropropane (DBCP)	0.2	0.02
Dibutyl phthalate	1000	100
Dicamba	300	60
1,2-Dichlorobenzene	600	60
1,3-Dichlorobenzene	600	120
1,4-Dichlorobenzene	75	15
Dichlorodifluoromethane	1000	200
1,1-Dichloroethane	850	85
1,2-Dichloroethane	5	0.5
1,1-Dichloroethylene	7	0.7
1,2-Dichloroethylene (cis)	70	7
1,2-Dichloroethylene (trans)	100	20
2,4-Dichlorophenoxyacetic Acid (2,4-D)	70	7
1,2-Dichloropropane	5	0.5
1,3-Dichloropropene (cis/trans)	0.4	0.04
Di (2-ethylhexyl) phthalate	6	0.6
Dimethenamid/Dimethenamid-P	50	5
Dimethoate	2	0.4
2,4-Dinitrotoluene	0.05	0.005
2,6-Dinitrotoluene	0.05	0.005
Dinitrotoluene, Total Residues <sup>5</sup>	0.05	0.005
Dinoseb	7	1.4
1,4-Dioxane	3	0.3
Dioxin (2, 3, 7, 8-TCDD)	0.00003	0.000003
Endrin	2	0.4
EPTC	250	50
Ethylbenzene	700	140
Ethyl ether	1000	100
Ethylene glycol	14 mg/l	2.8 mg/l
Fluoranthene	400	80
Fluorene	400	80
Fluoride	4 mg/l	0.8 mg/l
Fluorotrichloromethane	3490	698
Formaldehyde	1000	100
Heptachlor	0.4	0.04
Heptachlor epoxide	0.2	0.02
Hexachlorobenzene	1	0.1
N-Hexane	600	120
Hydrogen sulfide	30	6
Lead	15	1.5
Lindane	0.2	0.02
Manganese	300	60
Mercury	2	0.2

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Table 1 – Continued  
Public Health Groundwater Quality Standards

Substance <sup>1</sup>	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
Methanol	5000	1000
Methoxychlor	40	4
Methylene chloride	5	0.5
Methyl ethyl ketone (MEK)	4 mg/l	0.8 mg/l
Methyl isobutyl ketone (MIBK)	500	50
Methyl tert-butyl ether (MTBE)	60	12
Metolachlor/s-Metolachlor	100	10
Metolachlor ethane sulfonic acid + oxanilic acid (Metolachlor – ESA + OXA)	1.3 mg/l	0.26 mg/l
Metribuzin	70	14
Molybdenum	40	8
Monochlorobenzene	100	20
Naphthalene	100	10
Nickel	100	20
Nitrate (as N)	10 mg/l	2 mg/l
Nitrate + Nitrite (as N)	10 mg/l	2 mg/l
Nitrite (as N)	1 mg/l	0.2 mg/l
N-Nitrosodiphenylamine	7	0.7
Pentachlorophenol (PCP)	1	0.1
Perchlorate	1	0.1
Phenol	2 mg/l	0.4 mg/l
Picloram	500	100
Polychlorinated biphenyls (PCBs)	0.03	0.003
Prometon	100	20
Propazine	10	2
Pyrene	250	50
Pyridine	10	2
Selenium	50	10
Silver	50	10
Simazine	4	0.4
Styrene	100	10
Tertiary Butyl Alcohol (TBA)	12	1.2
1,1,1,2-Tetrachloroethane	70	7
1,1,2,2-Tetrachloroethane	0.2	0.02
Tetrachloroethylene	5	0.5
Tetrahydrofuran	50	10
Thallium	2	0.4
Toluene	800	160
Toxaphene	3	0.3
1,2,4-Trichlorobenzene	70	14
1,1,1-Trichloroethane	200	40
1,1,2-Trichloroethane	5	0.5
Trichloroethylene (TCE)	5	0.5
2,4,5-Trichlorophenoxy-propionic acid (2,4,5-TP)	50	5
1,2,3-Trichloropropane	60	12
Trifluralin	7.5	0.75
Trimethylbenzenes (1,2,4- and 1,3,5- combined)	480	96
Vanadium	30	6

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Table 1 -- Continued  
Public Health Groundwater Quality Standards

Substance <sup>1</sup>	Enforcement Standard (micrograms per liter -- except as noted)	Preventive Action Limit (micrograms per liter -- except as noted)
Vinyl chloride	0.2	0.02
Xylene <sup>6</sup>	2 mg/l	0.4 mg/l

<sup>1</sup> Appendix I contains Chemical Abstract Service (CAS) registry numbers, common synonyms and trade names for most substances listed in Table 1.

<sup>2</sup> Total chlorinated atrazine residues includes parent compound and the following metabolites of health concern: 2-chloro-4-amino-6-isopropylamino-s-triazine (formerly deethylatrazine), 2-chloro-4-amino-6-ethylamino-s-triazine (formerly deisopropylatrazine) and 2-chloro-4,6-diamino-s-triazine (formerly diaminoatrazine).

<sup>3</sup> Total coliform bacteria may not be present in any 100 ml sample using either the membrane filter (MF) technique, the presence-absence (P-A) coliform test, the minimal medium ONPG-MUG (MMO-MUG) test or not present in any 10 ml portion of the 10-tube multiple tube fermentation (MTF) technique.

<sup>4</sup> "Cyanide, free" refers to the simple cyanides (HCN, CN<sup>-</sup>) and/or readily dissociable metal-cyanide complexes. Free cyanide is regulatorily equivalent to cyanide quantified by approved analytical methods for "amenable cyanide" or "available cyanide".

<sup>5</sup> Dinitrotoluene, Total Residues includes the dinitrotoluene (DNT) isomers: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT and 3,5-DNT.

