

GOPY

LUST Investigation Field Procedures Workplan

Kewaskum Living Waters Church
100 Clinton Street
Kewaskum, Wisconsin

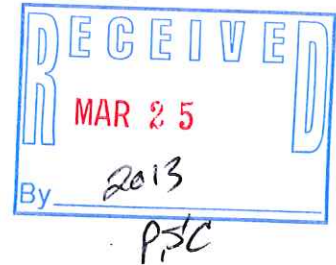
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March 19, 2013
by METCO

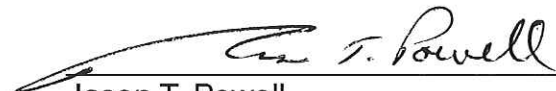
WDNR File Reference #: 03-67-152319
PECFA Claim #: 53040-9117-00




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This document was prepared by:


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Staff Scientist


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March 19, 2013

WDNR BRRS#: 03-67-152319

PECFA Claim #: 53040-9117-00

Joan Brath
100 Clinton Street
Kewaskum, WI 53040

Dear Ms. Brath,

Enclosed is our "LUST Investigation Field Procedures Workplan" concerning the Kewaskum Living Waters Church site in Kewaskum, 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 Natural Resources 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: John Feeney – WDNR

**LUST Investigation Field Procedures Workplan - METCO
Kewaskum Living Waters Church**

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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
WDNR - Wisconsin Department of Natural Resources
WDSPS - Wisconsin Department of Safety and Professional Services
WPDES - Wisconsin Pollutant Discharge Elimination System

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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
Kewaskum Living Waters Church**

INTRODUCTION

Site Name

Kewaskum Living Waters Church

Site Address

100 Clinton Street
Kewaskum, Wisconsin

Legal Description

NW ¼, SE ¼, Section 9, Township 12 North, Range 19 East, Washington
County

Contact or Client

Joan Brath
100 Clinton Street
Kewaskum, WI 53040
(262) 626-8337

WDNR Project Manager

John Feeney
Wisconsin Department of Natural Resources
1155 Pilgrim Parkway
Plymouth, WI 53073
(920) 892-8756 Ext. 3025

Consultant

METCO
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Jason T. Powell
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La Crosse, WI 54603
(608) 781-8879

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SITE BACKGROUND

Facility

Kewaskum Living Waters Church has owned the property since 1989. Previously the building was the Wigwam Dance Hall, which occupied this location for many years. A local town resident thought that a bus garage existed on this property before the Wigwam Dance Hall.

On June 16, 1997, a 300-gallon gasoline UST was removed from the subject property. The UST is from the gas station on the adjacent property to the east or may have been from the bus garage. During the UST removal, petroleum contamination was encountered and subsequently reported to the WDNR. The WDNR then required that a site investigation be conducted.

The adjacent property to the east is an active gas station and a closed LUST site Shefond Mobil Mart (BRRTS# 03-67-004616 and 03-67-005258). An investigation was conducted in the 1990's and a large soil excavation was conducted in June 1995. The site was granted conditional closure in March 1997 and final closure with residual soil and groundwater contamination in January 2012. It is possible that the petroleum contamination plumes from these two site are commingled.

Potential Risks and Impacts

The subject property and surrounding properties are all served by the Village of Kewaskum municipal water supply. The Village of Kewaskum has four municipal wells, the nearest (Well #5) being approximately 1,050 feet to the south-southeast of the subject property. There are no known private wells in the area of the subject property.

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, Kewaskum is located in the western 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 surface. Kettle moraine deposits, which consist of permeable stratified

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sediments and till, exist in much of Washington County.

The elevation of the site is approximately 940 feet above Mean Sea Level (MSL). See Appendix A for site location.

Geology

Native unconsolidated materials in this area generally consist of unstratified silt and clay. The unconsolidated materials are underlain by dolomite bedrock at approximately 100 feet below ground surface.

Hydrology

The nearest surface water is Kewaskum Creek, which exists approximately 700 feet to the south of the subject property. Kewaskum Creek drains into the Milwaukee River approximately 1,350 feet to the east-southeast of the subject property.

Hydrogeology

Based on data from the LUST investigation at the adjacent Shefond Mobil Mart site, the depth to groundwater in this area is approximately 5-10 feet below ground surface. Groundwater flow direction is expected to be toward the southeast.

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 8-12 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:

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1. Determine general subsurface geotechnical characteristics.
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 4 to 6 boreholes to be completed on/off site. METCO has also proposed 3 to 5 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

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- 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.

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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.

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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.

Variations

We are not aware of any variations 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 (3/19/13).
- 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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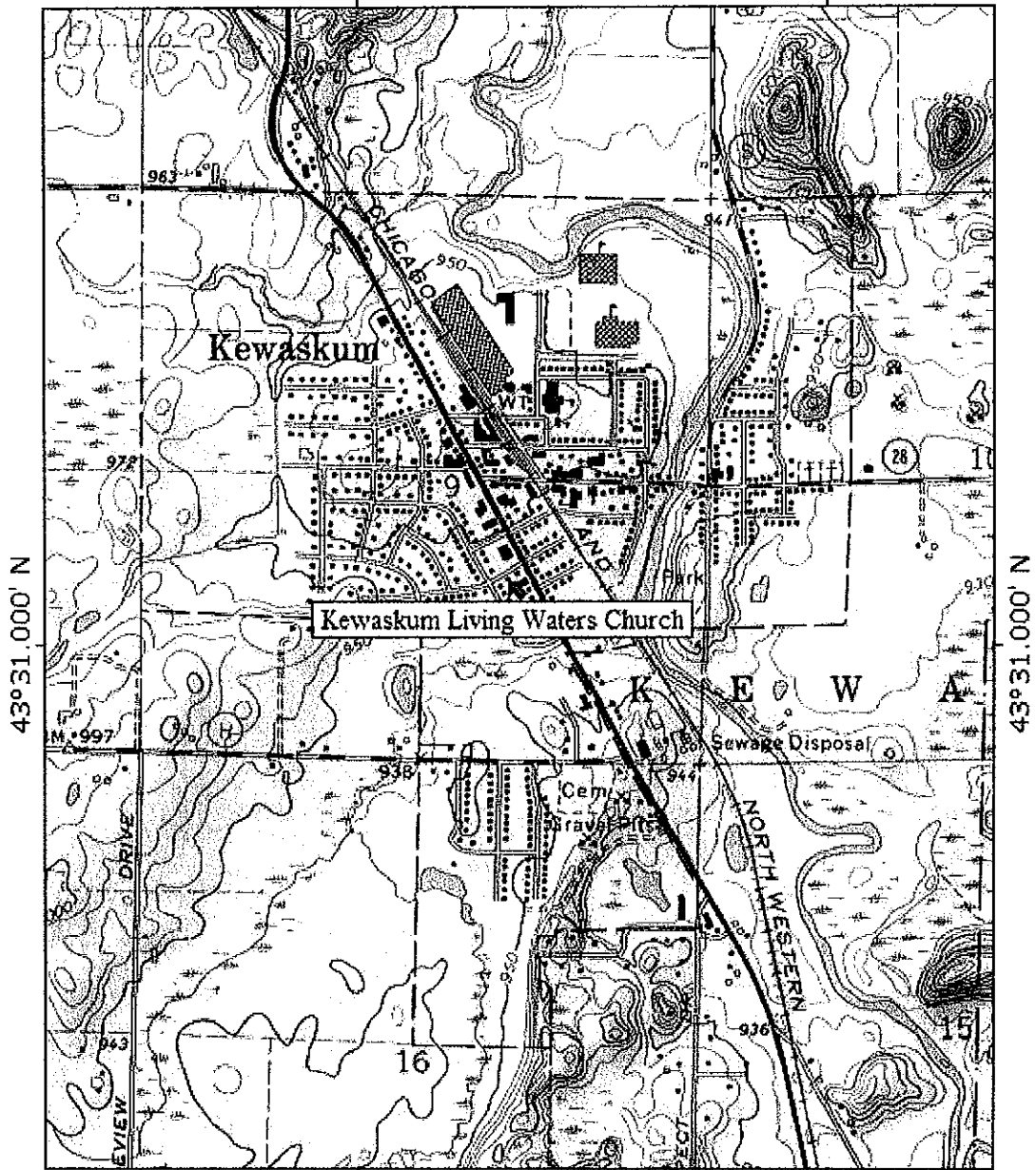
impacted by released contaminants, the WDNR will require a Drilling Project with monitoring wells.

