Wisconsin Department of Natural Resources

Case Closure - GIS Registry
NR 4400-202

For: Emerald Service Station
BRRTS # 03-56-000393
PECFA # 54013-9999-00-A

October 31, 2014

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October 31, 2014

BRRTS#: 03-56-000393
PECFA#: 54013-9999-00

Deena Kinney, Environmental Program Associate
WDNR Remediation and Redevelopment Program
West Central Region
1300 West Clairemont Avenue
Eau Claire, WI 54701

RE: Emerald Service Station - Closure Review and GIS Registry Fees

Dear Ms. Kinney,

The complete closure submittal is being sent to Patrick Collins of the Wisconsin Department of Natural Resources. Please note that the WDNR Closure Review fee and GIS Registry fee (Soil and Groundwater) for the Emerald Service Station site (BRRTS #: 03-56-000393) are not being submitted as Ms. Potter is on a fixed income and does not have the wherewithal to pay the required $1700.00 Closure and GIS fees at this time.

Sincerely,

Jason T. Powell
Staff Scientist

c: Katherine Potter - Client

Table of Contents

WDNR Case Summary and Case Closure – GIS Registry Form

Attachment A/Data Tables

Attachment B/Maps and Figures

Attachment C/Documentation of Remedial Action

Attachment D/Maintenance Plan(s)

Attachment E/Monitoring Well Information

Attachment F/Notification to Owners of Impacted Properties

Attachment G/Source Legal Documents

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Case Closure - GIS Registry

SUBMIT AS UNBOUND PACKAGE IN THE ORDER SHOWN

Notice: Pursuant to ch. 292, Wis. Stats., and chs. NR 726 and 746, Wis. Adm. Code, this form is required to be completed for case closure requests. The closure of a case means that the Department of Natural Resources (DNR) has determined that no further response is required at that time based on the information that has been submitted to the DNR. All sections of this form must be completed unless otherwise directed by the Department. Incomplete forms will be considered "administratively incomplete" and processing of the request will stop until required information is provided. Any section of the form not relevant to the case closure request must be fully filled out or explained on a separate page and attached to the relevant section of this form. DNR will consider your request administratively complete when the form and all sections are completed, all attachments are included, and the applicable fees required under ch. NR 749, Wis. Adm. Code, are included, and sent to the proper destinations. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Site Information

BRRTS No.	Parcel ID No.		
03-56-000393	016-1040-90-050		
BRRTS Activity (Site) Name	WTM Coordinates		
	X	Y	
Emerald Service Station	342318	514534	
Street Address	City	State	ZIP Code
1547 County Road D	Emerald	WI	54013

Responsible Party (RP) Name
Katherine Potter
Company Name

Street Address	City	State	ZIP Code
1547 County Road D	Glenwood City	WI	54013
Phone Number	Email		

☒ Check here if the RP is the owner of the source property.

Environmental Consultant Name
Ron Anderson
Consulting Firm
METCO

Street Address	City	State	ZIP Code
709 Gillette Street, Suite 3	La Crosse	WI	54603
Phone Number	Email		
(608) 781-8879	rona@metcohq.com		
Acres Ready For Use			
0.5	Voluntary Party Liability Exemption Site? ○ Yes ◉ No		

Fees and Mailing of Closure Request

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

1. **Send a copy of page one** of this form and the applicable ch. NR 749, Wis. Adm. Code, fee(s) to the DNR regional Environmental Program Associate at **http://dnr.wi.gov/topic/Brownfields/Contact.html**. Check all fees that apply:

   ☒ $1,050 Closure Fee

   ☒ $300 Database Fee for Soil

   ☒ $350 Database Fee for Groundwater or Other Condition (MW Not Abandoned)

   Total Amount of Payment $ $1,700.00

2. **Send one paper copy and one e-copy on compact disk of the entire closure package** to the Regional Project Manager assigned to your site. Submit as *unbound, separate documents* in the order and with the titles prescribed by this form. For electronic document submittal requirements, see **http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.**

Site Summary

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

1. General Site Information and Site History

A. **Site Location**: Describe the physical location of the site, both generally and specific to its immediate surroundings.
The subject property is located in the NW 1/4 of the SW 1/4 of Section 18, Township 30 North, Range 15 West, St. Croix County, Wisconsin. The property consist of one tax parcel (PID# 016-1040-90-050) and is bound by County Road D to the west, residential properties to the north and east (1549 Cty Rd D & 1543 Cty Rd D, respectively), and an agricultural/ residential property to the south (1541 Cty Rd D).

B. **Prior and current site usage**: Specifically describe the current and historic occupancy and types of use.
A gas station operated on the subject property from approximately the 1950's until 1972. Former UST's include a 1,000-gallon leaded gasoline and a 2,000-gallon leaded gasoline. The UST's were removed on August 20, 1992. Currently the subject property is used for residential purposes.

C. Describe how and when site contamination was discovered.
On July 30, 1990, Gottfried Environmental Services completed three soil borings in the area of the UST's during a Preliminary Site Assessment. Soil samples were collected from the bottom of each boring at depths ranging from 66 to 75 inches below ground surface (bgs) for PID analysis. PID analysis indicated that petroleum contamination was present in all three soil samples (T-1, T-2, and T-3). The two soil samples (T-1 and T-3) indicating the highest PID response were submitted for laboratory analysis (BTEX and FID-gasoline). Laboratory analysis confirmed the presence of petroleum contamination and was subsequently reported to the WDNR. The WDNR then required that a site investigation be conducted at the Emerald Service Station property.

D. Describe the type(s) and source(s) or suspected source(s) of contamination.
Leaded gasoline appears to have been released from at least one of the former UST systems.

E. Other relevant site description information (or enter Not Applicable).
Not Applicable

F. List BRRTS activity site name and number for all other BRRTS activities at this property, including closed cases.
No other BRRTS activities exist at the subject property.

G. List BRRTS activity/site name(s) and number(s) for all properties immediately adjacent to this site, and those impacted by contamination from this site.
No other BRRTS activities exist for any of the adjacent properties.

H. **Current zoning** (e.g. industrial, commercial, residential) for the site and for neighboring properties, and how verified (Provide documentation in Attachment G).
According the the St. Croix County GIS the subject property (1547 Cty Rd D) and adjacent properties to the north and east (1549 Cty Rd D & 1543 Cty Rd D, respectively) are all zoned G1 (Residential). The adjacent property to the south (1541 Cty Rd D) is zoned both G4 (Agricultural) and G1 (Residential).

2. General Site Conditions

A. Soil/Geology

i. Describe soil type(s) and relevant physical properties, thickness of soil column across the site, vertical and lateral variations in soil types.
Local unconsolidated material generally consists of 4 to 6 feet of a clay to sandy clay with some gravel, underlain by 6 to 9 feet of a fine to coarse grained sand to clayey sand with gravel, underlain by at least 1 to 2 feet of a sandy silt/clay with some gravel.

ii. Describe the composition, location and lateral extent, and depth of fill or waste deposits on the site.
Fill material consisting of sand and gravel to clayey sand with gravel was encountered in the area of the removed UST systems.

iii. Depth to bedrock, bedrock type, and whether or not it was encountered during the investigation.
Bedrock was not encountered during the site investigation, but sandstone bedrock is believed to exist at approximately 50 to100 feet bgs, based on local well construction reports.

iv. Describe the nature and locations of current surface cover(s) across the site (e.g. natural vegetation, landscaped areas, gravel, hard surfaces, and buildings).
The majority of the property is currently covered in grass, except for the area directly west of the former service station building. A concrete pad measuring approximately 15 feet wide and 38 feet long exists immediately to the west of the building. Gravel exists to the north, west, and south of the concrete pad. Please see the attached B.1.b Detailed Site Map for the location and extent of the current surface overs at the site.

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B. Groundwater

i. **Discuss depth to groundwater and piezometric elevations.** Describe and explain depth variations, and whether free product affects measurement or water table elevation. Describe the stratigraphic unit(s) where water table was found or which were measured for piezometric levels.

Based on the data collected during the site investigation, perched groundwater appears to be present in the area of the subject property. During the Geoprobe project, perched groundwater was encountered at depths ranging from approximately 3 to 9 feet bgs within a fine to coarse grained sand to clayey sand. Based on local well construction reports, the deeper watertable used for local potable water supply exists at approximately 100 feet bgs.

ii. Discuss groundwater flow direction(s), shallow and deep. Describe and explain flow variations, including fracture flow if present.

Based on the results of the geoprobe groundwater samples, contamination in the perched groundwater appears to be migrating toward the south, indicating a southerly groundwater flow direction. Groundwater flow direction is not known for the deeper watertable, but is expected to be generally towards the south to southwest.

iii. Discuss groundwater flow characteristics: hydraulic conductivity, flow rate and permeability, or state why this information was not obtained.

Monitoring wells were not installed as part of this site investigation, but it appears that the perched groundwater is located within a fine to coarse grained sand to clayey sand. However, due to the lack of monitoring wells at this site or other nearby properties there is no data available to calculate the flow rate of the water within the perch groundwater at this site.

iv. Identify and describe locations/distance of potable and/or municipal Wells within 1200 feet of the site.

The subject property and surrounding properties are all served by private potable wells. There are potentially as many as 25 to 40 potable wells located within 1,200 feet of the subject property. The locations of eight of these were identified during the site investigation which are listed below.

Address	Distance From Removed UST System	Sampled (Y/N)	Notes:
1547 Cty Rd D (on-site)	70 feet southeast	Yes	VOC -524.2
1549 Cty Rd D	60 feet northeast	No	Access denied
1546 Cty Rd D	125 feet nothwest	No	Vacant
2698 154th Ave	180 feet west	Yes	VOC -524.2
2695 155th Ave	250 feet west-northwest	Yes	VOC -524.2
1543 Cty Rd D	230 feet southeast	Yes	VOC -524.2
1541 Cty Rd D	300 feet southeast	Yes	VOC -524.2
2685 Cty Rd D	390 feet southwest	Yes	VOC -524.2

3. Site Investigation Summary

A. General

i. Provide a brief summary of the site investigation history. Reference previous submittals by name and date. Describe site investigation activities undertaken since the last submittal for this project and attach the appropriate documentation in Attachment C, if not previously provided.

On April 16, 2013, Geiss Soil & Samples, LLC of Merrill, WI conducted a Geoprobe Project under the direction and supervision of METCO personnel. Fourteen Geoprobe borings were advanced to depths ranging from 8 to 14 feet bgs. Forty soil samples were collected for field analysis (PID) and geologic description. Fifteen soil samples were also submitted for laboratory analysis (GRO, VOC, PVOC, Naphthalene, and/or Lead). Fourteen groundwater samples were collected from the Geoprobe borings for laboratory analysis (PVOC and Naphthalene) and a water sample was collected from the on-site potable well for laboratory analysis (VOC-524.2). Site Investigation Report

On March 25, 2014, METCO personnel collected water samples from the on-site potable well and five neighboring potable wells (1541 and 1543 Cty Rd D, 2685 and 2698 154th Avenue, and 2695 155th Avenue) for laboratory analysis (VOC-524.2). Site Investigation Report

ii. Identify whether contamination extends beyond the source property boundary, describe the off-site media (e.g., soil, groundwater, etc.) impacted, and the vertical and horizontal extent of off-site impacts.