<sup>6</sup> Xylene includes meta-, ortho-, and para-xylene combined.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 1, Register, October, 1988, No. 394, eff. 11-1-88; am. table 1, Register, September, 1990, No. 417, eff. 10-1-90; am. Register, January, 1992, No. 433, eff. 2-1-92; am. Table 1, Register, March, 1994, No. 459, eff. 4-1-94; am. Table 1, Register, August, 1995, No. 476, eff. 9-1-95; am. Table 1, Register, December, 1998, No. 516, eff. 1-1-99; am. Table 1, boron, Register, December, 1998, No. 516, eff. 12-31-99; am. Table 1, Register, March, 2000, No. 531, eff. 4-1-00; CR 03-063: am. Table 1, Register February 2004 No. 578, eff. 3-1-04; CR 02-095: am. Table 1, Register November 2006 No. 611, eff. 12-1-06; reprinted to correct errors in Table 1, Register January 2007 No. 613; CR 07-034: am. Table 1 Register January 2008 No. 625, eff. 2-1-08; CR 09-102: am. Table 1 Register December 2010 No. 660, eff. 1-1-11.

**NR 140.12 Public welfare related groundwater standards.** The groundwater quality standards for substances of public welfare concern are listed in Table 2.

Note: For each substance of public welfare concern, the preventive action limit is 50% of the established enforcement standard.

Table 2  
Public Welfare Groundwater Quality Standards

Substance	Enforcement Standard (milligrams per liter -- except as noted)	Preventive Action Limit (milligrams per liter -- except as noted)
Chloride	250	125
Color	15 color units	7.5 color units
Foaming agents MBAS (Methylene-Blue Active Substances)	0.5	0.25
Iron	0.3	0.15
Manganese	0.05	0.025
Odor	3 (Threshold Odor No.)	1.5 (Threshold Odor No.)
Sulfate	250	125
Zinc	5	2.5

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 2, Register, October, 1990, No. 418, eff. 11-1-90; am. Table 2, Register, March, 1994, No. 459, eff. 4-1-94.

**NR 140.14 Statistical procedures.** (1) If a preventive action limit or an enforcement standard for a substance listed in Table 1 or 2, an alternative concentration limit issued in accordance with s. NR 140.28 or a preventive action limit for an indicator parameter established according to s. NR 140.20 (2) is attained or exceeded at a point of standards application:

(a) The owner or operator of the facility, practice or activity at which a standard is attained or exceeded shall notify the appropriate regulatory agency that a standard has been attained or exceeded; and

(b) The regulatory agency shall require a response in accordance with the rules promulgated under s. 160.21, Stats. No response shall be required if it is demonstrated to the satisfaction of the appropriate regulatory agency that a scientifically valid determination cannot be made that the preventive action limit or enforcement standard for a substance in Table 1 or 2 has been attained or exceeded based on consideration of sampling procedures or laboratory precision and accuracy, at a significance level of 0.05.

(2) The regulatory agency shall use one or more valid statistical procedures to determine if a change in the concentration of a substance has occurred. A significance level of 0.05 shall be used for all tests.

(3) In addition to sub. (2), the following applies when a preventive action limit or enforcement standard is equal to or less than the limit of quantitation:

(a) If a substance is not detected in a sample, the regulatory agency may not consider the preventive action limit or enforcement standard to have been attained or exceeded.

(b) If the preventive action limit or enforcement standard is less than the limit of detection, and the concentration of a substance is reported between the limit of detection and the limit of quantitation, the regulatory agency shall consider the preventive action limit or enforcement standard to be attained or exceeded only if:

1. The substance has been analytically confirmed to be present in the same sample using an equivalently sensitive analytical method or the same analytical method, and

2. The substance has been statistically confirmed to be present above the preventive action limit or enforcement standard, determined by an appropriate statistical test with sufficient samples at a significance level of 0.05.

(c) If the preventive action limit or enforcement standard is between the limit of detection and the limit of quantitation, the regulatory agency shall consider the preventive action limit or

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## APPENDIX E/PROJECT DOCUMENTS



# Moraine Environmental, Inc.

Environmental Management Services

1402 7<sup>th</sup> Avenue, Grafton, Wisconsin 53024-2330

Phone: (262) 377-9060 Fax: (262) 377-9770 Toll Free: 1(800) 920-2205

[www.moraineenvironmental.com](http://www.moraineenvironmental.com) E-mail - moraine@execpc.com

## Fax Transmission

From: Thomas C. Sweet

# Pgs: 9

Date: 5/19/05

To: Vicky STOUALL

Fax #: 414. 263. 8483

Company: WDNK

Phone #:

Re: Release Notification

RECEIVED

JUN 12 2007

ERS DIVISION

Hi Vicky:

Please call with questions. This one is pretty straight forward.

Thanks

TC

FID# 34113630  
 BIRTS# 03-41-543343

State of Wisconsin  
 Department of Natural Resources

Hazardous Substance Release Fax Notification  
 (Non-Emergency Only)

Form 4400-225 (11/02) Page 1 of 2

Emergency Releases / Spills must be reported via the 24-hour Hotline: 1-800-943-0003

Notice: Hazardous substance discharges must be reported immediately according to the "Spills Law", s. 292.11 Wis. Stats., Section NR 706.05(1)(b), Wis. Adm. Code, requires that hazardous substance discharges are to be reported by one of three methods: telephoning the Department (toll free Spill Hotline number above), telefaxing a report to the Department or visiting a Department office in person. If you choose to notify the Department by telefax, you should use this form to be sure that all necessary information is included. However use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating ch. 292 Wis. Stats., shall be no less than \$10 nor more than \$5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).  
 Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. TYPE or PRINT LEGIBLY. FAX it to the appropriate WDNR region (see next page) IMMEDIATELY upon discovery of a potential release from (check one):

- Underground Petroleum Storage Tank System
- Aboveground Petroleum Storage Tank System
- Dry Cleaner Facility (DERP eligibility based on:  Facility owner/operator  Property owner of licensed facility)
- Other - Describe:

TO WDNR, ATTN: R & R Program Assistant <i>Vicky Stovall</i>		(Area Code) FAX Number <i>414 263-8483</i>	
1. Discharge reported by:			
Name <i>Tom Sweet</i>		Firm <i>MORAINES ENVIRONMENTAL, INC</i>	
Mailing Address <i>1402 7th Avenue, Grafton, WI 53024-2330</i>		Date FAXed to WDNR <i>5/19/05</i>	
		(Area Code) Phone Number <i>262-377-9060</i>	
2. Site Information:			
Name of site at which discharge occurred. Include local name of site/business, <u>not</u> responsible party name, unless a residence / vacant property <i>Kipp's Auto &amp; Towing Service</i>			
Location: Include street address, <u>not</u> PO Box. If no street address, describe as precisely as possible, e.g., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60 <i>5507 W. Hampton Avenue</i>			
Municipality (City, Village, Township) Specify municipality in which the site is located, <u>not</u> mailing address/city <i>M. Lincoln, Wisconsin 53218</i>			
County: <i>M. Lincoln</i>	Legal Description: <i>NE 1/4, NW 1/4, Section 2, Tn 7N, Range 21(E) or W: EAST</i>		
3. Responsible Party (RP) and/or RP Representatives:			
Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary <i>Allen Kipp</i>			
<input checked="" type="checkbox"/> Reported in compliance with s. 292.11(2), Wis. Stats., by a local government exempt from liability under s.292.11(9)(e), Wis. Stats. For more information see <a href="http://www.dnr.state.wi.us/orq/law/rr/liability/muni_1.html">http://www.dnr.state.wi.us/orq/law/rr/liability/muni_1.html</a>			
Contact Person Name (if different) <i>SAME</i>		Phone Number <i>414-527-3417</i>	
Mailing Address <i>SAME</i>	City <i>SAME</i>	State <i>Same</i>	ZIP Code <i>Same</i>



State of Wisconsin  
Department of Natural Resources

Hazardous Substance Release Fax Notification  
(Non-Emergency Only)

Form 4400-225 (11/02) Page 2 of 2

**4. Hazardous Substance Impact Information**

Identify hazardous substance discharged (check all that apply):

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Ammonia                    | <input type="checkbox"/> Hydrocarbon-Unknown Type         | <input type="checkbox"/> PCB's                                 |
| <input type="checkbox"/> Arsenic                    | <input type="checkbox"/> Kerosene                         | <input type="checkbox"/> Petroleum-Unknown Type                |
| <input type="checkbox"/> Chlorinated Solvents       | <input type="checkbox"/> Leachate                         | <input type="checkbox"/> PERC                                  |
| <input type="checkbox"/> Chromium                   | <input type="checkbox"/> Lead                             | <input type="checkbox"/> Pesticides                            |
| <input type="checkbox"/> Cyanide                    | <input type="checkbox"/> MTBE-Methyl Tertiary Butyl Ether | <input type="checkbox"/> RCRA Hazardous Waste                  |
| <input type="checkbox"/> Diesel                     | <input type="checkbox"/> Mercury                          | <input type="checkbox"/> SVOC (Semi-volatile Organic Compound) |
| <input type="checkbox"/> Fertilizer                 | <input type="checkbox"/> Metals (specify): _____          | <input type="checkbox"/> Stoddard Solvents                     |
| <input type="checkbox"/> Fuel Oil                   | <input type="checkbox"/> Milk                             | <input type="checkbox"/> Transformer Fluid                     |
| <input type="checkbox"/> Gasoline-Lead Unknown      | <input type="checkbox"/> Oil & Grease                     | <input type="checkbox"/> Unknown                               |
| <input checked="" type="checkbox"/> Gasoline-Leaded | <input type="checkbox"/> Other (specify): _____           | <input type="checkbox"/> VOC's                                 |
| <input type="checkbox"/> Gasoline-Unleaded          | <input type="checkbox"/> PAH's                            | <input checked="" type="checkbox"/> Waste Oil                  |
| <input type="checkbox"/> Herbicide                  | <input type="checkbox"/> Paint (oil based)                |  |
| <input type="checkbox"/> Hydraulic Oil              | <input type="checkbox"/> Paint (latex)                    |  |

Impacts to the environment (enter "K" for known/confirmed or "P" for potential for all that apply)

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Air Contamination                       | <input type="checkbox"/> Contamination in Row of Way          | <input type="checkbox"/> Sanitary Sewer Contamination  |
| <input type="checkbox"/> Co-contamination                        | <input type="checkbox"/> Direct Contact                       | <input checked="" type="checkbox"/> Soil Contamination |
| <input type="checkbox"/> Concrete/Asphalt                        | <input type="checkbox"/> Expanding Plume                      | <input type="checkbox"/> Storm Sewer Contamination     |
| <input type="checkbox"/> Contained/Recovered                     | <input type="checkbox"/> Fire Explosion Threat                | <input type="checkbox"/> Surface Water Contamination   |
| <input type="checkbox"/> Contamination Within 1 Meter of Bedrock | <input type="checkbox"/> Free Product                         | <input type="checkbox"/> Within 100 ft of Private Well |
| <input type="checkbox"/> Contaminated Private Well               | <input checked="" type="checkbox"/> Groundwater Contamination | <input type="checkbox"/> Within 1000 ft of Public Well |
| <input type="checkbox"/> Contaminated Public Well                | <input type="checkbox"/> Off-Site Contamination               |  |
| <input type="checkbox"/> Contamination in Fractured Bedrock      | <input type="checkbox"/> Other                                |  |

Contamination was discovered as a result of:

- |  |   |                   |
|--|---|-------------------|
| <input type="checkbox"/> Tank closure assessment | <input checked="" type="checkbox"/> Site assessment | Other - Describe: |
| Date   | Date <u>5/6/05</u>                                  | Date              |

Lab results:

- Lab results will be faxed upon receipt  
 Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

*Complete NR 700 site assessment will be conducted to determine severity and extent, from underground tank system*

FAX numbers to report non-emergency releases in DNR's five regions are as follows:

**Northeast Region (920-492-5859); Attention - RR Program Assistant:**

Brown, Calumet, Door, Fond du Lac (*except City of Waupun - see South Central Region*), Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, Winnebago Counties

**Northern Region (715-365-8932); Attention - RR Program Assistant:**

Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn Counties

**South Central Region (608-275-3338); Attention - RR Program Assistant:**

Columbia, Dane, Dodge, Fond du Lac (*City of Waupun only*), Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk Counties