- 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 WDSPPS. 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.

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APPENDIX A/SITE MAPS

TOPO! map printed on 03/06/13 from "wisconsin.tpo" and "Untitled.tpg"
88°14.000' W WGS84 88°13.000' W




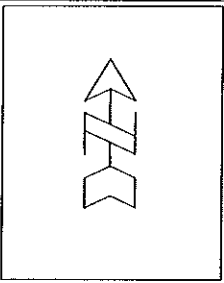
MN TN
3 1/2°

88°14.000' W WGS84 88°13.000' W
0 1000 FEET 0 500 1000 METERS
0 5 1 MILE

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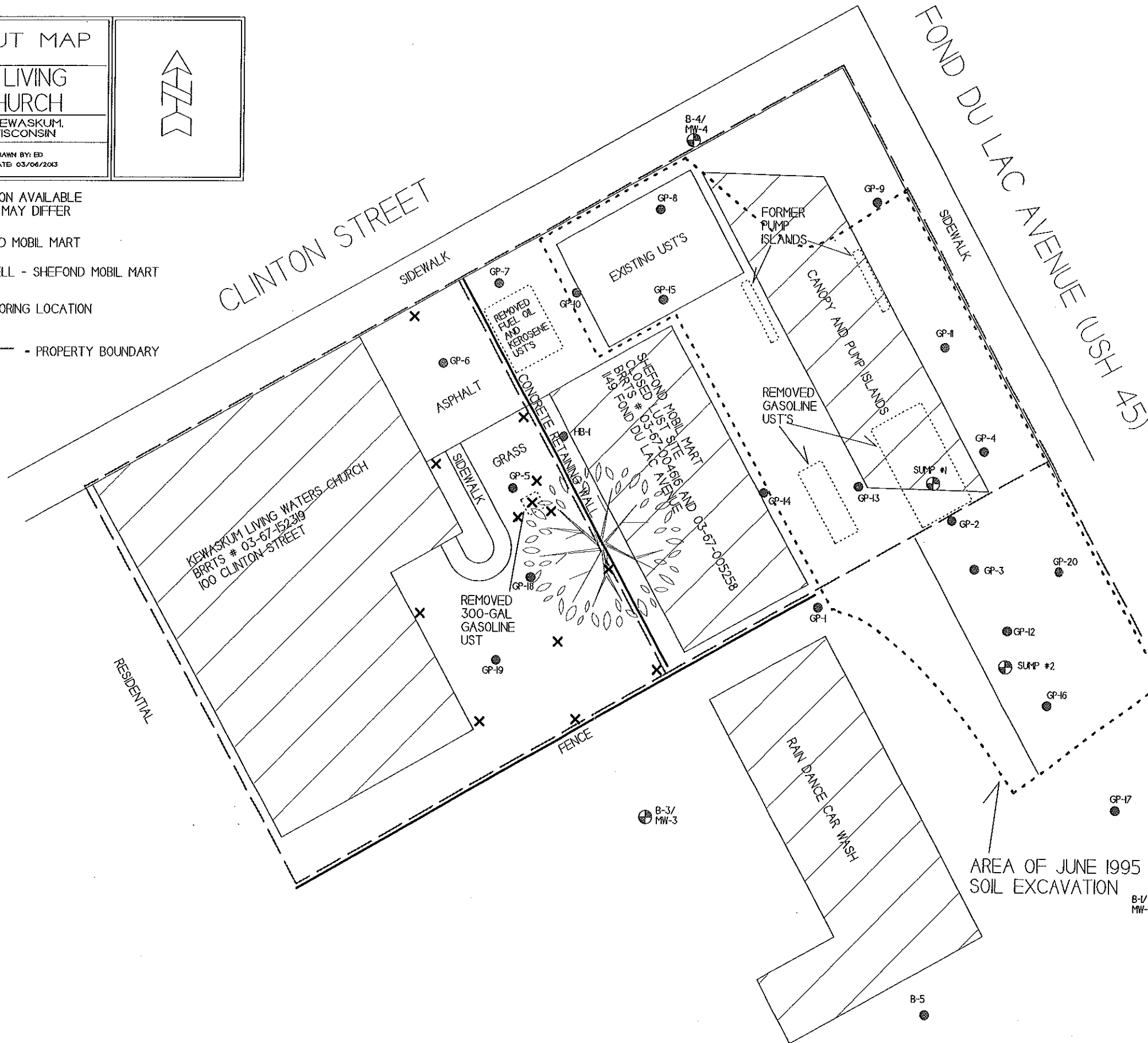
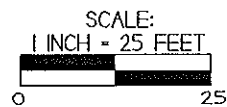
SITE LOCATION MAP – CONTOUR INTERVAL 10 FEET
KEWASKUM LIVING WATERS CHURCH – KEWASKUM, WI
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM

SITE LAYOUT MAP	
KEWASKUM LIVING WATERS CHURCH	
 709 GILLETTE ST, STE 3 LA CROSSE, WI 54603 Tel: (608) 781-8876 Fax: (608) 781-8893	KEWASKUM, WISCONSIN DRAWN BY: ED DATE: 03/06/2013



NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

- - SOIL BORING - SHEFOND MOBIL MART
- ⊕ - FORMER MONITORING WELL - SHEFOND MOBIL MART
- ✕ - PROPOSED GEOPROBE BORING LOCATION
- - PROPERTY BOUNDARY



- ___ 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



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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

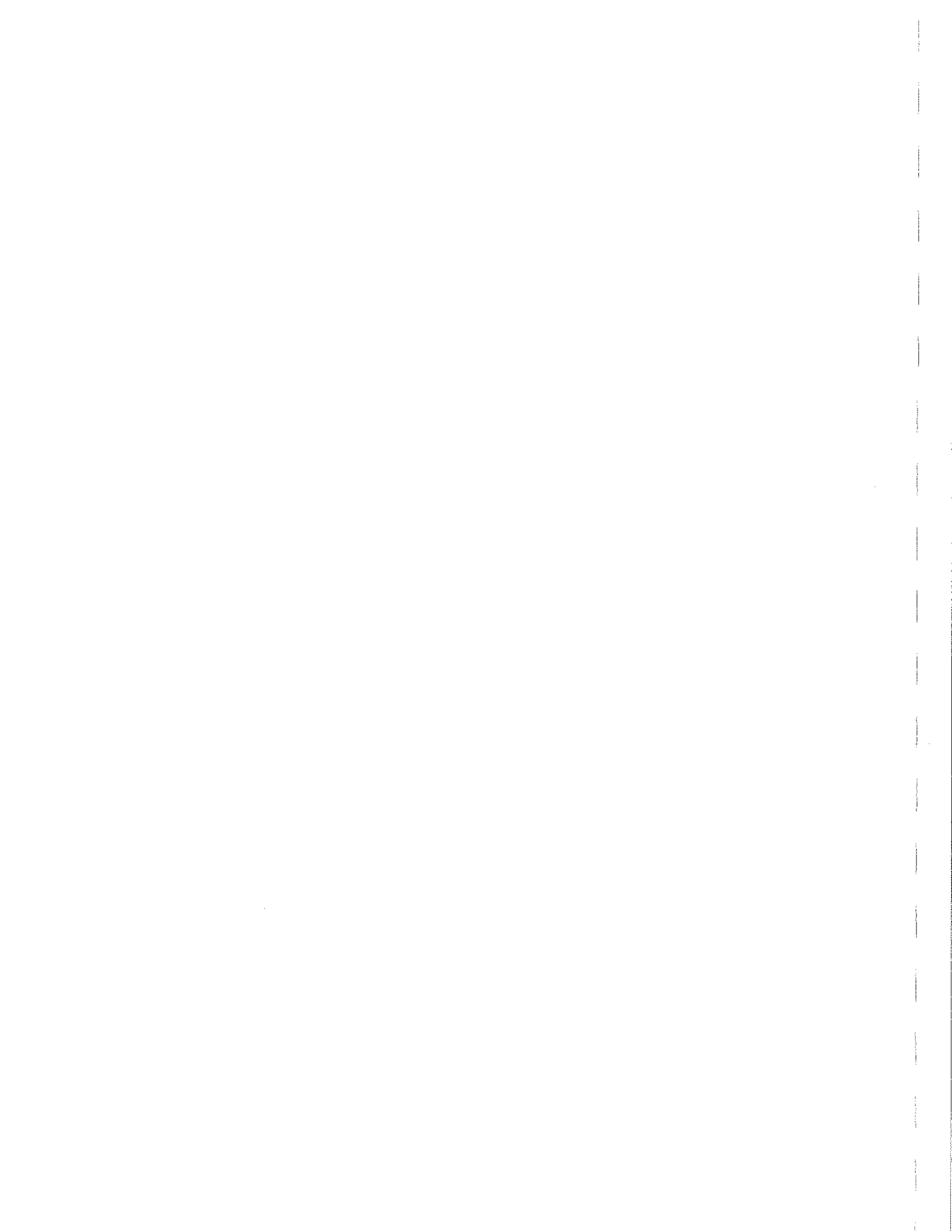
IX. APPENDICES (up to the author)