Soil contamination exceeding the NR720 Groundwater RCLs extends approximately 21 feet west of the property boundary into the right of way of County Road D.

Groundwater contamination exceeding the NR140 Enforcement Standards and/or Preventive Action Limits extends approximately 15 feet west of the property boundary into the right of way of County Road D.

iii. Identify any structural impediments to the completion of site investigation and/or remediation and whether these impediments are on the source property or off the source property. Identify the type and location of any structural impediment (e.g., structure) that also serves as the performance standard barrier for protection of the direct contact or the groundwater pathway.

No structural impediments were encountered to the completion of site investigation and/or remediation.

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B. Soil

i. Describe degree and extent of **soil contamination** at and from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways.

An area of unsaturated soil contamination, which exceeds the NR720 Groundwater and/or Direct Contact RCLs was encountered in the area of the removed UST systems. This soil contamination plume appears to measure approximately 35 feet long, up to 32 feet wide, and extends to the perched watertable (approximately 3 to 7 feet feet bgs). One unsaturated soil sample (G-1-1) showed a NR720 Direct Contact RCL exceedance for Lead.

ii. Describe the level and types of **soil contaminants** found in the upper four feet of the soil column.

One soil sample (G-1-1) collected at 3.5 feet bgs exceeded the NR720 Direct Contact RCL for Lead (448 ppm). Four soil samples (G-1-1, G-2-1, G-4-1, and G-14-1) showed NR720 groundwater exceedances for PVOCs and/or Lead within the upper four feet of the soil column.

iii. Identify the ch. NR 720, Wis. Adm. Code, method used to establish the soil cleanup standards for this site. This includes a soil performance standard established in accordance with s. NR 720.08, a Residual Contaminant Level (RCL) established in accordance with s. NR 720.10 that is protective of groundwater quality, or an RCL established in accordance with s. NR 720.12 that is protective of human health from direct contact with contaminated soil. Identify the land use classification that was used to establish cleanup standards. Provide a copy of the supporting calculations/ information in Attachment C.

Residual Contaminant Levels (RCLs) were established in accordance with NR 720.10 and NR 720.12. Soil RCLs for the protection of the groundwater pathway and for non-industrial direct contact were taken from the RR programs RCLs spreadsheet.

C. Groundwater

i. Describe degree and extent of groundwater contamination at or from this site. Relate this to known or suspected sources and known or potential receptors/migration pathways. Specifically address any potential or existing impacts to water supply wells or interception with building foundation drain systems.

A dissolved phase contaminant plume exceeding the NR140 Enforcement Standards and Preventive Action Limits has formed at the perched watertable in the area of the removed UST systems and has migrated toward the south. This plume is approximately 42 feet long and 25 feet wide.

Based on the receptor survey, there appears to be no risks associated with the existing contamination from this site concerning vapor intrusion, utility corridors, or surface waters.

Private potable water supply wells exist in the area of the subject property. However, sampling of the on-site potable well and five other nearby potable wells did not show any petroleum impacts to these wells.

ii. Describe the presence of free product at the site, including the thickness, depth, and locations.

Free product was not encountered during the site investigation.

D. Vapor

i. Describe how the vapor migration pathway was assessed, including locations where vapor or indoor air samples were collected. If the vapor pathway was not assessed, explain reasons why.

The on-site building consists of a one story building constructed on an on-grade concrete slab. One Geoprobe boring (G-2) was conducted near the on-site residence to assess the potential for vapor intrusion. The soil analytical results from G-2 only showed NR720 Groundwater RCL exceedances for Benzene (0.067 - 0.096 ppm). The groundwater analytical results from G-2 showed several low level detects for Benzene (0.34 ppb), Ethylbenzene (0.70 ppb), and Xylene (1.82 ppb), but did not exceed the NR140 Enforcement Standards or Preventive Action Limits. Based on the low levels of soil and groundwater contamination detected in Geoprobe boring G-2, there does not appear to be a significant risk of vapor intrusion to the on-site residence.

ii. Identify the applicable DNR action levels and the land use classification used to establish them. Describe where the DNR action levels were reached or exceeded (e.g., sub slab, indoor air or both).

No vapor samples were collected as part of the site investigation.

E. Surface Water and Sediment

i. Identify whether surface water and/or sediment was assessed and describe the impacts found. If this pathway was not assessed, explain why.

The nearest surface water is an intermittent unnamed creek, which exists approximately 300 feet to the south of the subject property. Based on the results of the Geoprobe project, the petroleum contamination does not appear to have impacted any surface waters.

ii. Identify any surface water and/or sediment action levels used to assess the impacts for this pathway and how these were derived. Describe where the DNR action levels were reached or exceeded.

No surface waters or sediments were assessed as part of the site investigation.

Save...

4. Remedial Actions Implemented and Residual Levels at Closure

A. General: Provide a brief summary of the remedial action history. List previous remedial action report submittals by name and date. Identify remedial actions undertaken since the last submittal for this project and provide the appropriate documentation in Attachment C.

No remedial activities occurred as part of this site investigation.

B. Describe any immediate or interim actions taken at the site under ch NR 708, Wis. Adm. Code.

No immediate or interim actions occurred as part of this site investigation.

C. Describe the *active* remedial actions taken at the site, including: type of remedial system(s) used for each media impacted; the size and location of any excavation or in-situ treatment; the effectiveness of the systems to address the contaminated media and substances; operational history of the systems; and summarize the performance of the active remedial actions. Provide any system performance documentation in Attachment A.7.

No active remedial actions occurred as part of this site investigation.

D. Provide a discussion of the nature, degree and extent of residual contamination that will remain at the site or on off-site affected properties after case closure.

An area of unsaturated soil contamination, which exceeds the NR720 Groundwater and/or Direct Contact RCLs was encountered in the area of the removed UST systems. This soil contamination plume appears to measure approximately 35 feet long, up to 32 feet wide, and extends to the perched watertable (approximately 3 to 7 feet feet bgs). One unsaturated soil sample (G-1-1) showed a NR720 Direct Contact RCL exceedance for Lead.

A dissolved phase contaminant plume exceeding the NR140 Enforcement Standards and Preventive Action Limits has formed in the perched groundwater in the area of the removed UST systems and has migrated toward the south. This plume is approximately 42 feet long and 25 feet wide.

The extent of soil and groundwater contamination has migrated into the right of way of County Road D, but has not impacted any neighboring properties.

E. Describe the remaining soil contamination within four feet of ground surface (direct contact zone) that attains or exceeds Residual Contaminant Levels established under s. NR 720. 12 , the ch. NR720, Wis. Adm. Code, for protection of human health from direct contact.

One soil sample (G-1-1) collected at 3.5 feet bgs exceeded the NR720 Direct Contact RCL for Lead (448 ppm).

F. Describe the remaining soil contamination in the vadose zone that attains or exceeds the soil standard(s) for the groundwater pathway.

An area of unsaturated soil contamination, which exceeds the NR720 Groundwater and/or Direct Contact RCLs was encountered in the area of the removed UST systems. This soil contamination plume appears to measure approximately 35 feet long, up to 32 feet wide, and extends to the perched watertable (approximately 3 to 7 feet feet bgs).

G. Describe how the residual contamination will be addressed, including but not limited to details concerning: covers, engineering controls or other barrier features; use of natural attenuation of groundwater; and vapor mitigation systems or measures.

Residual soil contamination exceeding the NR720 Direct Contact RCLs in the area of Geoprobe boring G-1 (former dispenser island) can be addressed through the use of a cap maintenance plan for the concrete pad which currently exists over this area. Soil contamination exceeding the NR720 Groundwater RCLs and groundwater contamination exceeding the NR140 Enforcement Standard and/or Preventive Action Limit can by addressed through natural attenuation.

H. If using natural attenuation as a groundwater remedy, describe how the data collected supports the conclusion that natural attenuation is effective in reducing contaminant mass and concentration, (e.g. stable or receding groundwater plume).

Due to the fact that this release is over 20 years old and the extent of residual groundwater contamination is confined to a relatively small area in the vicinity of the removed UST systems, it appears that natural attenuation has been effectively reducing the contaminant mass.

I. Identify how all exposure pathways were removed and/or adequately addressed by immediate and/or remedial action(s) described above in paragraphs, B, C, D, E and F.

Residual soil contamination exceeding the NR720 Direct Contact RCLs in the area of Geoprobe boring G-1 (former dispenser island) can be addressed through the use of a cap maintenance plan for the concrete pad which currently exists over this area. Soil contamination exceeding the NR720 Groundwater RCLs and groundwater contamination exceeding the NR140 Enforcement Standard and/or Preventive Action Limit can by addressed through natural attenuation.

J. Identify any system hardware anticipated to be left in place after site closure, and explain the reasons why it will remain.

No system hardware was installed as part of this site investigation.

K. Identify the need for a ch. NR 140, Wis. Adm. Code, groundwater Preventive Action Limit (PAL) or Enforcement Standard (ES) exemption, and identify the affected monitoring points and applicable substances.

Groundwater sample G-1-W showed NR140 ES exceedances for Benzene (44 ppb), Ethylbenzene (790 ppb), Naphthalene

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(780 ppb), Trimethylbenzenes (5,500 ppb), and Xylenes (6,090 ppb) as well as an NR140 PAL exceedance for Toluene (313 ppb).

Groundwater sample G-3-W showed NR140 ES exceedances for Naphthalene (271 ppb), Trimethylbenzenes (1,930 ppb), and Xylenes (2,670 ppb) as well as an NR140 PAL exceedance for Ethylbenzene (330 ppb).

Groundwater sample G-4-W showed NR140 PAL exceedances for Naphthalene (41 ppb) and Trimethylbenzenes (381 ppb).

L. If a DNR action level for vapor intrusion was exceeded (for indoor air, sub slab, or both) describe where it was exceeded and how the pathway was addressed.
No vapor samples were collected during this site investigation.

M. Describe the surface water and/or sediment contaminant concentrations and areas after remediation. If a DNR action level was exceeded, describe where it was exceeded and how the pathway was addressed.
No surface waters or sediments were assessed as part of this investigation.