**Southeast Region (414-263-8483); Attention - RR Program Assistant:**

Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha Counties

**West Central Region (715-839-6076); Attention - RR Program Assistant:**

Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood Counties

(Please Print Legibly)  
 Company Name: MORaine Environmental  
 Branch or Location: Grafton  
 Project Contact: Tom Sweet  
 Telephone: 262-377-9060  
 Project Number: 2940  
 Project Name: Kipps Auto & Towing Service  
 Project State: Wis.  
 Sampled By (Print): Tom Sweet  
 PO #: None



✓LS  
 1241 Bellevue St., Suite 9  
 Green Bay, WI 54302  
 920-469-2436  
 Fax 920-469-8827

**CHAIN OF CUSTODY** NO. **119059**

\*Preservation Codes  
 A=None B=HCL C=H2SO4 D=HNO3 E=EnCore F=Methanol G=NaOH  
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Filtered? (YES/NO) N N N  
 PRESERVATION CODE: E A NA

ANALYSES REQUESTED  
GR0  
DE0  
Mixture Calc

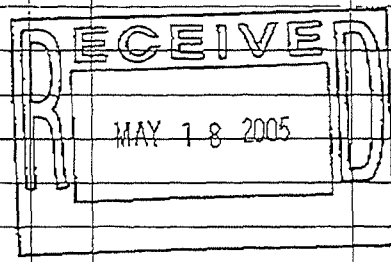
TOTAL # OF BOTTLES SENT

Page 1 of 1  
 Quote #: -  
 Mail Report To: Tom Sweet  
 Company: MORaine Environmental  
 Address: 1402 7th Ave  
Grafton, WI 53024  
 Invoice To: same  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Mail Invoice To: \_\_\_\_\_

Data Package Options - (please circle if requested)  
 Sample Results Only (no QC)  
 EPA Level II (Subject to Surcharge)  
 EPA Level III (Subject to Surcharge)  
 EPA Level IV (Subject to Surcharge)

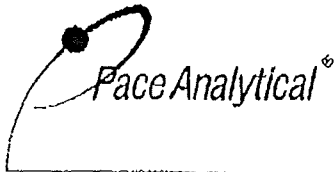
Regulatory Program: UST RCSA SDWA NPDES CERCLA  
 Matrix Codes: W=Water S=Soil A=Air C=Charcoal B=Slots SI=Sludge

LABORATORY ID (Lab Use Only)	FIELD ID	COLLECTION		MATRIX	ANALYSES REQUESTED							TOTAL # OF BOTTLES SENT	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	
		DATE	TIME		A	B	C	D	E	F	G				
001	S-1-3' <u>west</u> of Fuel Island - 7' by 5'	5/6	7:00	S	X	X	X						3	1-4oz poly <sup>A</sup> , 2-2oz <sup>AF</sup>	



Rush Turnaround Time Requested (TAT) - Prelim (Rush TAT subject to approval/surcharge) Date Needed: _____ Transmit Prelim Rush Results by (circle): Phone Fax E-Mail Phone #: _____ Fax #: _____ E-Mail Address: _____	Relinquished By: <u>Tom Sweet</u> Date/Time: <u>5/8/05 9:30 AM</u>	Received By: <u>Bill Nottmeyer</u> Date/Time: <u>5/9/05 11:05</u>	En Chem Project No. <u>859121</u>
	Relinquished By: <u>Bill Nottmeyer</u> Date/Time: <u>5/9/05 1:15</u>	Received By: <u>DUNHAM</u>	Sample Receipt Temp. <u>201</u>
	Relinquished By: <u>DUNHAM</u> Date/Time: <u>5-10-05 08:50</u>	Received By: <u>Shirley Bussard</u> Date/Time: <u>5-10-05 08:50</u>	Sample Receipt pH (Wet/Media) <u>NA</u>
	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Cooler Custody Seal
Samples on HOLD are subject to special pricing and release of liability	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Present / Not Present <u>Present</u>
			Intact / Not Intact

05-19-'05 09:44 FROM-Moraine Envir. 1-262-377-9770 T-441 P004/009 F-931



1241 Bellevue Street, Suite 9  
Green Bay, WI 54302  
920-469-2436, Fax: 920-469-8827

**Analytical Report Number: 859121**

Client: MORaine ENVIRONMENTAL, INC

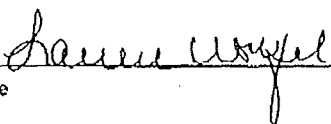
Lab Contact: Laurie Woelfel

Project Name: KIPPS AUTO & TOWING SERVICE

Project Number: 2940

Lab Sample Number	Field ID	Matrix	Collection Date
859121-001	S-1-3' WEST OF FUEL ISLA	SOIL	05/06/05

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Approval Signature 

Date 5/16/05

**Pace Analytical  
Services, Inc.**

**Analytical Report Number: 859121**

1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2438

Client : MORaine ENVIRONMENTAL, INC  
Project Name : KIPPS-AUTO & TOWING SERVICE  
Project Number : 2940  
Field ID : S-1-3' WEST OF FUEL ISLAND-7' BGS

Matrix Type : SOIL  
Collection Date : 05/06/05  
Report Date : 05/16/05  
Lab Sample Number : 859121-001

**INORGANICS**

Test	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Percent Solids	85.3				1	%		05/11/05	SM M2540G	SM M2540G

**DIESEL RANGE ORGANICS**

Preservation Date: 05/12/05      Prep Date: 05/12/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Diesel Range Organics	15			3.0	1	mg/kg		05/15/05	WI MOD DRO	WI MOD DRO
DRO Blank	< 5.0			5.0	1	mg/kg		05/15/05	WI MOD DRO	WI MOD DRO
DRO Blank Spike	94				1	%Recov		05/15/05	WI MOD DRO	WI MOD DRO
DRO Blank Spike Duplicate	87				1	%Recov		05/15/05	WI MOD DRO	WI MOD DRO

**GASOLINE RANGE ORGANICS**

Prep Date: 05/12/05

Analyte	Result	LOD	LOQ	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
Gasoline Range Organics	69			2.9	50	mg/kg		05/13/05	WI MOD GRO	WI MOD GRO
GRO Blank	< 2.5			2.5	50	mg/kg		05/13/05	WI MOD GRO	WI MOD GRO
GRO Blank Spike	103				1	%Recov		05/13/05	WI MOD GRO	WI MOD GRO
GRO Blank Spike Duplicate	108				1	%Recov		05/13/05	WI MOD GRO	WI MOD GRO

**Pace Analytical  
Services, Inc.**1241 Bellevue Street  
Green Bay, WI 54302  
920-469-2436  
Fax: 920-469-8827

Lab Number	TestGroupID	Field ID	Comment
859121-001	DRO-S	S-1-3' WEST	Front eluting peaks were present along with diesel peaks.
859121-001	GRO-S-ME	S-1-3' WEST	Early and late eluting peaks were present outside the window of analysis.