- 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 (3300-58)
 - 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
Kewaskum Living Waters Church**

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 ⁵	Site Investigation, Pretreatment and Posttreatment Sample Analysis ¹¹
Regular Gasoline	GRO ²	Free Liquids ⁶ GRO Benzene ⁷ Pb ⁷ Haz. Waste Deter. ⁸	GRO VOC/PVOC ¹⁵ Pb ¹²
Unleaded Gasoline; Grades 80 100, and 100 LL (Low Lead) Aviation Fuel	GRO ²	Free Liquids ⁶ GRO Benzene ⁷ Pb ⁷ Haz. Waste Deter. ⁸	GRO PVOC
Diesel; Jet Fuels; and No's 1, 2, and 4 Fuel Oil	DRO ³	Free Liquids ⁶ DRO Benzene ⁷ Haz. Waste Deter. ⁸	DRO ³ PVOC PAH ^{13 14}
Crude Oil; Lubricating Oils; No. 6 Fuel Oil	DRO ³	Free Liquids ⁶ DRO Haz. Waste Deter. ⁸	DRO ³ PAH ^{13 14}
Unknown Petroleum	GRO ⁷ and DRO ^{3 4}	Free Liquids ⁶ GRO and DRO Pb, Cd ⁷ Haz. Waste Deter. ⁸ CN ¹⁹ S ^{2 10}	GRO and DRO ^{3 4} VOC/PVOC ¹⁵ PAH ^{13 14} Pb, Cd ¹²
Waste Oil	DRO ³	Free Liquids ⁶ DRO Pb, Cd ⁷ Haz. Waste Deter. ⁸ CN ¹⁹ S ^{2 10}	DRO ³ VOC/PVOC ¹⁵ PAH ^{13 14} PCBs ¹⁶ Pb, Cd ¹²

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
WET CHEMISTRY			
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 ₂ SO ₄	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 ₂ SO ₄	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 ₃	180 days
TKN EPA 351.2	1 Liter HDPE	4°C, pH<2 with H ₂ SO ₄	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 ₂ SO ₄	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 ₂ SO ₄	28 days
Organic Carbon SW846 9060/ EPA 415.1	40 ml Glass	4°C, pH<2 with H ₂ SO ₄ or HCL	28 days
Phenol, Total EPA 420.1	1 Liter Glass	4°C, pH<2 with H ₂ SO ₄	28 days
Phosphorus, Total EPA 365.3	250 mL HDPE	4°C, pH<2 with H ₂ SO ₄	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
METALS			
Metals	250 mL HDPE	4°C, pH<2 with HNO ₃	6 months
Mercury SW8467470/EPA 245.1	250 mL HDPE	4°C, pH<2 with HNO ₃	28 days
ORGANICS			
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
METALS						
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
ORGANICS						
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
Kewaskum Living Waters Church**

APPENDIX D/WDNR DOCUMENTS

HAZARDOUS SUBSTANCE/WASTE RELEASES:

INTERIM SOIL CLEANUP GUIDELINES--PETROLEUM CONTAMINATION

DNR Closeout Action

Soils Inaccessible or
accessible and not
technically and
economically
feasible

BTEX (1) GRO/DRO Soil Type (2) Soils Accessible

<= NR 720 <= 100 ppm Permeable Close
(K>10 E-6 cm/s)

<= NR 720 <= 250 ppm Less Permeable Close
(K<=10 E-6 cm/s)

<= NR 720 > applic.
GRO/DRO

or
> NR 720

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>Substance</u>	<u>Soil Screening 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 Concentrations (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 rec. (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 ¹	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 ²	0.3 ²
Bacteria, Total Coliform	0 ³	0 ³
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

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Table 1 – Continued
Public Health Groundwater Quality Standards

Substance ¹	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 ⁴	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 ⁵	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

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Table 1 – Continued
Public Health Groundwater Quality Standards

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

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

² 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 diamino-atrazine).

³ 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.

⁴ "Cyanide, free" refers to the simple cyanides (HCN, CN⁻) 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".

⁵ 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.

⁶ 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:

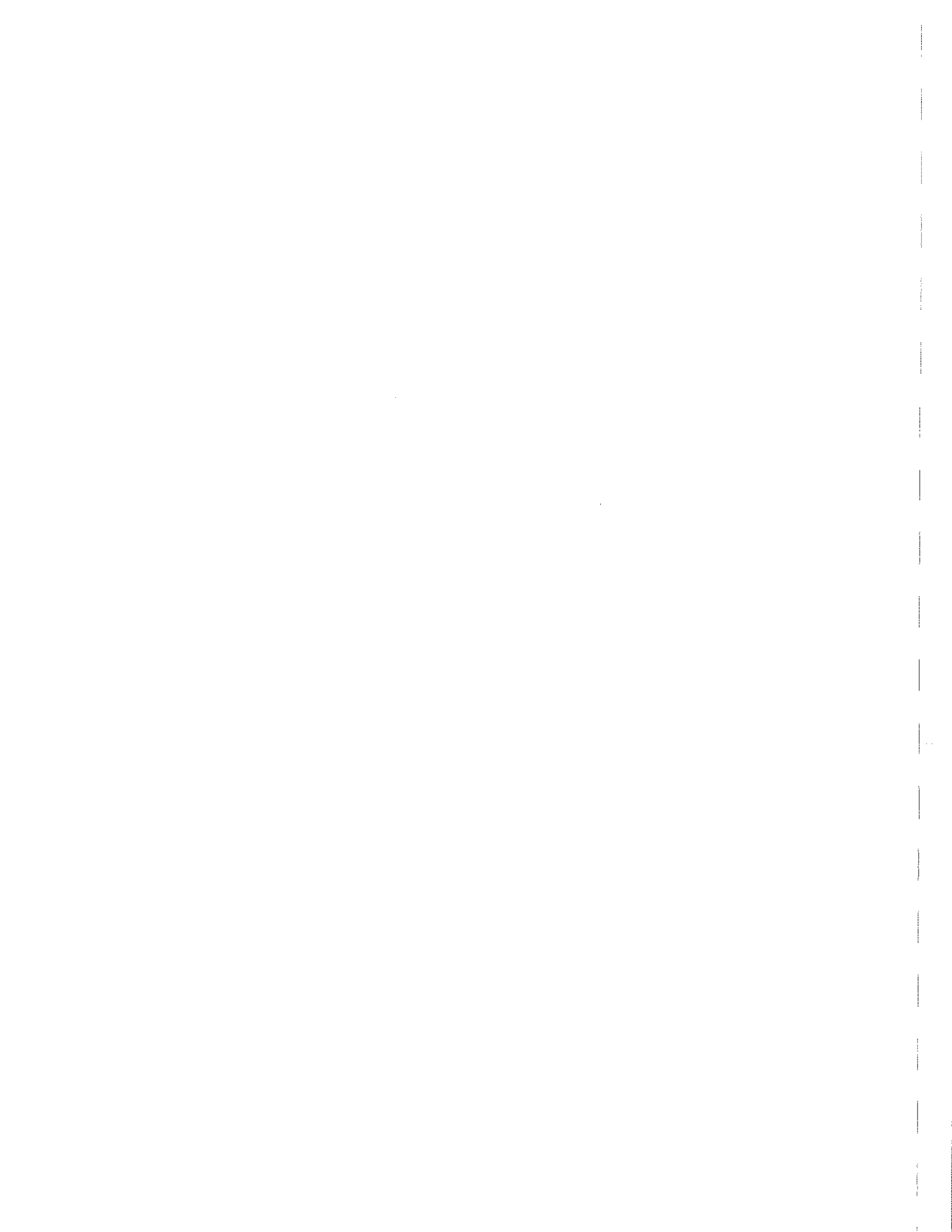
(a) If a substance is not detected in a sample, the regulatory agency may not consider the preventive action limit or enforcement standard to have been attained or exceeded.