5. Continuing Obligations: Situations where a maintenance plan(s) and inclusion on DNR's GIS Registry are required.

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: Maintenance Plans and GIS Registry	Maintenance Plan (s) Required in Attachment D	GIS Registry Listing
	A. On-Site	B. Off-Site			
i.	☒	☐	Engineering Control/Barrier for Direct Contact	✓	✓
ii.	☐	☐	Engineering Control/Barrier for Groundwater Infiltration	✓	✓
iii.	☐	☐	Vapor Mitigation - post closure passive system	✓	✓
iv.	☐	☐	Vapor Mitigation - post closure active system	✓	✓
v.	☐	☒	None of the above scenarios apply to this case closure	NA	NA

6. Continuing Obligations: Situations where inclusion on DNR's GIS Registry is required.

Directions: Check all that apply to this case closure request:

	This scenario Applies to this Case Closure		Case Closure Scenario: GIS Registry Only	GIS Registry Listing
	A. On-Site	B. Off-Site		
i.	☒	☒	Residual soil contamination exceeds ch. NR 720 generic or site-specific RCLs	✓
ii.	☒	☒	Sites with groundwater contamination equal to or greater than the ch. NR 140, enforcement standards (ES)	✓
iii.	☐	☐	Monitoring wells: lost, transferred or remaining in use	✓
iv.	☐	☐	Structural Impediment (not as a performance standard)	✓
v.	☐	☐	Residual soil contamination remaining at ch. NR 720 Industrial Use levels	✓
vi.	☐	☐	Vapor intrusion may be future, post-closure issue if building use or land use changes	✓
vii.	☐	☐	None of the above scenarios apply to this case closure	NA

Save...

7. Underground Storage Tanks

A. Were any tanks, piping or other associated tank system components removed as part of the investigation or remedial action? ○ Yes ◉ No

B. Do any upgraded tanks meeting the requirements of ch. SPS 310, Wis. Adm. Code, exist on the property? ○ Yes ◉ No

C. If the answer to question 7b is yes, is the leak detection system currently being monitored? ○ Yes ○ No

Data Tables (Attachment A)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form.All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General directions for Data Tables:

- Use bold and italics font on information of importance on tables and figures. Use **bold font** for ch. NR 140, Wis. Adm. Code, groundwater enforcement standard (ES) attainments or exceedances, and *italicized font* for ch. NR 140, Wis. Adm. Code, groundwater preventive action limit (PAL) standard attainments or exceedances.
- Do not use shading or highlighting on the analytical tables.
- Include on Data Tables the level of detection for results which are below the detection level (i.e. do not just list as no detect (ND)).
- Include the units on data tables.
- Summaries of all data must include information collected by previous consultants.
- Do not submit lab data sheets unless these have not been submitted in a previous report. Tabulate all data required in s. NR 716.15 (3)(c), Wis. Adm. Code, in the format required in s. NR 716.15(4)(e), Wis. Adm. Code.
- Include in Attachment A all of the following tables, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: A.1. Groundwater Analytical Table; A.2. Pre-remedial Soil Analytical Table, etc).
- For required documents, each table (e.g., A.1., A.2., etc.,) should be a separate PDF.

A. Data Tables

A.1. **Groundwater Analytical Table(s):** Table(s) showing the analytical results and collection dates, for all groundwater sampling points e.g. monitoring wells, temporary wells, sumps, extraction wells, any potable wells and any other wells, extraction wells and any potable wells for which samples have been collected.

A.2. **Pre-remedial Soil Analytical Table(s): T**able(s) showing the soil analytical results and collection dates - prior to conducting the interim and/or remedial action. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).

A.3. **Post-remedial Soil Analytical Table(s):** Table(s) showing the post-remedial action soil analytical results and collection dates. Indicate if sample was collected above or below the all-time low water table (unsaturated verses saturated).

A.4. **Pre and Post Remaining Soil Contamination Soil Analytical Table(s):** Table(s) showing only the pre and post remedial action soil analytical results that exceed a Residual Contaminate Level (RCL) or a Site-Specific Residual Level (SSRCL).

A.5. **Vapor Analytical Table**: Table(s) showing type(s) of samples, sample collection methods, analytical method, sample results, date of sample collection, time period for sample collection, method and results of leak detection, and date, method and results of communication testing.

A.6. **Other Media of Concern (e.g., sediment or surface water)**: Table(s) showing type(s) of sample, sample collection method, analytical method, sample results, date of sample collection, time period for sample collection, method and results sampling.

A.7. **Water Level Elevations:** Table(s) showing all water level elevation measurements and dates from all monitoring wells. If present, free product should be noted on the table.

A.8. **Other:** This attachment should include: 1) any available tabulated natural attenuation data; 2) data tables pertaining to engineered remedial systems that document operational history, demonstrate system performance and effectiveness, and display emissions data; and (3) any other data tables relevant to case closure not otherwise noted above. If this section is not applicable, please explain the reasons why.

Maps and Figures (Attachment B)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions for all Maps and Figures:

- If any map or figure is not relevant to the case closure request, you must fully explain the reason(s) why and attach that explanation (properly labeled with the map/ figure title) in Attachment B.
- Provide on paper no larger than 11 x 17 inches, unless otherwise directed by the Department. Maps and figures may be submitted in a larger electronic size than 11x17 inches, in a portable document format (pdf) readable by the Adobe Acrobat Reader. However, those larger-size documents must be legible when printed.
- Prepare visual aids, including maps, plans, drawings, fence diagrams, tables and photographs according to the applicable portions

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of ss. NR 716.15(4), 726.09(2) and 726.11(3), (5) and (6), Wis Adm. Code.

- Do not use shading or highlights on any of the analytical tables.
- Include all sample locations.
- Contour lines should be clearly labeled and defined.
- Include in Attachment B all of the following maps and figures, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: B.1. Location Map; B.2. Detailed Site Map, etc).
- For the electronic copies that are required, each map (e.g., B.1.a., B.2.a, etc.,) should be a separate PDF.

B.1. Location Maps

B.1.a. **Location Map:** A map outlining all properties within the contaminated site boundaries on a U.S.G.S. topographic map or plat map in sufficient detail to permit easy location of all impacted and/or adjacent parcels. If groundwater standards are exceeded, include the location of all potable wells, including municipal wells, within 1200 feet of the area of contamination.

B.1.b. **Detailed Site Map:** A map that shows all relevant features (buildings, roads, current ground surface cover, individual property boundaries for on-site and applicable off-site properties, contaminant sources, utility lines, monitoring wells and potable wells) within the contaminated area. This map is to show the location of all contaminated public streets, and highway and railroad rights-of-way in relation to the source property and in relation to the boundaries of groundwater contamination exceeding a ch. NR 140 Enforcement Standard (ES), and/or in relation to the boundaries of soil contamination exceeding a Residual Contaminant Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code.

B.1.c. **RR Site Map:** From RR Sites Map (http://dnrmaps.wi.gov/sl/?Viewer=RR Sites) attach a map depicting the source property, and all open and closed BRRTS sites within a half-mile radius or less of the property.

B.2. Soil Figures

B.2.a. **Pre-remedial Soil Contamination:** Figure(s) showing the sample location of all pre-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeded a Residual Contaminant Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code.

B.2.b. **Post-remedial Soil Contamination :** Figure(s) showing the sample location of all post-remedial, unsaturated contaminated soil and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminant Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

B.2.c. **Pre/Post Remaining Soil Contamination:** Figure(s) showing the only location of all pre and post remedial residual soil sample location(s) where unsaturated contaminated soil remains after remediation and a single contour showing the horizontal extent of each area of contiguous residual soil contamination that exceeds a Residual Contaminate Level (RCL) established in accordance with the provisions contained in s. NR 720.10 or s. NR 720.12, Wis. Adm. Code. A separate contour line should be used to indicate the extent of residual direct contact exceedances.

B.3. Groundwater Figures

B.3.a. **Geologic Cross-Section Figure(s):** One or more cross-section diagrams showing soil types and correlations across the site, water table and piezometric elevations, and locations and elevations of geologic rock units, if encountered. Display on one or more figures all of the following:

- Source location(s) and vertical extent of residual soil contamination exceeding a Residual Contaminant Level (RCL) or a Site Specific Residual Contaminant Level (SSRCL).
- Source location(s) and lateral and vertical extent if groundwater contamination exceeds a ch. NR 140 Enforcement Standard (ES)
- Surface features, including buildings and basements, and show surface elevation changes.
- Any areas of active remediation within the cross section path, such as excavations or treatment zones.
- Include a map displaying the cross-section location(s), if they are not displayed on the Detailed Site Map (Map B.1b)

B.3.b. **Groundwater Isoconcentration:** Figure(s) showing the horizontal extent of the post-remedial groundwater contamination exceeding a ch. NR 140, Wis. Adm. Code, Preventive Action Limit (PAL) and/or an Enforcement Standard (ES). Indicate the date and direction of groundwater flow based on the most recent sampling data.

B.3.c. **Groundwater Flow Direction:** Figure(s) representing groundwater movement at the site. If the flow direction varies by more than 20° over the history of the site, submit two groundwater flow maps showing the maximum variation in flow direction.

B.3.d. **Monitoring Wells:** Figure(s) showing all monitoring wells, with well identification number. Clearly designate any wells that: (1) are proposed to be abandoned; (2) cannot be located; (3) are being transferred; (4) will be retained for further sampling, or (5) have been previously abandoned.

B.4. Vapor Maps and Other Media

B.4.a. **Vapor Intrusion Map:** Map(s) showing all locations and results for samples taken to investigate the vapor intrusion pathway, in relation to remaining soil and groundwater contamination, including sub-slab, indoor air, soil vapor,

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ambient air, and communication testing. Show locations and footprints of affected structures and utility corridors, and/or where residual contamination poses a future risk of vapor intrusion.

B.4.b. **Other media of concern (e.g., sediment or surface water**): Map(s) showing all sampling locations and results for other media investigation. Include the date of sample collection and identify where any standards are exceeded.

B.4.c. **Other:** Include any other relevant maps and figures not otherwise noted above. (This section may remain blank)

Documentation of Remedial Action (Attachment C)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

- Include in Attachment C all of the following documentation, in the order prescribed below, with the specific Closure Form titles noted on the separate attachments (e.g., Title: C.1. Site Investigation Documentation; C.2. Investigative Waste, etc).
- If the documentation requested below is "not applicable" to the site-specific circumstances, include a brief explanation to support that conclusion.
- If the documentation requested below has already been submitted to the Department, please note the title and date of the report for that particular document requested.

C.1. **Site investigation documentation,** that has not otherwise been previously submitted.

C.2. **Investigative waste** disposal documentation.

C.3. **Provide a description of the methodology used along with all supporting documentation if the Residual Contaminant Levels are different than those contained in the Department's RCL Spreadsheet available at: http://dnr.wi.gov/topic/Brownfields/Professionals.html.**

C.4. **Construction documentation** or as-built report for any constructed remedial action or portion of, or interim action specified in s. NR 724.02(1), Wis. Adm. Code.