**Pace Analytical  
Services, Inc.**

**Analysis Summary by Laboratory**

1241 Bellevue Street  
Green Bay, WI 54302

859121-001

Test Group Name

DIESEL RANGE ORGANICS	B
GASOLINE RANGE ORGANICS	G
PERCENT SOLIDS	B

Code	Facility	Address	WI Certification
B	Green Bay Lab (Bellevue St)	1241 Bellevue Street, Suite 9 Green Bay, WI 54302	405132750 / DATCP: 105-444
G	Green Bay Lab (Industrial Dr)	1795 Industrial Drive Green Bay, WI 54302	405132750

**En Chem, Inc. Cooler Receipt Log**

Batch No. 859121

Project Name or ID Kipp's Auto & towing Service No. of Coolers: 1 Temps: R01

A. Receipt Phase: Date cooler was opened: 5-10-05 By: AB

- 1: Were samples received on ice? (Must be  $\leq 6$  C).....  YES NO<sup>2</sup> NA
- 2: Was there a Temperature Blank?..... YES  NO
- 3: Were custody seals present and intact on cooler? (Record on COC)..... YES  NO
- 4: Are COC documents present?.....  YES NO<sup>2</sup>
- 5: Does this Project require quick turn around analysis?..... YES  NO
- 6: Is there any sub-work?..... YES  NO
- 7: Are there any short hold time tests?..... YES  NO
- 8: Are any samples nearing expiration of hold-time? (Within 2 days)..... YES<sup>1</sup>  NO Contacted by/Who \_\_\_\_\_
- 9: Do any samples need to be Filtered or Preserved in the lab?..... YES<sup>1</sup>  NO Contacted by/Who \_\_\_\_\_

B. Check-in Phase: Date samples were Checked-in: 5-10-05 By: AB

- 1: Were all sample containers listed on the COC received and intact?.....  YES NO<sup>2</sup> NA
- 2: Sign the COC as received by En Chem. Completed.....  YES NO
- 3: Do sample labels match the COC? .....  YES NO<sup>2</sup>
- 4: Completed pH check on preserved samples..... YES NO  NA
- 5: Do samples have correct chemical preservation?.....  YES NO<sup>2</sup>  NA AB
- 6: Are dissolved parameters field filtered?..... YES NO<sup>2</sup>  NA
- 7: Are sample volumes adequate for tests requested? .....  YES NO<sup>2</sup>
- 8: Are VOC samples free of bubbles >6mm .....  YES NO<sup>2</sup> NA
- 9: Enter samples into logbook. Completed.....  YES NO
- 10: Place laboratory sample number on all containers and COC. Completed.....  YES NO
- 11: Complete Laboratory Tracking Sheet (LTS). Completed..... YES NO  NA
- 12: Start Nonconformance form. .... YES NO  NA
- 13: Initiate Subcontracting procedure. Completed..... YES NO  NA
- 14: Check laboratory sample number on all containers and COC. .... AB  YES NO NA

**Short Hold-time tests:**

24 Hours or less	48 Hours	7 days	Footnotes 1 Notify proper lab group immediately. 2 Complete nonconformance memo.
Coliform	BOD	Ash	
Corrosivity = pH	Color	Aqueous Extractable Organics- ALL	
Dissolved Oxygen	Nitrite or Nitrate	Flashpoint	
Hexavalent Chromium	Ortho Phosphorus	Free Liquids	
HPC	Surfactants	Sulfide	
Ferrous Iron	Turbidity	TDS	
Eh	En Core Preservation	TSS	
Odor	Power stop preservation	Total Solids	
Residual Chlorine		TVS	
Sulfite		TVSS	
		Unpreserved VOC's	

**LUST Investigation Field Procedures Workplan - METCO  
Kipp's Auto & Towing Service**

**APPENDIX F/HEALTH AND SAFETY PLAN**



**SAFETY PLAN INFORMATION**

Code: METCO METCO Project No: C2172  
 Company Name: METCO  
 Contact:  
 Last Name: Powell First Name: Jason  
 Salutation: MR.  
 P.O. Box Street: 709 Gillette Street, Suite 3  
 City: La Crosse State: WI Zip Code: 54603-0000  
 Area code: 608 Phone: 781-8879 Fax: (608)781-8893

**SITE INFORMATION**

Site Name: Kipp's Auto & Towing Service  
 Site Address: 5507 West Hampton Avenue Site Address City: Milwaukee  
 Site Address State: WI Site Address Zip Code: 53218 Site Address County: Milwaukee  
 WDNR Contact: DSPS - Monica Weis Fire Dept. Contact: Milwaukee  
 Project Date: 9/28/2012 Tank Removal Contractor:  
 General Contractor: METCO

**TANK INFORMATION**

**Tank Sizes\Contents**

Tank 1: 8000	Contents: Gasoline	Age: Not in Use
Tank 2: 3000	Contents: Gasoline	Age: Not in Use
Tank 3: 500	Contents: Waste Oil	Age: Not in Use
Tank 4: 8000	Contents: Gasoline	Age: Removed
Tank 5: 3000	Contents: Gasoline	Age: Removed
Tank 6:	Contents:	Age:

**PURPOSE OF ACTIVITY (Check all appropriate)**

New Tank Installation <input type="checkbox"/>	Tank Closure <input type="checkbox"/>	Install Tank Leak Detection <input type="checkbox"/>
Tank/Pipe Removal <input type="checkbox"/>	Tank/Pipe Repair <input type="checkbox"/>	Install Spill Protection <input type="checkbox"/>
Petroleum Release Investigation <input type="checkbox"/>	Install Remedial System <input type="checkbox"/>	Install Overfill Protection <input type="checkbox"/>
Leak Detection Testing <input type="checkbox"/>	Install Monitoring Wells <input checked="" type="checkbox"/>	Install Kard System <input type="checkbox"/>
Other Ag-Chem Investigation <input type="checkbox"/>		

Background information status Complete  Ir

**TYPE OF SITE**

## SITE HEALTH AND SAFETY PLAN

### POTENTIAL HEALTH AND SAFETY HAZARDS (check all appropriate)

Handling/transfer of product: <input type="checkbox"/>	Heavy Equipment: <input checked="" type="checkbox"/>	Snakes: <input type="checkbox"/>
* Fire	Noise: <input checked="" type="checkbox"/>	Insects: <input type="checkbox"/>
* Explosions	Oxygen Depletion: <input type="checkbox"/>	Rodents: <input type="checkbox"/>
General Construction: <input checked="" type="checkbox"/>	Excavation: <input type="checkbox"/>	Heat: <input checked="" type="checkbox"/>
* Electrical Hazards	* Cave-ins	Cold: <input checked="" type="checkbox"/>
* Physical Injury	* Falls, slips	
Confined Space Entry: <input type="checkbox"/>	Poisonous plants: <input type="checkbox"/>	
* Explosions	Other (Specify):	

Description of site-specific hazards (utilities, terrain, etc.):  
Underground utilities and site traffic

### EVALUATION OF CHEMICAL HAZARDS (MSDS sheets attached)

NAME	PHYSICAL STATE	ROUTE OF ENTRY	OSHA PEL/TL	SYMPTOMS OF EXPOSURE
1.	Vapor/Liq	Inh/Skin	25-300PPM	Nausea, Irritation
2.				
3. Gasoline	Vapor/Liq	Inh/Skin	25-300 PPM	Irritation of eyes, nose and throat
4.				
5.				

### ON-SITE PERSONNEL RESPONSIBILITIES

Team Member	Responsibilities
1. Jason Powell	Site Project Management
2. Eric Dahl	Hydrogeologist
3. Brandon Walker	Environmental Tech
4. Matt Michalski	Environmental Tech

### METHOD TO CONTROL POTENTIAL HEALTH AND SAFETY HAZARDS

#### MONITORING INSTRUMENTS

Combustible Gas Indicator:

Action Levels 0-10% LFL No Explosion Hazard Action Levels Normal: 21% Oxygen Deficient: Less than 21% Oxygen Deficient: Less than 19.5%	Action None Action None Notify Health & Safety Officer Evacuate
Photoionization Detector: <input checked="" type="checkbox"/>	Flame Ionization Detector: <input type="checkbox"/>
	Detector Tubes: <input type="checkbox"/>

SITE HEALTH AND SAFETY PLAN

PERSONAL PROTECTIVE EQUIPMENT

Minimum Requirements

- 1. Hardhat
- 2. Safety glasses\goggles
- 3. Steel toes\shank shoes or boots
- 4. Flame retardant coveralls
- 5. Hearing protection (muffs or ear plugs)

Is additional PPE required?      yes:       no:

Additional Requirements

Uncoated tyvek coveralls:

Saranex tyvek coveralls:

Rubber boots:

Overboots:

Surgical Inner Gloves:

Butyl Neoprene\nitrile outer gloves:

Full face respirators:

\* type of cartridge:

SCBA \ SAR:

Other:

Level of protection designated    A:     B:     C:     D:

SITE CONTROL

Work Zones

Support Zone: Beyond a 25' Radius of drilling or excavation and upwind of operation

Contamination Reduction Zone: Between 15 foot and 25 foot Radius of drilling or excavation

Exclusion Zone: Within 15 feet Radius of excavation or machine operation

Site Entry Procedure: Obtain approval and instructions from Project Leader.

Decontaminations Procedures:

Personnel: Remove protective equipment and wash hands prior to eating.

Equipment: Wash with brush and Alconox soap and rinsed with portable water.

Investigation-derived material disposal

Stockpiling: The soils will be placed on and covered with plastic. The client will determine the stockpile location, but will have to be approved by the Project Manager. Soils will be disposed of by the most efficient and cost effective approved method. DOT drums: Label drums as to content and date filled. Routinely inspect drums for leakage or spills. Place together in area where movement is at a minimum.

Work Limitations: Daylight hours. No eating, drinking, or smoking in the exclusion zone or the contamination reduction zone.

Employee Limitations:

Site Resources

Plan Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Shower:     Water Supply:

SITE HEALTH AND SAFETY PLAN

CONTINGENCY PLANNING

LOCAL RESOURCES

Phone Number

Ambulance: Milwaukee

911

Hospital Emergency Room: Aurora Sinai Medical Center

(414) 219-2000

Poison Control Center: Milwaukee

(800) 222-1222

Police Milwaukee

911

Fire Dept: Milwaukee

911

Hazardous Waste Response Center:

800-943-0003 Wisconsin

EPA 800-424-8802

Location Address: 5507 West Hampton Avenue

EMERGENCY ROUTES (attach maps)

Hospital: Aurora Sinai Medical Center (945 North 12th Street, Milwaukee, WI) - Travel west on West Hampton Street to West Fond du Lac Avenue, turn left onto West Fond du Lac Avenue and travel southeast approximately 4.3 miles to North 20th Street (Hwy 57), turn right on North 20th Avenue and travel south approximately 1.1 miles to West State Street, turn left on West State Street and travel east 7 blocks and hospital will be on right.

Other:

EMERGENCY PROCEDURES

If an emergency develops at the site, the discoverer will take the following course of action:

- \* Notify the proper emergency service (fire, police, etc.) for assistance.
- \* Notify other personnel on the site. Notify Project Leader.
- \* Contact METCO and the client representative to inform them of the incident as soon as possible.
- \* Prepare a summary report of the incident for METCO and the client representative.