(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
Kewaskum Living Waters Church**

APPENDIX E/PROJECT DOCUMENTS



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Annex
4041 N. Richards Street, Box 12436
Milwaukee, WI 53212-0436
TELEPHONE 414-229-0800
FAX 414-229-0810

July 10, 1997

BRRTS# : 03-67-152319
Facility ID#: 267161620
BRR/LUST

PASTOR JOSEPH BRATH
KEWASKUM LIVING WATERS CHURCH
100 CLINTON AV
KEWASKUM WI 53040

SUBJECT: Reported Contamination at your location

To speed processing, correspondence should reference BRRTS & FID numbers at top of letter.

Dear Pastor Brath:

On 6-17-97 Peter Sandborg of Sigma informed the Department that unleaded gasoline which leaked from an underground storage tank caused soil contamination and potential groundwater contamination at your address.

Based on the information submitted to the Wisconsin Department of Natural Resources (WDNR), we believe you are responsible for restoring the environment at the referenced site under Section 292, Wisconsin Stats., known as the hazardous substances spills law. Utilizing information submitted to the Department, this case has been assigned an unknown ranking due to the lack of information concerning soil and groundwater contamination.

WDNR Southeast Region Prioritization and Scoring Policy

Due to the WDNR workload, it is necessary to rank all contamination cases for review priority. Lower priority cases do not have assigned project managers, however, responsible parties are required to proceed with investigation and clean-up efforts. Until a priority has been assigned to this site, you should proceed with the required response work, submitting all plans and reports, along with status reports, to this office. The WDNR will notify you if your site will receive active oversight.

Your responsibilities include investigating the extent of the contamination and then selecting and implementing the most appropriate remedial action. Enclosed is information to help you understand what you need to do to ensure your compliance with the spills law.

The purpose of this letter is threefold: 1) to describe your legal responsibilities, 2) to explain what you need to do to investigate and clean up the contamination, and 3) to provide you with information about cleanups, environmental consultants, possible financial assistance, and working cooperatively with the Department of Natural Resources.

Legal Responsibilities:

Your legal responsibilities are defined both in statute and in administrative codes. The hazardous

Wisconsin Department of Natural Resources

Notification of Petroleum Contamination from Underground Storage Tank System

Please complete this form and FAX it to the appropriate DNR contact person listed on the back page of this form immediately upon discovery of a release from a UST system.

TO: DNR, Attn: Mike Farley
FAX #: 414-229-0810

1. Name, company, mailing address and phone number of person reporting the discharge:
Peter A. Sandborg
Sigma Environmental Services, Inc,
1800 W. Rogers Ave.
Appleton, WI 54914

2. Site Information:

Name of site at which discharge occurred (local name of site/business, not responsible party name-unless a residence): *Kewaskum Living Waters Church*

Location (actual street address, not P.O. Box, if not street address, describe as precisely as possible, e.g. 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60): *100 Clinton Ave.*

Municipality (city, village, township in which site is located-not mailing address): *Kewaskum*

County: *Washington*

Legal Description: NW 1/4, SE 1/4, Section 9, Tn 12, Range 19E

3. Responsible Party (RP) and/or RP Representative Information

Company Name: *Kewaskum Living Waters Church*

Contact Person: *Pastor Joseph Brath*

Mailing Address (with zip code): *100 Clinton Ave.*
Kewaskum, WI 53040

Telephone Number: *414-626-8337*

4. Identity, physical state and quantity of the hazardous substance discharged (check all that apply):

Unleaded gasoline

Fuel Oil

Leaded gasoline

Waste Oil

Diesel

Other _____

5. Impacts to the environment (enter "K" for known or "p" for potential for all that apply):

- | | |
|--|--|
| <input type="checkbox"/> Fire/explosion threat | <input checked="" type="checkbox"/> Soil contamination |
| <input type="checkbox"/> Contaminated private wells (# of wells) _____ | <input type="checkbox"/> Surface water impacts |
| <input type="checkbox"/> Contaminated public wells | <input type="checkbox"/> Floating product |
| <input type="checkbox"/> Groundwater contamination | <input type="checkbox"/> Other _____ |

6. Contamination was discovered as a result of:

- Tank closure assessment Site assessment Other _____

On what date: June 16, 1997

Additional Comments:

cc: Pastor Joseph Brath

substances spill law, Section 292.11 (3) Wisconsin Statutes, states:

- * **RESPONSIBILITY.** A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

Wisconsin Administrative Codes chapters NR 700 through NR 728 establish requirements for emergency and interim actions, public information, site investigations, design and operation of remedial action systems, and case closure. Chapter NR 708 includes provisions for immediate actions in response to limited contamination. Wisconsin Administrative Code chapter NR 140 establishes groundwater standards for contaminants that reach groundwater.

Steps to Take:

The longer contamination is left in the environment the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and neighboring properties and reduce your costs in investigating and cleaning up the contamination. To ensure that your cleanup complies with Wisconsin's laws and administrative codes, you should hire a professional environmental consultant who understands what needs to be done. These are the first four steps to take:

1. By 8-22-97, please submit written verification (such as a letter from the consultant) that you have hired an environmental consultant. You will need to work quickly to meet this timeline.
2. By 10-4-97, your consultant must submit a workplan and schedule for the investigation. The consultant must follow the DNR administrative codes and technical guidance documents. Please include with your workplan a copy of any previous information that has been completed (such as an underground tank removal report or a preliminary excavation report).
3. Please inform DNR of what is being done at your site. Submittal requirement timelines depend on the contaminants at the site. As described in Chap. NR 700.11, if the site meets criteria for a "simple site", progress reports must be submitted semi-annually, beginning 6 months from the initial notification date. If the site meets criteria for a "complex site", the site-investigation report and a draft remedial options report must be submitted to DNR within 30 days of completion of both reports. Your consultant must clearly document the extent and degree of soil and groundwater contamination and submit a proposal for cleaning it up.
4. For complex sites, per chapter NR 724.13(3), you or your consultant must provide a brief report at least every 90 days, starting after the remediation system begins operation. The reports should summarize the work completed since the last report. Quarterly reports need only include one or two pages of text, plus any relevant maps and tables. However, should conditions at your site warrant, we may require more frequent contacts with the Department.