C.5. **Decommissioning of Remedial Systems. I**nclude plans to properly abandon any systems or equipment upon receiving conditional closure.

C.6. **Photos. F**or sites or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system. Include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features should be visible and discernible. Photographs must be labeled with the site name, the features shown, location and the date on which the photograph was taken.

C.7. **Other**. Include any other relevant documentation not otherwise noted above. (This section may remain blank)

Maintenance Plan(s) and Photographs (Attachment D)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

When one or more "maintenance plans" are required for a site closure, include in each maintenance plan all required information listed below, and attach the plan(s) in Attachment D. The following "model" maintenance plans can be located at: (1) Maintenance plan for a engineering control or cover: http://dnr.wi.gov/topic/Brownfields/documents/maintenance-plan.pdf; and (2) Maintenance plan for vapor intrusion: http://dnr.wi.gov/topic/Brownfields/documents/appendix5_606.pdf.

D.1. **Location map(s)** which show(s): (1) the feature that requires maintenance; (2) the location of the feature(s) that require(s) maintenance - on and off the source property; (3) the extent of the structure or feature(s) to be maintained, in relation to other structures or features on the site; (4) the extent and type of residual contamination; and (5) and all property boundaries.

D.2. **Brief descriptions** of the type, depth and location of residual contamination.

D.3. **Description of maintenance action(s)** required for maximizing effectiveness of the engineered control, vapor mitigation system, feature or other action for which maintenance is required.

D.4. **Inspection log**, to be maintained on site, or at a location specified in the maintenance plan or approval letter.

D.5. **Contact information,** including the name, address and phone number of the individual or facility who will be conducting the maintenance.

D.6 Photographs

D.6.a. For site or facilities with a cover or other performance standard, a structural impediment or a vapor mitigation system, include one or more photographs documenting the condition and extent of the feature at the time of the closure request. Pertinent features shall be visible and discernible.

D.6.b. Photographs shall be submitted with a title related to the site name and location, and the date on which it was taken.

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Monitoring Well Information (Attachment E)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

Attach monitoring well construction and development forms (DNR FORM 4400-113 A and B: http://dnr.wi.gov/topic/groundwater/documents/forms/4400_113_1_2.pdf) for all wells that will remain in-use, be transferred to another party or that could not be located. A figure of these wells should be included in Attachment B.3.d.

Select One:

- ◉ No monitoring wells were required as part of this response action.
- ○ All monitoring wells have been located and will be properly abandoned upon the DNR granting conditional closure to the site
- ○ ***Select One or More:***
  - ☐ Not all monitoring wells can be located, despite good faith efforts. Attachment E must include description of efforts made to locate the "lost" wells.
  - ☐ One or more wells will be transferred to another owner upon case closure being granted. Attachment E should include documentation identifying the name, address and email for the new owner(s).
  - ☐ One or more wells will remain in use at the site after this closure. Attachment E must include documentation as to the reason(s) the well(s) will remain in use.

Notifications to Owners of Impacted Properties (Attachment F)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

General Directions:

- State law requires that the responsible party provide a 30-day, written advance notice (i.e., a letter) to certain persons prior to applying for case closure. This requirement applies if: (1) the person conducting the response action does not own the source property; (2) the contamination has migrated onto another property; and/or (3) one or more monitoring wells will not be abandoned.
- Use of Form 4400-286, Notification of Residual Contamination and Continuing Obligations, is required under ch. NR 725 for notifying property owners and right-of-way holders about residual contamination affecting their properties, and of continuing obligations which may be imposed. This form can be downloaded at http://dnr.wi.gov/files/PDF/forms/4400/4400-286.pdf.

Check all that apply to the site-specific circumstances of this case closure:

	A. Impacted Source Property and Owner is not Conducting Cleanup	B. Impacted Right of Way	C. Impacted Off-Site Property Owner	Impacted Property Notification Situations: Ch. NR 726 Appendix A Letter
1.	☐	☒	☐	Residual groundwater contamination exceeds Ch. NR 140 Wis. Administrative Code enforcement standards.
2.	☐	☒	☐	Residual soil contamination that attains or exceeds standards is present after the remedial action is complete, and must be properly managed should it be excavated or removed.
3.	☐	☐	☐	An engineered cover or a soil barrier (e.g. pavement) must be maintained over contaminated soil for direct contact or groundwater infiltration concerns.
4.	☐	☐	☐	Industrial land use soil standards were used for the clean-up standard.
5.	☐	☐	☐	A vapor mitigation system (or other specific vapor protection) must be operated and maintained.
6.	☐	☐	☐	Vapor assessment needed if use changes.
7.	☐	☐	☐	Structural impediment.
8.	☐	☐	☐	Lost, transferred or open monitoring wells.
9.	☒	☐	☒	Not Applicable.

If any of the previous boxes in rows 1 thru 8 were checked, include the following as part of Attachment F:

- FORM 4400-246;
- Copy of each letter sent, 30 days or more prior to requesting closure; and
- Proof of receipt for each letter.
- For this site closure, 1 (number) property (ies) has/have been impacted, the owners have been notified, and copies of the letters and receipts are included in Attachment F.

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Source Legal Documents (Attachment G)

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form.All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Include all of the following documents, in this order, in Attachment G:

G.1. **Deeds - Source Property and Other Impacted Properties:** The most recent deed with legal descriptions clearly labeled for (1) the **Source Property** (where the contamination originated) and (2) all **off-source** (off-site) properties where letters were required to be sent per the ch. NR 700, Wis. Adm. Code, rule series (e.g., off-site cover maintenance required, lost monitoring well, off-site cover property impacts to groundwater exceeding the ch. NR 140, Wis. Adm. Code.

Note: *If a property has been purchased with a land contract and the purchaser has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted instead of the most recent deed. If the property has been inherited, written documentation of the property transfer should be submitted along with the most recent deed.*

G.2. ***Certified Survey Map:*** *A copy of the certified survey map or the relevant section of the recorded plat map for those properties where the legal description in the most recent deed refers to a certified survey map or a recorded plat map.* (Lots on subdivided or platted property (e.g. lot 2 of xyz subdivision)).

G.3. **Verification of Zoning**: Documentation (e.g., official zoning map or letter from municipality) of the property's or properties' current zoning status.

G.4. **Signed Statement:** A statement signed by the Responsible Party (RP), which states that he or she believes that the attached legal description(s) accurately describe(s) the correct contaminated property or properties.

Signatures and Findings for Closure Determination

If any section is not relevant to the case closure request, you must fully explain the reasons why and attach that explanation to the relevant section of the form. All information submitted shall be legible. Providing illegible information may result in a submittal being considered incomplete until corrected.

Check the correct box for this case closure request, and have either a professional engineer or a hydrogeologist, as defined in ch. NR 712, Wis. Adm. Code, sign this document.

☒ A response action(s) for this site addresses groundwater contamination (including natural attenuation remedies).

☐ The response action(s) for this site addresses media other than groundwater.

Engineering Certification

I _____ hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this case closure request has been prepared by me or prepared under my supervision in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this case closure request is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Printed Name	Title

Signature	Date	P.E. Stamp and Number

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Hydrogeologist Certification

I Ronald J. Anderson hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this case closure request is correct and the document was prepared by me or prepared by me or prepared under my supervision and, in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code. Specifically, with respect to compliance with the rules, in my professional opinion a site investigation has been conducted in accordance with ch. NR 716, Wis. Adm. Code, and all necessary remedial actions have been completed in accordance with chs. NR 140, NR 718, NR 720, NR 722, NR 724 and NR 726, Wis. Adm. Codes."

Ronald J. Anderson	Senior Hydrogeologist
Printed Name	Title
Ronald J. Anderson	10/30/14
Signature	Date

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Attachment A/Data Tables

A.1 Groundwater Analytical Table(s)

A.2 Pre-remedial Soil Analytical Table(s)

A.3 Post-remedial Soil Analytical Table(s) – No remedial actions were conducted as part of this site investigation.

A.4 Pre and Post Remaining Soil Contamination Soil Analytical Table

A.5 Vapor Analytical Table – No vapor samples were assessed as part of the site investigation.

A.6 Other Media of Concern (e.g., sediment or surface water) – No surface waters or sediments were assessed as part of the site investigation.

A.7 Water Level Elevations – No monitoring wells were installed as part of this site investigation.

A.8 Other – Natural Attenuation data was not collected as part of this site investigation as no monitoring wells were installed.

A.1 Groundwater Analytical Table
(Geoprobe)
Emerald Service Station LUST Site BRRTS# 03-56-000393

Sample ID	Date	Lead (ppm)	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)	Other VOC's (ppb)
G-1-W	04/16/13	NS	**44**	**790**	<23	**780**	*313*	**5500**	**6090**	NS
G-2-W	04/16/13	NS	0.34	0.70	<0.23	<1.7	<0.69	<3.6	1.82-2.45	NS
G-3-W	04/16/13	NS	<12	*330*	<11.5	**271**	<34.5	**1930**	**2670**	NS
G-4-W	04/16/13	NS	<4.8	52	<4.6	*41*	<13.8	*381*	207	NS
G-5-W	04/16/13	NS	<0.24	3.4	<0.23	<1.7	<0.69	4.67	8.8-9.43	NS
G-6-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-7-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-8-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-9-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-10-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-11-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-12-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-13-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-14-W	04/16/13	NS	<0.24	26.5	<0.23	6.4	<0.69	74.5	72.9	NS
ENFORCE MENT STANDARD ES = Bold		15	5	700	60	100	800	480	2000	
PREVENTIVE ACTION LIMIT *PAL = Italics*		1.5	0.5	140	12	10	160	96	400	

NS = Not Sampled
(ppb) = parts per billion (ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics

A.1 Groundwater Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

2658 154th Ave. - Ernest Vernon Prinsen

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	5	700	60	100	800	480	2000
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

2698 154th Ave. - Marlin R & Cheryl R Voeltz

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	5	700	60	100	800	480	2000
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

2695 155th Ave. - Wayne P. Peterson

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	5	700	60	100	800	480	2000
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

1541 Cty Rd D - Bruce M & Patricia L Edquist

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	5	700	60	100	800	480	2000
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

1543 Cty Rd D - Bruce M & Patricia L Edquist

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	5	700	60	100	800	480	2000
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

1547 CTY Rd D – Emerald Service Station

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
04/16/13	<0.24	26.5	<0.23	6.4	<0.69	74.5	72.9
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	5	700	60	100	800	480	2000
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