ON-SITE ORGANIZATION

PHONE NUMBERS

METCO Project Leader: Jason Powell

work 608-781-8879

home 608-526-6108

METCO Safety Officer: Linda Eastman

work 1-800-236-0448

Engineer/Architect Contact:

home (608)489-2236

Client Contact: Melvin Kipp c/o Allen Kipp

(414) 527-3417

METCO Corporate Contact: Paul Knower

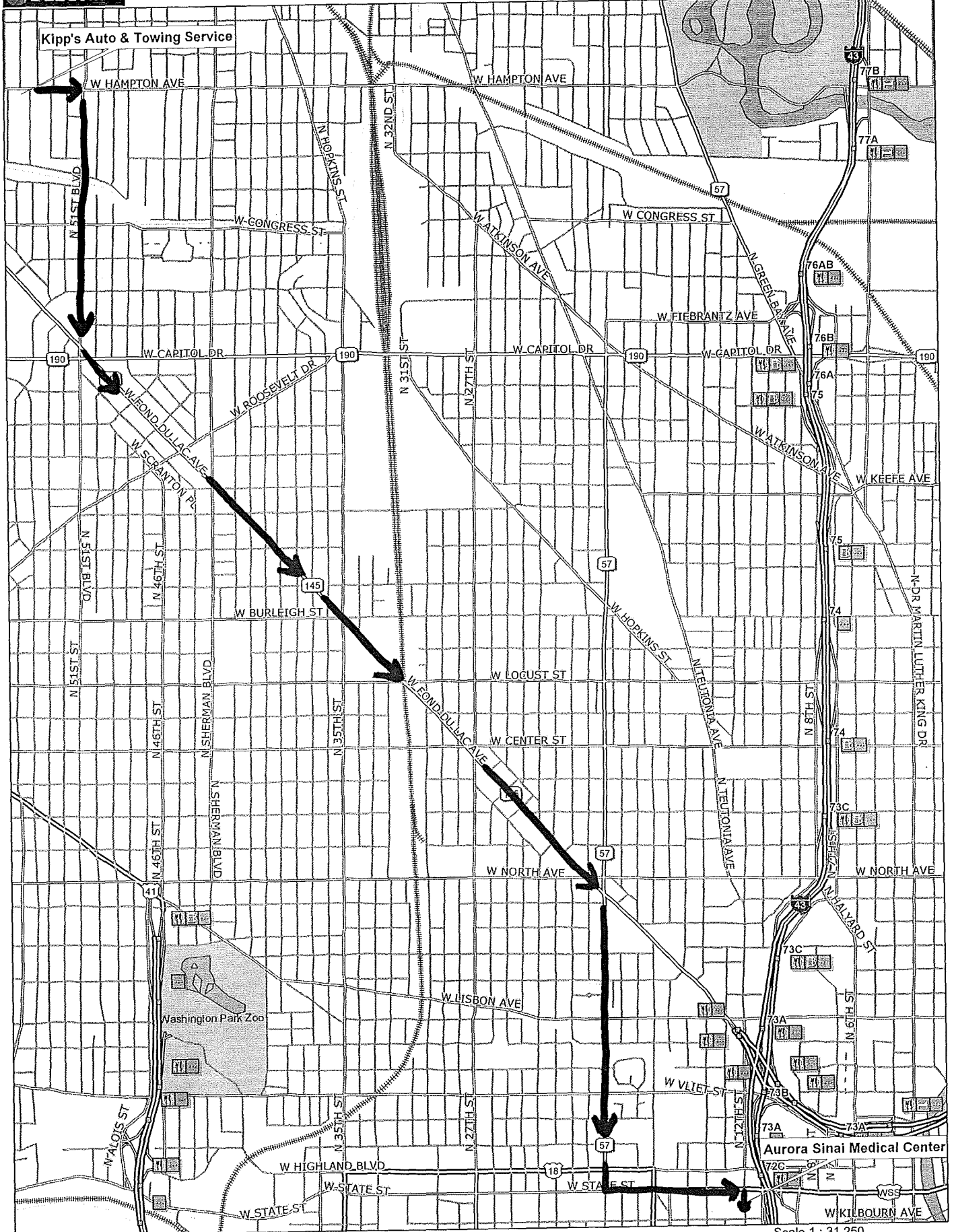
home (608)489-2659

work 1-800-236-0448

# **DAILY SAFETY PLAN CHECK**

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- 1. Hard-hat**
- 2. Visible fire extinguisher**
- 3. Safety glasses**
- 4. Hearing protection**
- 5. No smoking on site**
- 6. Safety data sheet**
- 7. Route to hospital**
- 8. Barricades (cones, flags, fences, vehicle)**
- 9. Emergency phone numbers**
- 10. Know where the job site book is**



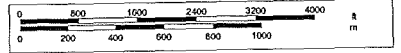
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Scale 1 : 31,250



1" = 2,604.2 ft Data Zoom 12-6

**LUST Investigation Field Procedures Workplan - METCO  
Kipp's Auto & Towing Service**

**APPENDIX G/QUALIFICATIONS**

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## Ronald J. Anderson, P.G.

### Professional Titles

- Senior Hydrogeologist
- Project Manager

### Credentials

- Licensed Professional Geologist in Wisconsin
- Licensed Professional Geologist in Minnesota
- Recognized by the State of Wisconsin Department of Natural Resources (Chapter NR712) as a qualified Hydrogeologist
- Certified by State of Wisconsin/DSPS to conduct PECFA-funded LUST projects
- Certified tank closure site assessor (#41861) in Wisconsin
- Member of the Wisconsin Groundwater Association
- Member of the Minnesota Groundwater Association
- Member of the Federation of Environmental Technologist, Inc.
- Member of the Wisconsin Fabricare Institute

### Education

Includes a BA in Earth Science from the University of Minnesota-Duluth. Applicable courses successfully completed include Hydrogeology, Applied Hydrogeology, Environmental Geology, Geological Field Methods, Geology Field Camp, Geomorphology, Structural Geology, Stratigraphy/Tectonics, Mineralogy/Petrology, Glacial/Quaternary Geology, Geology of North America, Oceanography, General Chemistry, Organic Chemistry, and Environmental Conservation

### Post-Graduate Education

Includes Personnel Protection and Safety, Conducting Comprehensive Environmental Property Assessments, Groundwater Flow and Well Hydraulics, Effective Techniques for Contaminated Groundwater Treatment, and numerous other continuing education classes and conferences.