Due to the number of contaminated sites and our staffing levels in DNR's Southeast Region, we will be unable to provide workplan approvals for investigations or remedial actions. To maintain your compliance with the spills law and chs. NR 700 through NR 728, do not delay the investigation and cleanup of your site by waiting for DNR response. We have provided detailed technical guidance to environmental consultants. Your consultant is expected to know our technical procedures and administrative codes and should be able to answer your questions on meeting cleanup requirements.

Your correspondence and reports regarding this site should be sent to:

Michael Farley, BRR Program Assistant
Wisconsin Department of Natural Resources
Box 12436
4041 N Richards St
Milwaukee WI 53212

Unless otherwise requested, please send only one copy of plans and reports. To speed processing, correspondence should reference the BRRTS and FID numbers shown at the top of this letter.

Information for Site Owners:

Enclosed is a list of environmental consultants and some tips on selecting one. If you are eligible for reimbursement of costs under Wisconsin's PECFA program (see last paragraph) you will need to compare at least three consultants' proposals before hiring a consultant. Consultants and laboratories working in the PECFA program are required to carry errors and omissions insurance to help protect you against unsuitable work. Also enclosed are materials on controlling costs, understanding the cleanup process, and choosing a site cleanup method. Please read this information carefully.

If you are interested in obtaining the protection of limited liability under s. 292, Stats., please contact Mark Giesfeldt at (608) 267-7562 or Darsi Foss at (608) 267-6713, in DNR's Madison office for more information. The liability exemption under s. 292 Stats., is available to persons who meet the definition of "purchaser" in s. 292 and receive DNR approval for the response actions taken at the property undergoing cleanup. DNR will determine eligibility for this program on a case-by-case basis, prior to the "purchaser" developing a scope of work for conducting a ch. NR 716 site investigation.

Financial Information:

Reimbursement from the Petroleum Environmental Cleanup Fund (PECFA) is available for the costs of cleaning up contamination from eligible petroleum storage tanks. The fund is administered by the Department of Industry, Labor, and Human Relations (DILHR). Please contact DILHR at (608) 266-2424 for more information on eligibility and regulations for this program.

Thank you for your cooperation.

Sincerely,

Michael G. Farley
Program Assistant
414-229-0808

cc: Peter Sandborg, Sigma

Type of Case: LUST ERP 453M 453P

SER Form #1 April 30, 1997

ACTIVITY NO.: <u>03-67-152319</u>	FID NO.: <u>267161620</u>
County: <u>Washington</u>	Initial Contact Date: <u>6/17/97</u>
Site Name: <u>Kewaskum Living Waters Church</u>	RP Letter? <u>YXN</u> Date Mailed: <u>7/1/97</u>
Address: <u>100 Clinton Ave.</u>	Closure Date: <u>1/1</u>
<u>Kewaskum 53040</u>	Person/Firm Reporting: <u>Peter Sandborg</u>
Municipality: <u>1</u>	<u>Sigma Environmental Services Inc.</u>
Legal Desc.: <u>NW 1/4 SE 1/4 Sec 9 Tn 12 Rng 9 E</u>	Phone: ()
Lat.: _____ Long.: _____	

Priority: <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input checked="" type="checkbox"/> Unknown	Funding Source: <input checked="" type="checkbox"/> RP <input type="checkbox"/> LTF <input type="checkbox"/> EF <input type="checkbox"/> SF <input type="checkbox"/> None <input type="checkbox"/> Other (describe below) <input type="checkbox"/> EPA Emergency Response	Enforcement Authority: <input checked="" type="checkbox"/> Spill Law s. 292.11 Wis. Stats. <input type="checkbox"/> Envir. Repair Law s. 292.31 Wis. Stats. <input type="checkbox"/> Solid Waste NR 500 <input type="checkbox"/> CERCLA <input type="checkbox"/> Aband. Container s. 292.41 Wis. Stats. <input type="checkbox"/> Other: _____ <input type="checkbox"/> Wastewater (lagoons) <input type="checkbox"/> Haz Waste NR600
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New Folder? Y N
 Your Initials _____

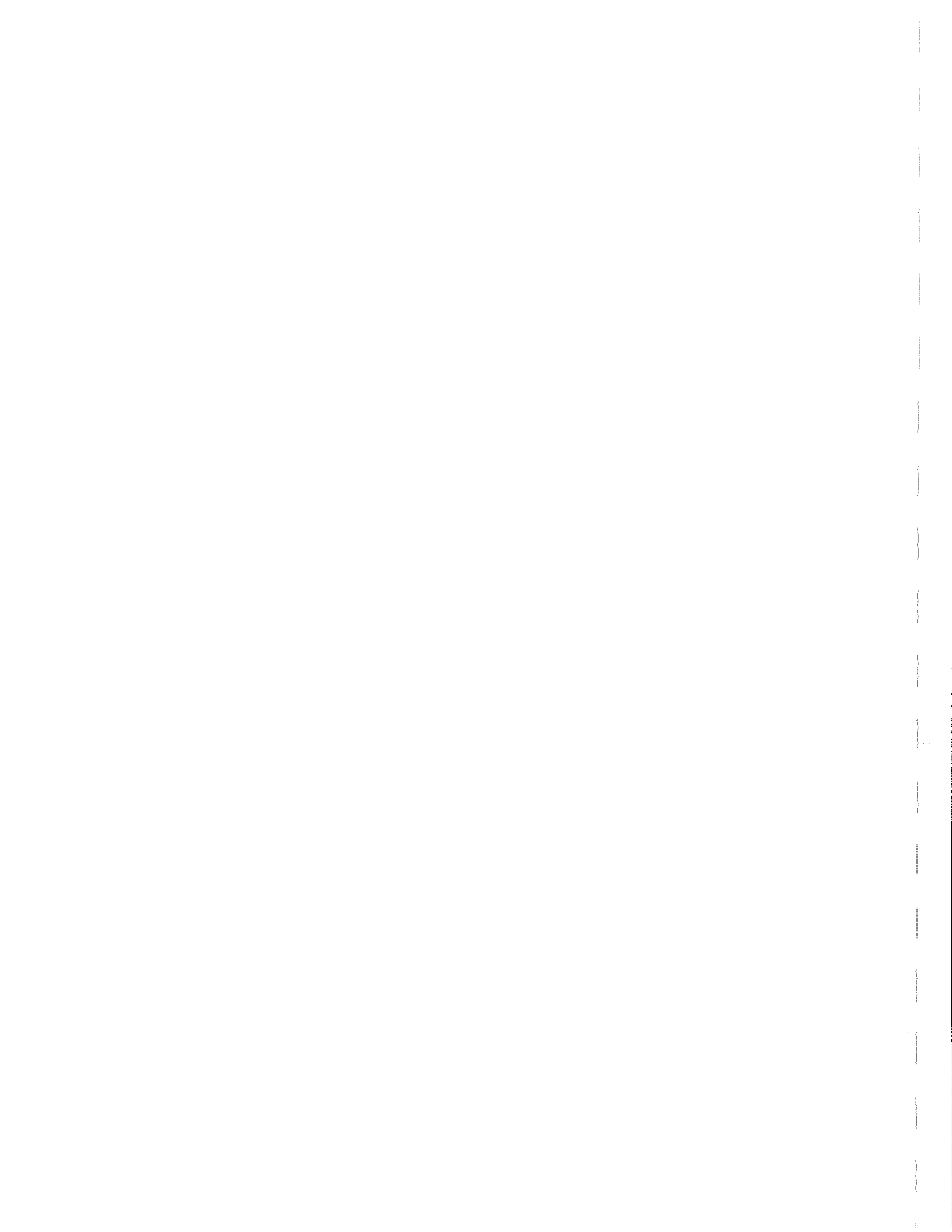
*****PROGRAMS INVOLVED: (L = Lead, S = Support)*****