A.1 Groundwater Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

VOC's

Well Name	1547 CTY RD D	2685 154TH AVE.	2698 154TH AVE.	2695 155TH AVE.	1541 CTY RD D	1543 CTY RD D	1547 CTY RD D	ENFORCE MENT STANDARD = ES – Bold	*PREVENTIVE ACTION LIMIT = PAL - Italics*
Date	04/16/13	03/25/14	03/25/14	03/25/14	03/25/14	03/25/14	03/25/14		
Benzene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	5	*0.5*
Bromobenzene/ppb	<0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	==	==
Bromodichloromethane/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	==	==
Bromoform/ppb	<0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	==	==
Bromomethane/ppb	<0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	==	==
Carbon Tetrachloride/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	==	==
Chlorobenzene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	==	==
Chloroethane/ppb	<0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	==	==
Chloroform/ppb	<0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	==	==
Chloromethane/ppb	<0.81	< 0.81	< 0.81	< 0.81	< 0.81	< 0.81	< 0.81	==	==
2-Chlorotoluene/ppb	<0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	==	==
4-Chlorotoluene/ppb	<0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	==	==
Dibromochloromethane/ppb	<0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	==	==
Dibromomethane/ppb	<0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	==	==
1,4-Dichlorobenzene/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	==	==
1,3-Dichlorobenzene/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
1,2-Dichlorobenzene/ppb	<0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	==	==
Dichlorodifluoromethane/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	==	==
1,2-Dichloroethane/ppb	<0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	5	*0.5*
1,1-Dichloroethane/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
1,1-Dichloroethene/ppb	<0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	==	==
cis-1,2-Dichloroethene/ppb	<0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	==	==
trans-1,2-Dichloroethene/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	==	==
1,2-Dichloropropane/ppb	<0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	==	==
2,2-Dichloropropane/ppb	<0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	==	==
1,3-Dichloropropane/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	==	==
trans-1,3-Dichloropropene/ppb	<0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	==	==
cis-1,3-Dichloropropene/ppb	<0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	==	==
1,1-Dichloropropene/ppb	<0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	==	==
Ethylbenzene/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	700	*140*
Hexachlorobutadiene/ppb	<0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	==	==
Isopropylbenzene/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
p-Isopropyltoluene/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
Methylene chloride/ppb	<0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	==	==
Methyl tert-butyl ether (MTBE)/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.35	< 0.26	< 0.26	60	*12*
Naphthalene/ppb	<0.49	< 0.49	< 0.49	< 0.49	< 0.26	< 0.49	< 0.49	100	*10*
Styrene/ppb	<0.23	< 0.23	< 0.23	< 0.23	< 0.49	< 0.23	< 0.23	==	==
1,1,2,2-Tetrachloroethane/ppb	<0.45	< 0.45	< 0.45	< 0.45	< 0.23	< 0.45	< 0.45	==	==
1,1,1,2-Tetrachloroethane/ppb	<0.29	< 0.29	< 0.29	< 0.29	< 0.45	< 0.29	< 0.29	==	==
Tetrachloroethene(PCE)/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.29	< 0.27	< 0.27	5	*0.5*
Toluene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.27	< 0.24	< 0.24	800	*160*
1,2,4-Trichlorobenzene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	==	==
1,1,1-Trichloroethane/ppb	<0.33	< 0.33	< 0.33	< 0.33	< 0.24	< 0.33	< 0.33	==	==
1,1,2-Trichloroethane/ppb	<0.34	< 0.34	< 0.34	< 0.34	< 0.33	< 0.34	< 0.34	==	==
Trichloroethene (TCE)/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.34	< 0.3	< 0.3	5	*0.5*
Trichlorofluoromethane/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.3	< 0.26	< 0.26	==	==
1,2,3-Trichloropropane/ppb	<0.91	< 0.91	< 0.91	< 0.91	< 0.26	< 0.91	< 0.91	==	==
Trichlorotrifluoroethane/ppb	<0.41	< 0.41	< 0.41	< 0.41	< 0.91	< 0.41	< 0.41		
1,2,4-Trimethylbenzene/ppb	<0.31	< 0.31	< 0.31	< 0.31	< 0.41	< 0.31	< 0.31		
1,3,5-Trimethylbenzene/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.31	< 0.26	< 0.26	Total TMB's 480	*Total TMB's 96*
Vinyl Chloride/ppb	<0.18	< 0.18	< 0.18	< 0.18	< 0.26	< 0.18	< 0.18	==	==
m&p-Xylene/ppb	<0.69	< 0.69	< 0.69	< 0.69	< 0.18	< 0.69	< 0.69		
o-Xylene/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.69	< 0.25	< 0.25	Total Xylenes 2000	*Total Xylenes 400*

Note: Bold type indicates an ES exceedance, *italics* indicates a PAL exceedance. NS = not sampled, NM = Not Measured
Q = Analyte detected above laboratory method detection limit but below practical quantitation limit.
= = No Exceedences

A.2. Pre-remedial Soil Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

																PVOC		
Sample ID	Depth (feet)	Date	PID	Lead (ppm)	DRO (ppm)	GRO (ppm)	Benzene (ppm)	Ethyl Benzene (ppm)	MTBE (ppm)	Naph-thalene (ppm)	Toluene (ppm)	1,2,4-Trime-thylbenzene (ppm)	1,3,5-Trime-thylbenzene (ppm)	Xylene (Total) (ppm)	Other VOC's (ppm)	Individual Exeedance Count	Hazard Index	Cumulative Cancer Risk
T-1	5.5	07/30/90	>10000	NS	NS	NS	**1.9**	**22**	NS	NS	**9.3**	NS	NS	**130**	NS			
T-2	6.0	07/30/90	5000	NOT SAMPLED														
T-3	6.25	07/30/90	>10000	NS	NS	NS	<1.0	**3.9**	NS	NS	<1.0	NS	NS	**19**	NS			
G-1-1	3.5	04/16/13	0	**448**	NS	45	**0.42**	0.480	<0.025	**1.1**	**2.79**	**4.3**	**1.93**	**8.83**	NS	**1**	**1.19E+00**	5.6E-07
G-1-2	8.0	04/16/13	350	NS	NS	262	<0.250	0.460	<0.250	**6.6**	<0.250	**38**	**14.7**	**9.79**	NS			
G-1-3	12.0	04/16/13	300	NS	NS	400	**2.12**	**121**	<0.250	**5.8**	**17.9**	**27.3**	**10**	**66.2**	NS			
G-2-1	3.5	04/16/13	0	**33.6**	NS	<10	**0.096**	0.103	<0.025	0.110	0.550	0.127	0.083	0.598	NS	0	8.78E-02	1.0E-07
G-2-2	8.0	04/16/13	150	NS	NS	<10	**0.067**	0.256	<0.025	0.056	0.037	0.220	0.193	0.376	NS			
G-3-1	3.5	04/16/13	0	**156**	NS	18	**0.39**	1.09	<0.025	0.410	0.680	**1.76**	**0.630**	3.08	NS	0	4.20E-01	4.9E-07
G-3-2	8.0	04/16/13	500	**65.6**	NS	3500	**0.274**	**36**	<0.300	**62**	**1.45**	**316**	**101**	**320**	SEE VOC SPREAD-SHEET			
G-3-3	10.0	04/16/13	400	NOT SAMPLED														
G-4-1	3.5	04/16/13	0	10.7	NS	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075	NS	0	2.68E-02	0
G-4-2	8.0	04/16/13	370	NS	NS	2780	**3.13**	**25.3**	<0.250	**29.6**	**1.29**	**208**	**92**	**99.7**	NS			
G-4-3	12.0	04/16/13	310	NS	NS	249	**0.600**	**7.1**	<0.025	**1.93**	0.750	**11.8**	**4.4**	**25.6**	NS			
G-5-1	3.5	04/16/13	0	NOT SAMPLED														
G-5-2	8.0	04/16/13	300	NS	NS	93	**0.249**	0.212	<0.025	0.239	0.061	**0.350**	**1.64**	0.900	NS			
G-5-3	10.0	04/16/13	280	NOT SAMPLED														
G-6-1	3.5	04/16/13	0	9.64	NS	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075	NS	0	2.41E-02	0
G-6-2	8.0	04/16/13	0	NS	NS	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075	NS			
G-6-3	10.0	04/16/13	0	NOT SAMPLED														
G-7-1	3.5	04/16/13	0	NOT SAMPLED														
G-7-2	8.0	04/16/13	0	NOT SAMPLED														
G-7-3-	10.0	04/16/13	0	NOT SAMPLED														
G-7-4	14.0	04/16/13	0	NOT SAMPLED														
G-8-1	3.5	04/16/13	0	NOT SAMPLED														
G-8-2	8.0	04/16/13	0	NOT SAMPLED														
G-8-3	12.0	04/16/13	0	NOT SAMPLED														
G-9-1	3.5	04/16/13	0	NOT SAMPLED														
G-9-2	8.0	04/16/13	0	NOT SAMPLED														
G-9-3	10.0	04/16/13	0	NOT SAMPLED														
G-10-1	3.5	04/16/13	0	NOT SAMPLED														
G-10-2	8.0	04/16/13	0	NOT SAMPLED														
G-10-3	10.0	04/16/13	0	NOT SAMPLED														
G-11-1	3.5	04/16/13	0	NOT SAMPLED														
G-11-2	8.0	04/16/13	0	NOT SAMPLED														
G-11-3	10.0	04/16/13	0	NOT SAMPLED														
G-12-1	3.5	04/16/13	0	NOT SAMPLED														
G-12-2	8.0	04/16/13	0	NOT SAMPLED														
G-12-3	10.0	04/16/13	0	NOT SAMPLED														
G-13-1	3.5	04/16/13	0	NOT SAMPLED														
G-13-2	8.0	04/16/13	0	NOT SAMPLED														
G-14-1	3.5	04/16/13	0	**31.4**	NS	<10	**0.150**	0.185	<0.025	0.032	0.077	0.119	0.152	0.512	NS	0	8.22E-02	1.3E-07
G-14-2	8.0	04/16/13	400	NS	NS	460	**0.920**	**15.9**	<0.250	**6.6**	0.640	**32**	**11.8**	**68.3**	NS			
										31								
Groundwater RCL				**27**	-	-	**0.00512**	**1.57**	**0.027**	**0.659**	**1.11**	**1.38**		**3.94**	-			
Non-Industrial Direct Contact RCL				**400**	-	-	**1.49**	**7.47**	**59.4**	**5.15**	**818**	**89.8**	**182**	**258**	-		**1.00E+00**	**1.00E-05**
Soil Saturation Concentration (C-sat)*				-	-	-	**1820***	**480***	**8870***	-	**818***	**219***	**182***	**258***	-			

Bold = Groundwater RCL Exceedance
Bold & Underline = Non Industrial Direct Contact RCL Exceedance
Bold & Asteric * = C-sat Exceedance
NS = Not Sampled NM = Not Measured
(ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
PID = Photoionization Detector
PVOC's = Petroleum Volatile Organic Compounds