### Work Experience

Includes nine months with the Wisconsin Department of Natural Resources Leaking Underground Storage Tank Program regulating LUST sites and since June 1990, with METCO as a Hydrogeologist and Project Manager. Duties have included: managing, conducting, and reporting tank closure assessments; property assessment, LUST investigations; spill investigations; agricultural chemical investigations, dry cleaning chemical investigations, general geotechnical/environmental investigations; Geoprobe projects (soil, groundwater, soil gas sampling); drilling projects (soil boring and monitoring wells); and remedial projects. Since 1989, METCO has sampled/consulted over 700 environmental sites.



# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## Jason T. Powell

### Professional Title

- Staff Scientist

### Credentials

- Recognized by the State of Wisconsin Department of Natural Resources (Chapter NR712) as a qualified Scientist.

### Education

Includes a BS in Groundwater Management from the University of Wisconsin- Stevens Point. Applicable courses successfully completed include Hydrogeology, Applied Hydrogeology, Environmental Geology, Hydrogeology-Groundwater Flow Modeling, Groundwater Management, Structural Geology, Mineralogy, Glacial Geology, Soils, Soil Physics, Hydrology, Geochemistry, Water Chemistry, Organic Chemistry, General Chemistry, Environmental Issues.

### Post-Graduate Education

40-hour OSHA Hazardous Materials Safety Training course with 8-hour refresher course.

### Work Experience

With METCO since May 1992 as a Geoprobe Assistant and Geoprobe Operator. In June 1995 to July 1996 as a Environmental Technician. In July 1996 as a Staff Scientist. Duties have included: LUST investigations; general geotechnical/environmental investigations; Geoprobe projects (soil, groundwater sampling); drilling projects (soil boring and monitoring wells); remedial projects (sampling, pilot tests, system operation/maintenance) and project management.

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## Eric J. Dahl

### Professional Title

- Hydrogeologist

### Credentials

- Recognized by the State of Wisconsin Department of Natural Resources (Chapter NR712) as a qualified Hydrogeologist.
- Registered through the Wisconsin Department of Commerce as a PECFA consultant (#823519).
- Member of the Geological Society of America

### Education

Includes B.S. in Geology from the University of Wisconsin-Eau Claire. Applicable courses successfully completed include Environmental Geology, Physical Hydrogeology, Chemical Hydrogeology, Computer Modeling in Hydrogeology, Aqueous Geochemistry, Field Geology I and II, Mineralogy and Petrology I and II, Sedimentology and Stratigraphy, Petroleum and Economic Geology, Earth Resources, Earth History, and Structural Geology.

### Post-Graduate Education

40-hour OSHA Hazardous Materials Safety Training course with 8-hour refresher course.

### Work Experience

With METCO since November 1999 as a Hydrogeologist. Duties have included: Site Investigations, Phase I and Phase II Environmental Site Assessments, Case Closure Requests/GIS Registry, geoprobe projects (oversight, direction, and sampling), drilling projects/monitoring well installation (oversight, direction, and sampling), soil excavation projects (oversight, direction, and sampling), geoprobe operation, and operation and maintenance of remedial systems.

# LUST Investigation Field Procedures Workplan - METCO Kipp's Auto & Towing Service

## Thomas P. Pignet, P.E.

### Professional Titles

- Chemical Engineer
- Industrial Engineer

### Credentials

- Licensed Professional Engineer in Wisconsin

### Education

Undergraduate: B.S. in Chemical Engineering from the University of Wisconsin. Applicable courses include the standard chemistry curriculum - basic, physical, organic, etc. - plus engineering transport phenomena, chemical unit operations (e.g. separations), fluid mechanics, etc.

### Post-Graduate Education

Ph.D. in Chemical Engineering from the University of Minnesota - with applicable special training in absorption & catalysis; M.S. in Industrial Engineering from the University of Wisconsin - Milwaukee - with special emphasis on statistical techniques and data analysis. Applicable further training: continuing education, semester-length courses in [1] Understanding Environmental & Safety Regulation; [2] Hazardous & Toxic Waste Management; plus a number of 1-2 day workshops - Fire & Explosion Safety; Small Quantity Generations of Hazardous Waste.

### Work Experience

Includes ten years as a research chemical engineer with a large chemical manufacturer; one year as process development engineer and demonstration-scale test analyst on a unique coal gasification project; ten years in association with UW-M, teaching and consulting to industry on energy efficiency, waste minimization and productivity improvement. One year working with a small engineering consulting firm on energy, environmental, and process improvement projects, including LUST Investigations and Remediations. With METCO since February 2000. Duties include Remedial Action Plan preparation, pilot test design and performance, remedial systems design and implementation, and general management of METCO's remedial projects.

**LUST Investigation Field Procedures Workplan - METCO  
Kipp's Auto & Towing Service**

**Brandon A. Walker**

**Professional Title**

- Staff Scientist

**Credentials**

- Registered through the Wisconsin Department of Commerce as a PECFA consultant (#1052577).

**Education**

Includes B.S. in Geography and a minor in Environmental Studies from the University of Wisconsin- La Crosse. Applicable courses successfully completed include Water Resources, Ecology, Climate Systems, Earth Science, Zoology, Fundamentals of Cartography, Interpretation of Aerial Photography, Global Issues, Urban Geography, Environmental Sociology, and Environmental Studies.

**Work Experience**

With METCO since April 2007 as a Staff Scientist. Duties have included: soil and groundwater sampling, operation and maintenance of remedial systems, geoprobe projects (oversight, direction, and sampling), site mapping, data reduction and analysis, and reporting.