<input checked="" type="checkbox"/> Abandoned Containers	<input type="checkbox"/> NR 500 Solid Waste	<input type="checkbox"/> Water Supply	<input type="checkbox"/> DATCP
<input checked="" type="checkbox"/> LUST	<input type="checkbox"/> Spills	<input type="checkbox"/> Water Resources	<input type="checkbox"/> DCOM
<input type="checkbox"/> NR 600 Hazardous Waste	<input type="checkbox"/> Superfund	<input type="checkbox"/> Environmental Repair	<input type="checkbox"/> Code 76

RESPONSIBLE PARTY is a <input type="checkbox"/> Company or a <input type="checkbox"/> Person Company Name: <u>see above</u> Contact Person: <u>Pastor Joseph Broth</u> Address: _____ Phone: <u>(414) 626-8337</u> CC: _____ <u>6337</u>	CONSULTANT: Company Name: _____ Contact Name: _____ Address: <u>1800 W Rogers</u> <u>Appleton 54914</u> Phone: () _____ CC: (EG: lab) _____
---	---

IMPACTS: (enter P for potential, K for known) <input type="checkbox"/> Fire/Explosion Threat <input type="checkbox"/> Contaminated Private Well(s) _____ No. of Wells <input type="checkbox"/> Contaminated Public Well <input checked="" type="checkbox"/> Groundwater Contamination <input checked="" type="checkbox"/> Soil Contamination <input type="checkbox"/> Surface Water Impacts <input type="checkbox"/> Free Product <input type="checkbox"/> Storm Sewer Contam. <input type="checkbox"/> Sanitary Sewer Contam. <input type="checkbox"/> Air Contamination <input type="checkbox"/> Direct Contact <input type="checkbox"/> Concrete/Asphalt <input type="checkbox"/> Contained/Recovered <input type="checkbox"/> Other: _____	<table style="width:100%;"> <thead> <tr> <th style="text-align: left;">SUBSTANCES:</th> <th style="text-align: center;">#Tanks/containers</th> <th style="text-align: center;">Size</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> Leaded Gas</td><td>_____</td><td>_____</td></tr> <tr><td><input checked="" type="checkbox"/> Unleaded Gas</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Diesel</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Fuel Oil</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Unknown Hydrocbrn</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Waste Oil</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Metals</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> RCRA Haz. Waste</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> VOCs</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Chlorinated Solvent</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> PCBs</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Foundry Sand</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Misc. Fill</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Pesticides</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Leachate</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> PAHs/SVOCs</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Oil & Grease</td><td>_____</td><td>_____</td></tr> <tr><td><input type="checkbox"/> Other</td><td>_____</td><td>_____</td></tr> </tbody> </table>	SUBSTANCES:	#Tanks/containers	Size	<input type="checkbox"/> Leaded Gas	_____	_____	<input checked="" type="checkbox"/> Unleaded Gas	_____	_____	<input type="checkbox"/> Diesel	_____	_____	<input type="checkbox"/> Fuel Oil	_____	_____	<input type="checkbox"/> Unknown Hydrocbrn	_____	_____	<input type="checkbox"/> Waste Oil	_____	_____	<input type="checkbox"/> Metals	_____	_____	<input type="checkbox"/> RCRA Haz. Waste	_____	_____	<input type="checkbox"/> VOCs	_____	_____	<input type="checkbox"/> Chlorinated Solvent	_____	_____	<input type="checkbox"/> PCBs	_____	_____	<input type="checkbox"/> Foundry Sand	_____	_____	<input type="checkbox"/> Misc. Fill	_____	_____	<input type="checkbox"/> Pesticides	_____	_____	<input type="checkbox"/> Leachate	_____	_____	<input type="checkbox"/> PAHs/SVOCs	_____	_____	<input type="checkbox"/> Oil & Grease	_____	_____	<input type="checkbox"/> Other	_____	_____
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entered in BRRTS ___/___/___ by _____ (initials)



**LUST Investigation Field Procedures Workplan – METCO
Kewaskum Living Waters Church**

APPENDIX F/HEALTH AND SAFETY PLAN

SAFETY PLAN INFORMATION

Code: METCO METCO Project No: C2094
 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: Kewaskum Living Waters Church
 Site Address: 100 Clinton Street Site Address City: Kewaskum
 Site Address State: WI Site Address Zip Code: 53040 Site Address County: Washington
 WDNR Contact: Christine Lilek Fire Dept. Contact: Shawano Rural Fire
 Project Date: 4/1/2013 Tank Removal Contractor:
 General Contractor: METCO

TANK INFORMATION

Tank Sizes/Contents		
Tank 1:	300	Contents: Gasoline Age: Removed
Tank 2:		Contents: Age:
Tank 3:		Contents: Age:
Tank 4:		Contents: Age:
Tank 5:		Contents: Age:
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 checked="" 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 <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): <input type="checkbox"/>	

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.	Vapor/Liq	Inh/Skin	25-300 PPM	
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	Action
0-10% LFL No Explosion Hazard	None
Action Levels	Action
Normal: 21%	None
Oxygen Deficient: Less than 21%	Notify Health & Safety Officer
Oxygen Deficient: Less than 19.5%	Evacuate

Photoionization Detector: Flame Ionization Detector: Detector Tubes:

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: Kewaskum

911

Hospital Emergency Room: St Joseph's Community Hospital

(262) 334-5533

Poison Control Center: Milwaukee

(800) 222-1222

Police Kewaskum

911

Fire Dept: Kewaskum

911

Hazardous Waste Response Center:

800-943-0003 Wisconsin
EPA 800-424-8802

Location Address: 100 Clinton Street, Kewaskum, WI

EMERGENCY ROUTES (attach maps)

Hospital: St Joseph's Community Hospital (3200 Pleasant Valley Road, West Bend, WI) - Travel east on Clinton Street 1/2 block to Fond du Lac Avenue (STH 45). Turn right on STH 45 and travel south approximately 11 miles to the south side of West Bend. Get off STH 45 at the Pleasant Valley Road (CTH PV) exit and turn right onto Pleasant Valley Road. Travel approximately 1/8 mile 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

home (608)489-2236

Engineer/Architect Contact:

(262) 626-8337

Client Contact: Joan Brath

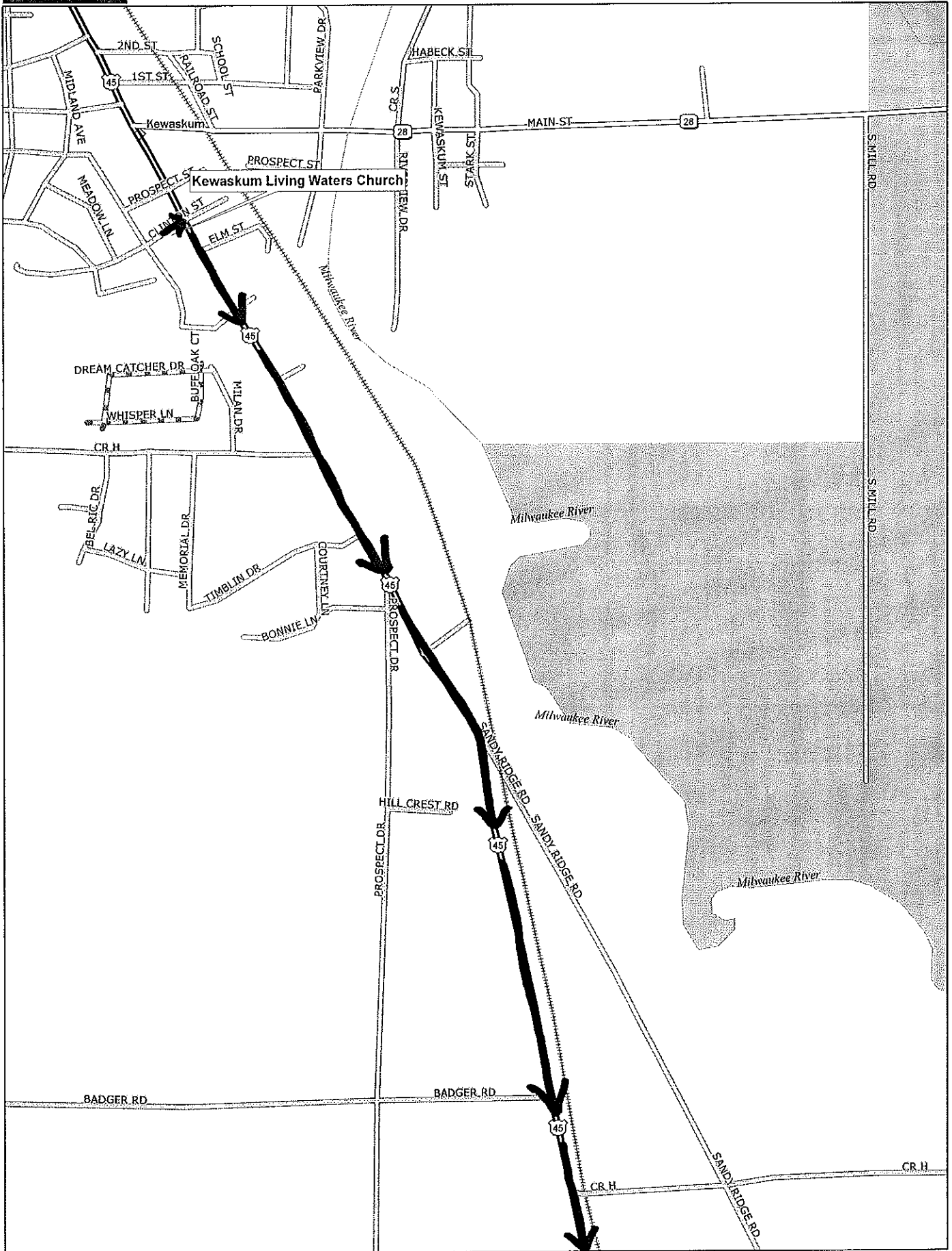
METCO Corporate Contact: Paul Knower

home (608)489-2659

work 1-800-236-0448

DAILY SAFETY PLAN CHECK

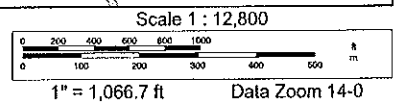
- 1. Hard-hat**
- 2. Visible fire extinguisher**
- 3. Safety glasses**
- 4. Hearing protection**
- 5. No smoking on site**
- 6. Safety data sheet**
- 7. Route to hospital**
- 8. Barricades (cones, flags, fences, vehicle)**
- 9. Emergency phone numbers**
- 10. Know where the job site book is**

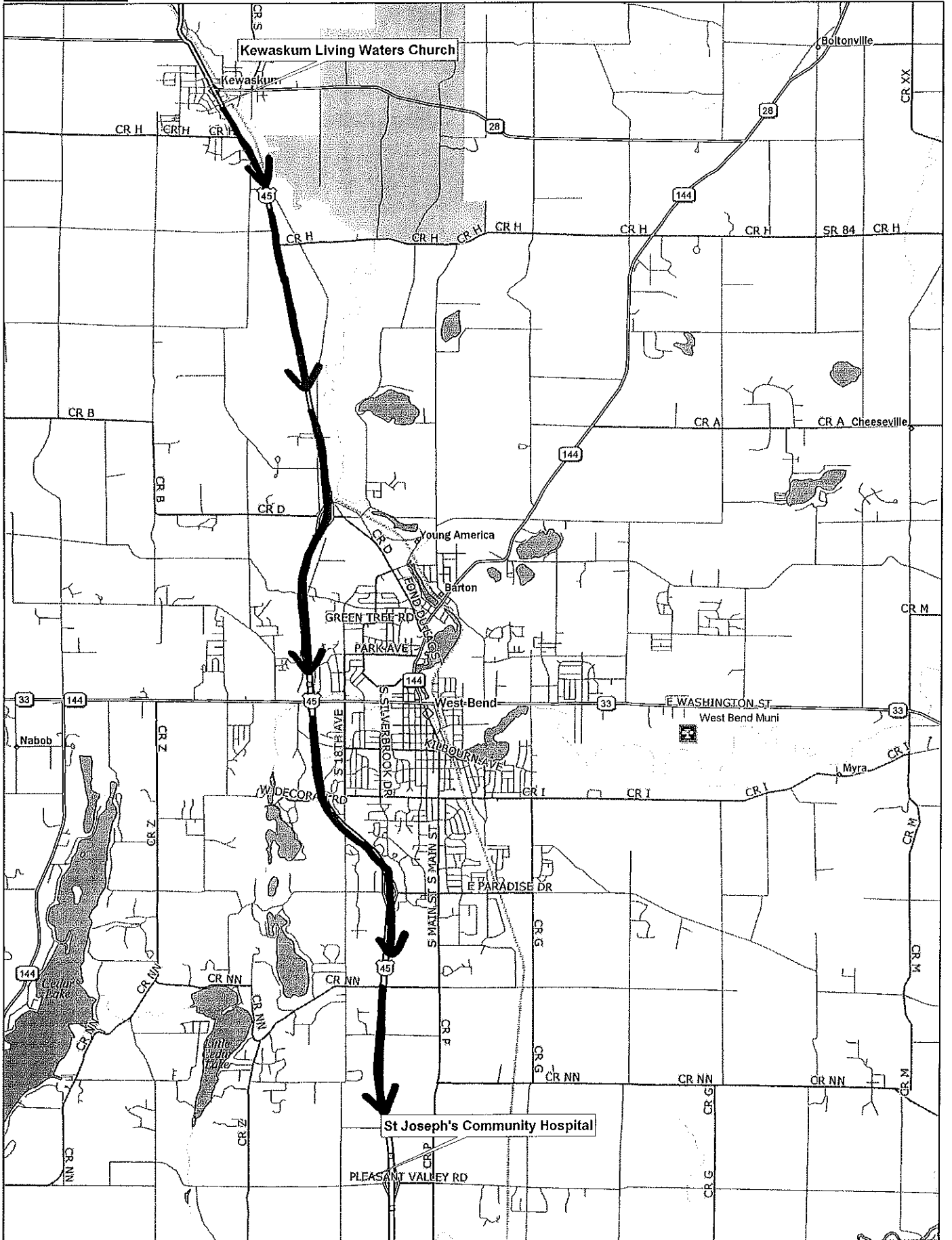


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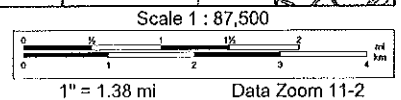