A.2. Pre-remedial Soil Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

Well Sampling Conducted on April 16, 2013

VOC's	G-3-2	Bold = Groundwater RCL	Underline & Bold = Direct Contact RCL	Asteric * & Bold =Soil Saturation (C-sat) RCL
Sample ID#	8			
Sample Depth/ft.				
Solids Percent	82.3	==	==	==
Lead/ppm	65.6	27	400	= =
GRO/ppm	3500	= =	= =	= =
Benzene/ppm	0.274	0.00512	1.49	1820
Bromobenzene/ppm	<0.130	= =	354	= =
Bromodichloromethane/ppm	<0.270	0.000326	0.39	= =
Bromoform/ppm	<0.300	0.00233	61.6	= =
tert-Butylbenzene/ppm	<0.200	= =	183	183
sec-Butylbenzene/ppm	5.2	= =	145	145
n-Butylbenzene/ppm	34	= =	108	108
Carbon Tetrachloride/ppm	<0.250	0.00388	0.85	= =
Chlorobenzene/ppm	<0.160	= =	392	= =
Chloroethane/ppm	<0.420	0.227	= =	= =
Chloroform/ppm	<0.490	0.0033	0.42	= =
Chloromethane/ppm	<1.810	0.0155	171	= =
2-Chlorotoluene/ppm	<0.160	= =	= =	= =
4-Chlorotoluene/ppm	<0.140	= =	= =	= =
1,2-Dibromo-3-chloropropane/ppm	<0.480	0.000173	0.01	= =
Dibromochloromethane/ppm	<0.140	0.032	0.93	= =
1,4-Dichlorobenzene/ppm	<0.330	0.144	3.48	= =
1,3-Dichlorobenzene/ppm	<0.300	1.15	297	297
1,2-Dichlorobenzene/ppm	<0.380	1.17	376	376
Dichlorodifluoromethane/ppm	<0.570	3.08	135	= =
1,2-Dichloroethane/ppm	<0.360	0.00284	0.61	540
1,1-Dichloroethane/ppm	<0.190	0.484	4.72	= =
1,1-Dichloroethene/ppm	<0.210	0.00502	342	= =
cis-1,2-Dichloroethene/ppm	<0.240	0.0412	156	= =
trans-1,2-Dichloroethene/ppm	<0.290	0.0588	211	= =
1,2-Dichloropropane/ppm	<0.095	0.00332	1.33	= =
2,2-Dichloropropane/ppm	<0.460	= =	527	527
1,3-Dichloropropane/ppm	<0.210	= =	1490	1490
Di-isopropyl ether/ppm	<0.110	= =	2260	2260
EDB (1,2-Dibromoethane)/ppm	<0.200	0.0000282	0.05	= =
Ethylbenzene/ppm	36	1.57	7.47	480
Hexachlorobutadiene/ppm	<0.950	= =	6.23	= =
Isopropylbenzene/ppm	9	= =	= =	= =
p-Isopropyltoluene/ppm	2.76	= =	162	162
Methylene chloride/ppm	<0.570	0.00256	60.7	= =
Methyl tert-butyl ether (MTBE)/ppm	<0.300	0.027	59.4	8870
Naphthalene/ppm	62	0.659	5.15	= =
n-Propylbenzene/ppm	44	= =	= =	= =
1,1,2,2-Tetrachloroethane/ppm	<0.120	0.000156	0.75	= =
1,1,1,2-Tetrachloroethane/ppm	<0.230	0.0533	2.59	= =
Tetrachloroethene (PCE)/ppm	<0.490	0.00454	30.7	= =
Toluene/ppm	1.45	1.11	818	818
1,2,4-Trichlorobenzene/ppm	<0.790	0.408	22.1	= =
1,2,3-Trichlorobenzene/ppm	<1.290	= =	48.9	= =
1,1,1-Trichloroethane/ppm	<0.380	0.14	= =	= =
1,1,2-Trichloroethane/ppm	<0.230	0.00324	1.48	= =
Trichloroethene (TCE)/ppm	<0.280	0.00358	0.64	= =
Trichlorofluoromethane/ppm	<0.860	= =	1120	= =
1,2,4-Trimethylbenzene/ppm	316	1.38	89.8	219
1,3,5-Trimethylbenzene/ppm	101		182	182
Vinyl Chloride/ppm	<0.210	0.000138	0.07	= =
m&p-Xylene/ppm	239	3.94	258	258
o-Xylene/ppm	81			

NS = not sampled, NM = Not Measured
(ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
= = No Exceedences

A.4. Pre and Post Remaining Soil Contamination Soil Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

Sample ID	Depth (feet)	Date	PID	Lead (ppm)	DRO (ppm)	GRO (ppm)	Benzene (ppm)	Ethyl Benzene (ppm)	MTBE (ppm)	Naph-thalene (ppm)	Toluene (ppm)	1,2,4-Trime-thylbenzene (ppm)	1,3,5-Trime-thylbenzene (ppm)	Xylene (Total) (ppm)	Other VOC's (ppm)	PVOC		
																Individual Exeedance Count	Hazard Index	Cumulative Cancer Risk
T-1	5.5	07/30/90	>10000	NS	NS	NS	**1.9**	**22**	NS	NS	**9.3**	NS	NS	**130**	NS			
T-3	6.25	07/30/90	>10000	NS	NS	NS	<1.0	**3.9**	NS	NS	<1.0	NS	NS	**19**	NS			
G-1-1	3.5	04/16/13	0	**448**	NS	45	**0.42**	0.480	<0.025	**1.1**	**2.79**	**4.3**	**1.93**	**8.83**	NS	**1**	**1.19E+00**	5.6E-07
G-1-2	8.0	04/16/13	350	NS	NS	262	<0.250	0.460	<0.250	**6.6**	<0.250	**38**	**14.7**	**9.79**	NS			
G-1-3	12.0	04/16/13	300	NS	NS	400	**2.12**	**121**	<0.250	**5.8**	**17.9**	**27.3**	**10**	**66.2**	NS			
G-2-1	3.5	04/16/13	0	**33.6**	NS	<10	**0.096**	0.103	<0.025	0.110	0.550	0.127	0.083	0.598	NS	0	8.78E-02	1.0E-07
G-2-2	8.0	04/16/13	150	NS	NS	<10	**0.067**	0.256	<0.025	0.056	0.037	0.220	0.193	0.376	NS			
G-3-1	3.5	04/16/13	0	**156**	NS	18	**0.39**	1.09	<0.025	0.410	0.680	**1.76**	**0.630**	3.08	NS	0	4.20E-01	4.9E-07
G-3-2	8.0	04/16/13	500	**65.6**	NS	3500	**0.274**	**36**	<0.300	**62**	**1.45**	**316**	**101**	**320**	SEE VOC SPREAD-SHEET			
G-4-2	8.0	04/16/13	370	NS	NS	2780	**3.13**	**25.3**	<0.250	**29.6**	**1.29**	**208**	**92**	**99.7**	NS			
G-4-3	12.0	04/16/13	310	NS	NS	249	**0.600**	**7.1**	<0.025	**1.93**	0.750	**11.8**	**4.4**	**25.6**	NS			
G-5-2	8.0	04/16/13	300	NS	NS	93	**0.249**	0.212	<0.025	0.239	0.061	**0.350**	**1.64**	0.900	NS			
G-14-1	3.5	04/16/13	0	**31.4**	NS	<10	**0.150**	0.185	<0.025	0.032	0.077	0.119	0.152	0.512	NS	0	8.22E-02	1.3E-07
G-14-2	8.0	04/16/13	400	NS	NS	460	**0.920**	**15.9**	<0.250	**6.6**	0.640	**32**	**11.8**	**68.3**	NS			
										31								
Groundwater RCL				27	-	-	0.00512	1.57	0.027	0.659	1.11	1.38		3.94	-			
Non-Industrial Direct Contact RCL				400	-	-	1.49	7.47	59.4	5.15	818	89.8	182	258	-		**1.00E+00**	**1.00E-05**
Soil Saturation Concentration (C-sat)*				-	-	-	1820*	480*	8870*	-	818*	219*	182*	258*	-			

Bold = Groundwater RCL Exceedance
Bold & Underline = Non Industrial Direct Contact RCL Exceedance
Bold & Asteric * = C-sat Exceedance
NS = Not Sampled NM = Not Measured
(ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
PID = Photoionization Detector
PVOC's = Petroleum Volatile Organic Compounds

A.4. Pre and Post Remaining Soil Contamination Soil Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

Well Sampling Conducted on April 16, 2013

VOC's	G-3-2	Bold = Groundwater RCL	Underline & Bold = Direct Contact RCL	Asteric * & Bold =Soil Saturation (C-sat) RCL
Sample ID#	8			
Sample Depth/ft.				
Solids Percent	82.3	==	==	==
Lead/ppm	**65.6**	27	400	= =
GRO/ppm	**3500**	= =	= =	= =
Benzene/ppm	**0.274**	0.00512	1.49	1820
Bromobenzene/ppm	<0.130	= =	354	= =
Bromodichloromethane/ppm	<0.270	0.000326	0.39	= =
Bromoform/ppm	<0.300	0.00233	61.6	= =
tert-Butylbenzene/ppm	<0.200	= =	183	183
sec-Butylbenzene/ppm	5.2	= =	145	145
n-Butylbenzene/ppm	34	= =	108	108
Carbon Tetrachloride/ppm	<0.250	0.00388	0.85	= =
Chlorobenzene/ppm	<0.160	= =	392	= =
Chloroethane/ppm	<0.420	0.227	= =	= =
Chloroform/ppm	<0.490	0.0033	0.42	= =
Chloromethane/ppm	<1.810	0.0155	171	= =
2-Chlorotoluene/ppm	<0.160	= =	= =	= =
4-Chlorotoluene/ppm	<0.140	= =	= =	= =
1,2-Dibromo-3-chloropropane/ppm	<0.480	0.000173	0.01	= =
Dibromochloromethane/ppm	<0.140	0.032	0.93	= =
1,4-Dichlorobenzene/ppm	<0.330	0.144	3.48	= =
1,3-Dichlorobenzene/ppm	<0.300	1.15	297	297
1,2-Dichlorobenzene/ppm	<0.380	1.17	376	376
Dichlorodifluoromethane/ppm	<0.570	3.08	135	= =
1,2-Dichloroethane/ppm	<0.360	0.00284	0.61	540
1,1-Dichloroethane/ppm	<0.190	0.484	4.72	= =
1,1-Dichloroethene/ppm	<0.210	0.00502	342	= =
cis-1,2-Dichloroethene/ppm	<0.240	0.0412	156	= =
trans-1,2-Dichloroethene/ppm	<0.290	0.0588	211	= =
1,2-Dichloropropane/ppm	<0.095	0.00332	1.33	= =
2,2-Dichloropropane/ppm	<0.460	= =	527	527
1,3-Dichloropropane/ppm	<0.210	= =	1490	1490
Di-isopropyl ether/ppm	<0.110	= =	2260	2260
EDB (1,2-Dibromoethane)/ppm	<0.200	0.0000282	0.05	= =
Ethylbenzene/ppm	**36**	1.57	7.47	480
Hexachlorobutadiene/ppm	<0.950	= =	6.23	= =
Isopropylbenzene/ppm	9	= =	= =	= =
p-Isopropyltoluene/ppm	2.76	= =	162	162
Methylene chloride/ppm	<0.570	0.00256	60.7	= =
Methyl tert-butyl ether (MTBE)/ppm	<0.300	0.027	59.4	8870
Naphthalene/ppm	**62**	0.659	5.15	= =
n-Propylbenzene/ppm	44	= =	= =	= =
1,1,2,2-Tetrachloroethane/ppm	<0.120	0.000156	0.75	= =
1,1,1,2-Tetrachloroethane/ppm	<0.230	0.0533	2.59	= =
Tetrachloroethene (PCE)/ppm	<0.490	0.00454	30.7	= =
Toluene/ppm	**1.45**	1.11	818	818
1,2,4-Trichlorobenzene/ppm	<0.790	0.408	22.1	= =
1,2,3-Trichlorobenzene/ppm	<1.290	= =	48.9	= =
1,1,1-Trichloroethane/ppm	<0.380	0.14	= =	= =
1,1,2-Trichloroethane/ppm	<0.230	0.00324	1.48	= =
Trichloroethene (TCE)/ppm	<0.280	0.00358	0.64	= =
Trichlorofluoromethane/ppm	<0.860	= =	1120	= =
1,2,4-Trimethylbenzene/ppm	**316**	1.38	89.8	219
1,3,5-Trimethylbenzene/ppm	**101**		182	182
Vinyl Chloride/ppm	<0.210	0.000138	0.07	= =
m&p-Xylene/ppm	**239**	3.94	258	258
o-Xylene/ppm	**81**			

NS = not sampled, NM = Not Measured
(ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
= = No Exceedences

Attachment B/Maps and Figures

B.1 Location Maps

B.1.a Location Map

B.1.b Detailed Site Map

B.1.c RR Site Map

B.2 Soil Figures

B.2.a Pre-remedial Soil Contamination

B.2.b Post-remedial Soil Contamination – No remedial actions occurred as part of this site investigation.

B.2.c Pre/Post Remaining Soil Contamination

B.3 Groundwater Figures

B.3.a Geologic Cross-Section Figure(s)

B.3.b Groundwater Isoconcentration

B.3.c Groundwater Flow Direction – Monitoring wells were not installed as part of this site investigation.

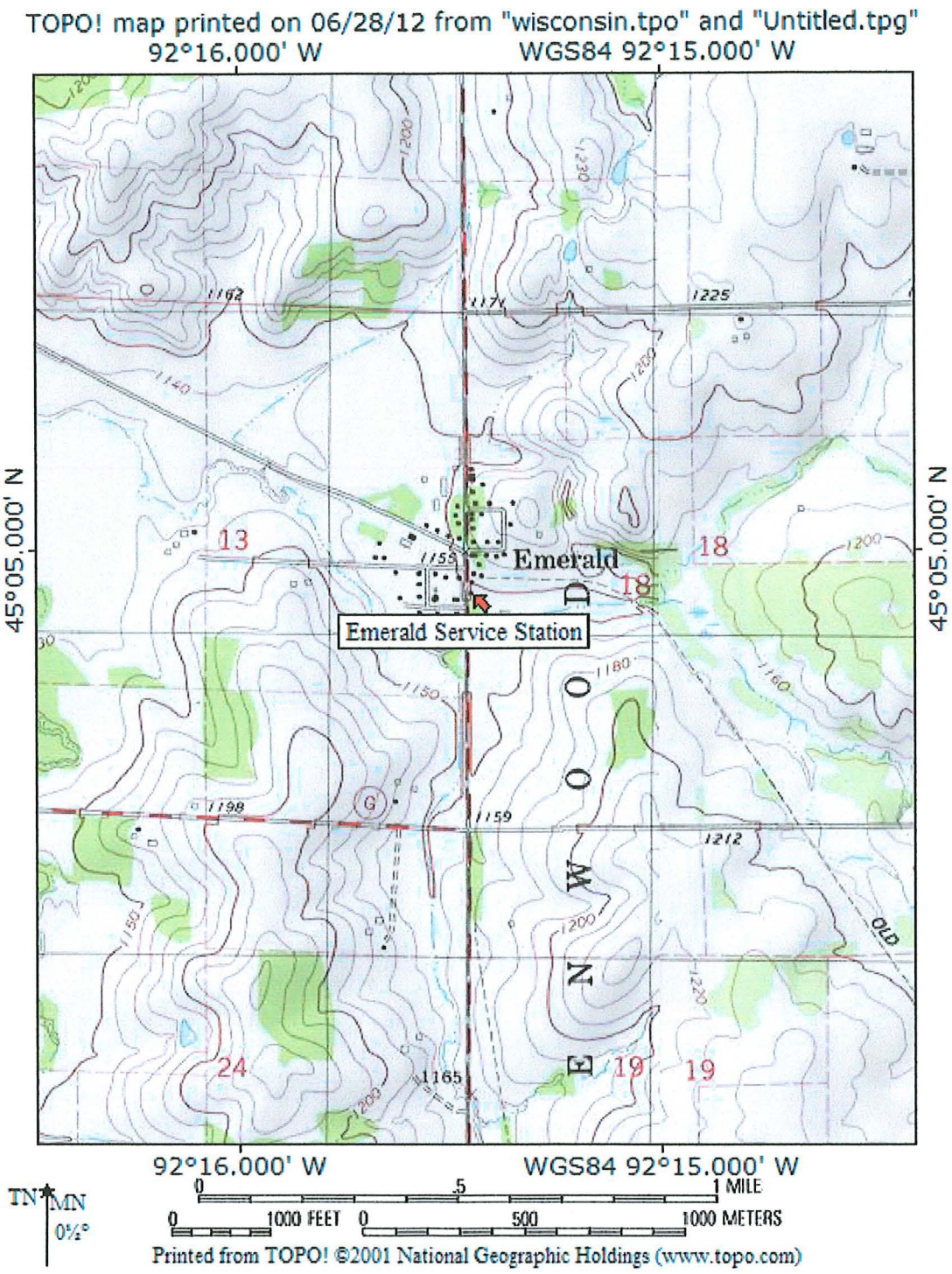
B.3.d Monitoring Wells – Monitoring wells were not installed as part of this site investigation

B.4Vapor Maps and Other Media

B.4.a Vapor Intrusion Map – No vapor samples were assessed as part of this site investigation.

B.4.b Other media of concern (e.g., sediment or surface water) – No surface waters or sediments were sampled as part of this site investigation.

B.4.c Other – No other relevant maps and/or figures are being included.



B.1.a. LOCATION MAP CONTOUR INTERVAL 10 FEET
EMERALD SERVICE STATION – EMERALD, WI
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM

B.I.b DETAILED SITE MAP

EMERALD SERVICE STATION

METCO
709 Gillette Street, Ste 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience

EMERALD, WISCONSIN

DRAWN BY: ED

DATE: 06/28/2012

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

• - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

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

SCALE: 1 INCH = 70 FEET

155TH AVENUE

RESIDENTIAL
2695 155TH AVENUE

TRAILER HOUSE

TAVERN

TAVERN
1546 COUNTY ROAD D

GARAGE

2696 154TH AVENUE

RESIDENTIAL
2698 154TH AVENUE

154TH AVENUE

COUNTY ROAD D

RESIDENTIAL
2703 156TH AVENUE

1557 COUNTY ROAD D

NO ADDRESS

RESIDENTIAL
1551 COUNTY ROAD D

RESIDENTIAL
1549 COUNTY ROAD D

PARKING LANE

1 GRASS

LP TANK

T-1

T-2

T-3

T-4

GRASS

CONCRETE

GRAVEL

FORMER SERVICE BAY

GARAGE

STORAGE TRAILER

FENCE

FORMER EMERALD SERVICE STATION
1547 COUNTY ROAD D

GRAVEL DRIVEWAY

RESIDENTIAL
1543 COUNTY ROAD D

RESIDENTIAL
1541 COUNTY ROAD D

RESIDENTIAL
2685 154TH AVENUE

COMMERCIAL
2687 154TH AVENUE

RESIDENTIAL
1532 COUNTY ROAD D

SHARED WELL WITH
2685 154TH AVENUE

RESIDENTIAL
1526 COUNTY ROAD D

B.I.b DETAILED SITE MAP

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MODIFIED BY: MM DATE: 8/13/14