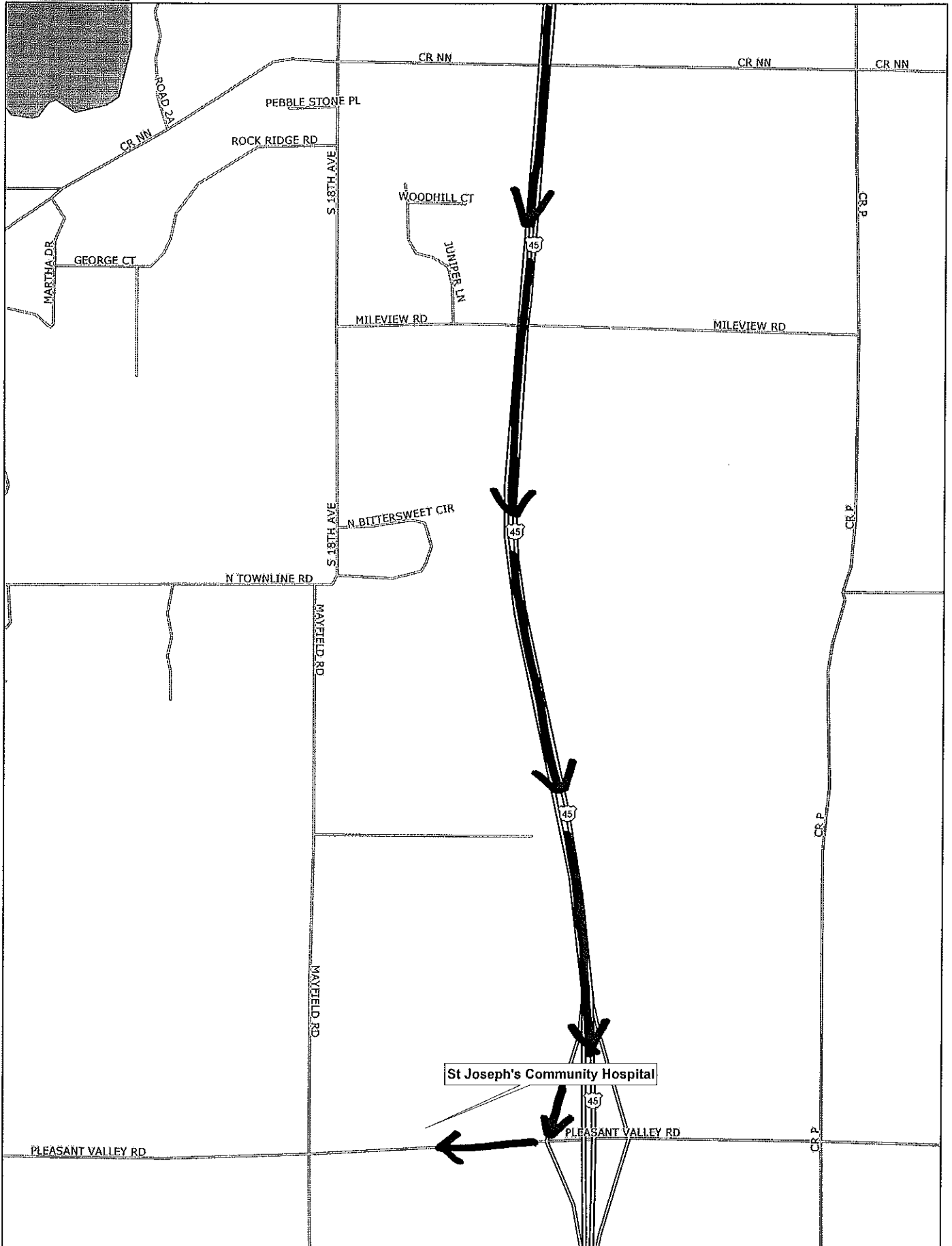


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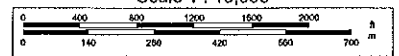
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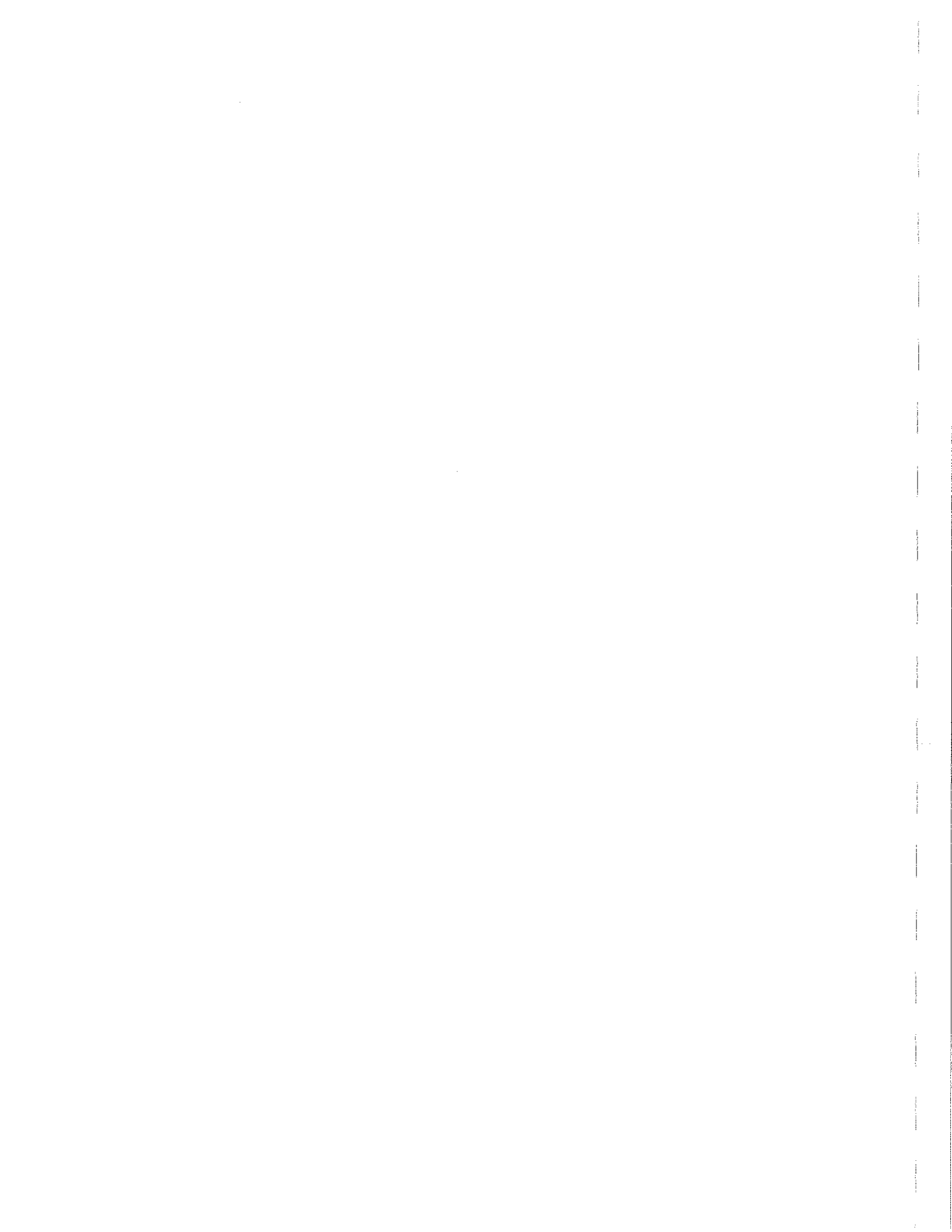


Scale 1 : 16,000



1" = 1,333.3 ft

Data Zoom 13-6



**LUST Investigation Field Procedures Workplan – METCO
Kewaskum Living Waters Church**

APPENDIX G/QUALIFICATIONS

**LUST Investigation Field Procedures Workplan - METCO
Kewaskum Living Waters Church**

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
Kewaskum Living Waters Church**

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.

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Kewaskum Living Waters Church**

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 Safety and Professional Services 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.

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Kewaskum Living Waters Church**

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
Kewaskum Living Waters Church**

Brandon A. Walker

Professional Title

- Staff Scientist

Credentials

- Registered through the Wisconsin Department of Safety and Professional Services 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.

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Matt Michalski

Professional Title

- Staff Scientist

Credentials

- Registered through the Wisconsin Department of Safety and Professional Services as a PECFA consultant (# 1228116).

Education

Includes B.S. In Geography from University of Wisconsin – La Crosse: Applicable courses successfully completed include Geographic Field Methods, Water Resources, Environmental Hazards and Land Use, and Advanced Map Design.

Work Experience

With METCO since August 2012 as Staff Scientist. Duties include: soil and groundwater sampling, operation and maintenance of remedial systems, geoprobe projects (oversight, direction, and sampling), site mapping, data reduction and analysis, and reporting.