SCALE:
1 INCH = 30 FEET
0 15 30

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

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

TAVERN
1546 COUNTY ROAD D

RESIDENTIAL
2698 154TH AVENUE

COUNTY ROAD D

PARKING LANE

RESIDENTIAL
1549 COUNTY ROAD D

FORMER DISPENSER ISLAND

FORMER EMERALD SERVICE STATION
1547 COUNTY ROAD D

AWNING

LP TANK

CONCRETE

GRAVEL

FORMER SERVICE BAY

GARAGE

STORAGE TRAILER

GRASS

FENCE

RESIDENTIAL
1543 COUNTY HWY D

RESIDENTIAL
1541 COUNTY ROAD D

GRAVEL DRIVEWAY

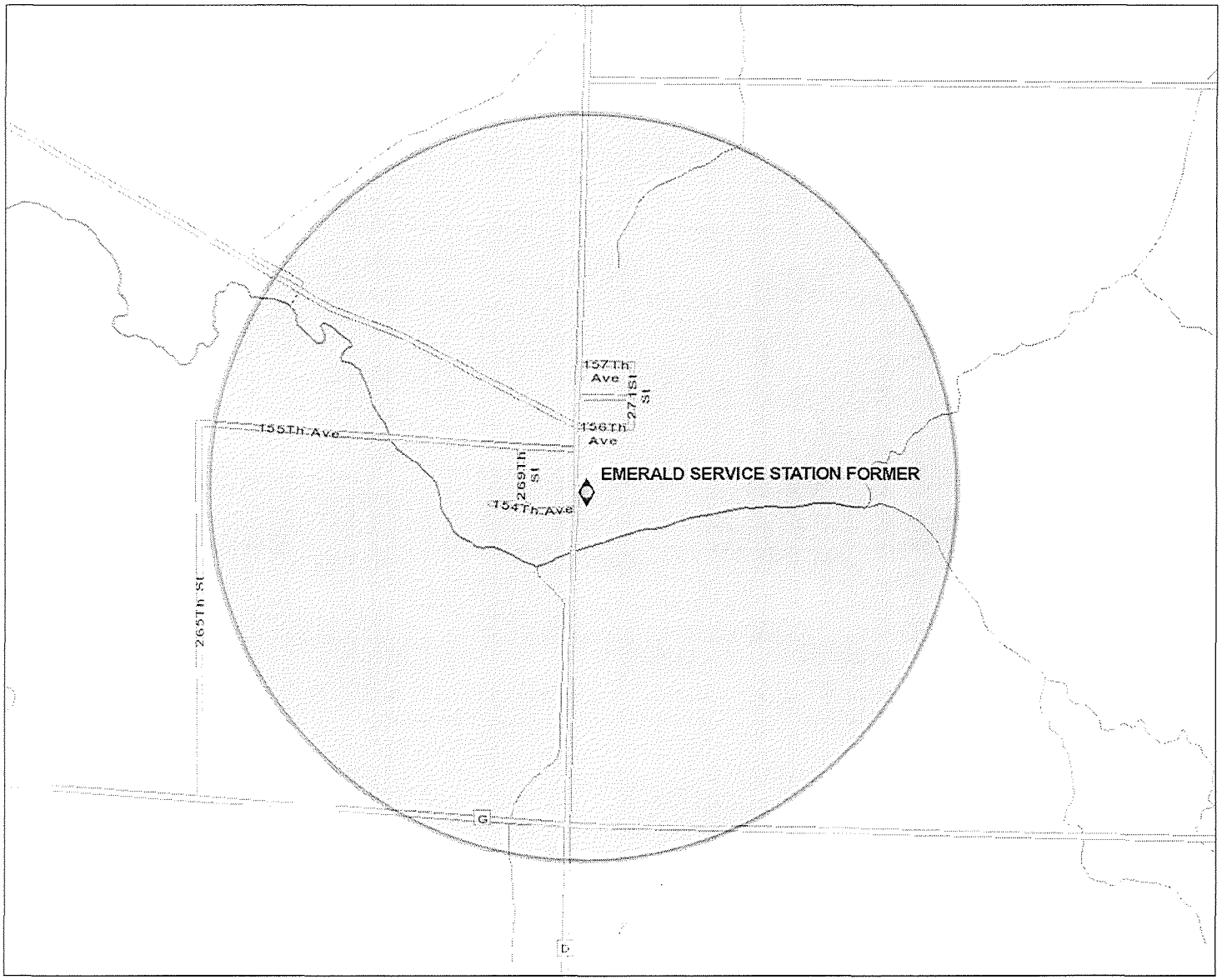
154TH AVENUE

G-1 G-2 G-3 G-4 G-5 G-6 G-7 G-8 G-9 G-10 G-11 G-12 G-13 G-14

T-1 T-2 T-3

A B

B.1.c. RR Site Map



Legend

- Open Site (ongoing cleanup)
- Open Site Boundary
- Closed Site (completed cleanup)
- Closed Site Boundary
- Cities
- Villages
- Airport

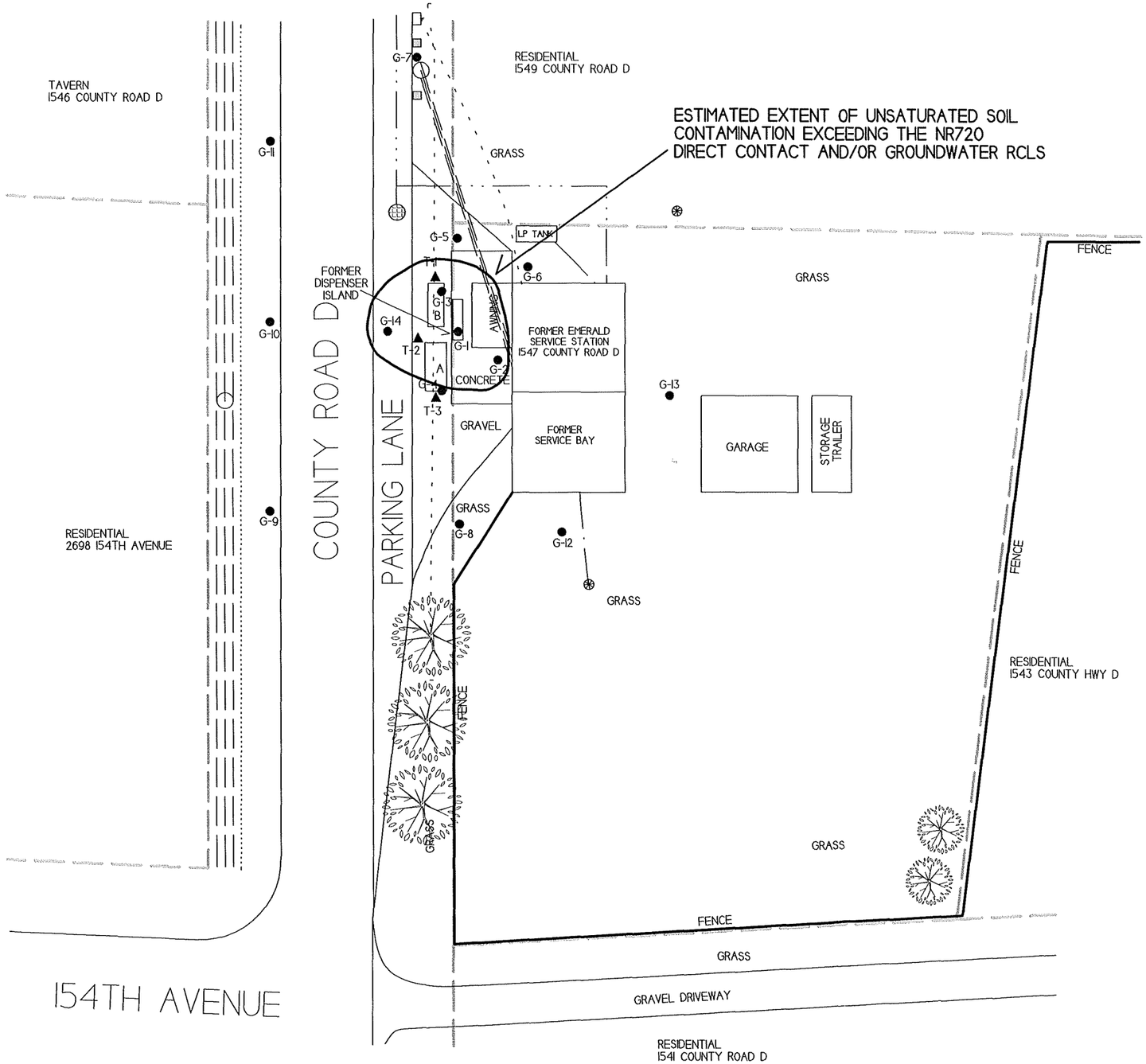
Notes

0.4 0 0.21 0.4 Miles

NAD_1983_HARN_Wisconsin_TM

1: 13,001

Note: Not all sites are mapped.



B.2.a PRE-REMEDIAL SOIL CONTAMINATION

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WISCONSIN

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MODIFIED BY: MM DATE: 8/13/14

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

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.2.c PRE/POST REMAINING SOIL CONTAMINATION

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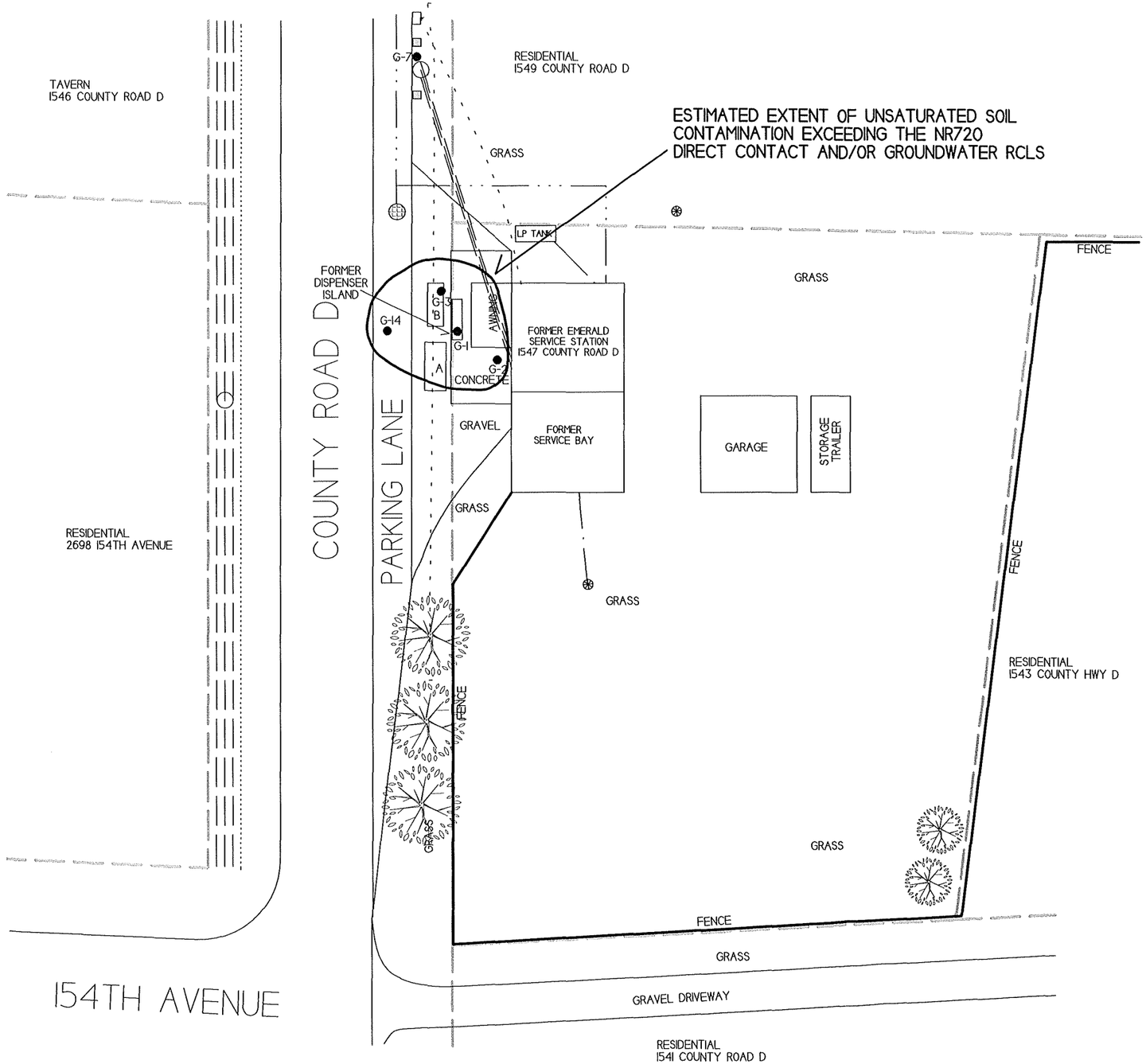

NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

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⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.3.a GEOLOGIC CROSS -SECTION FIGURE

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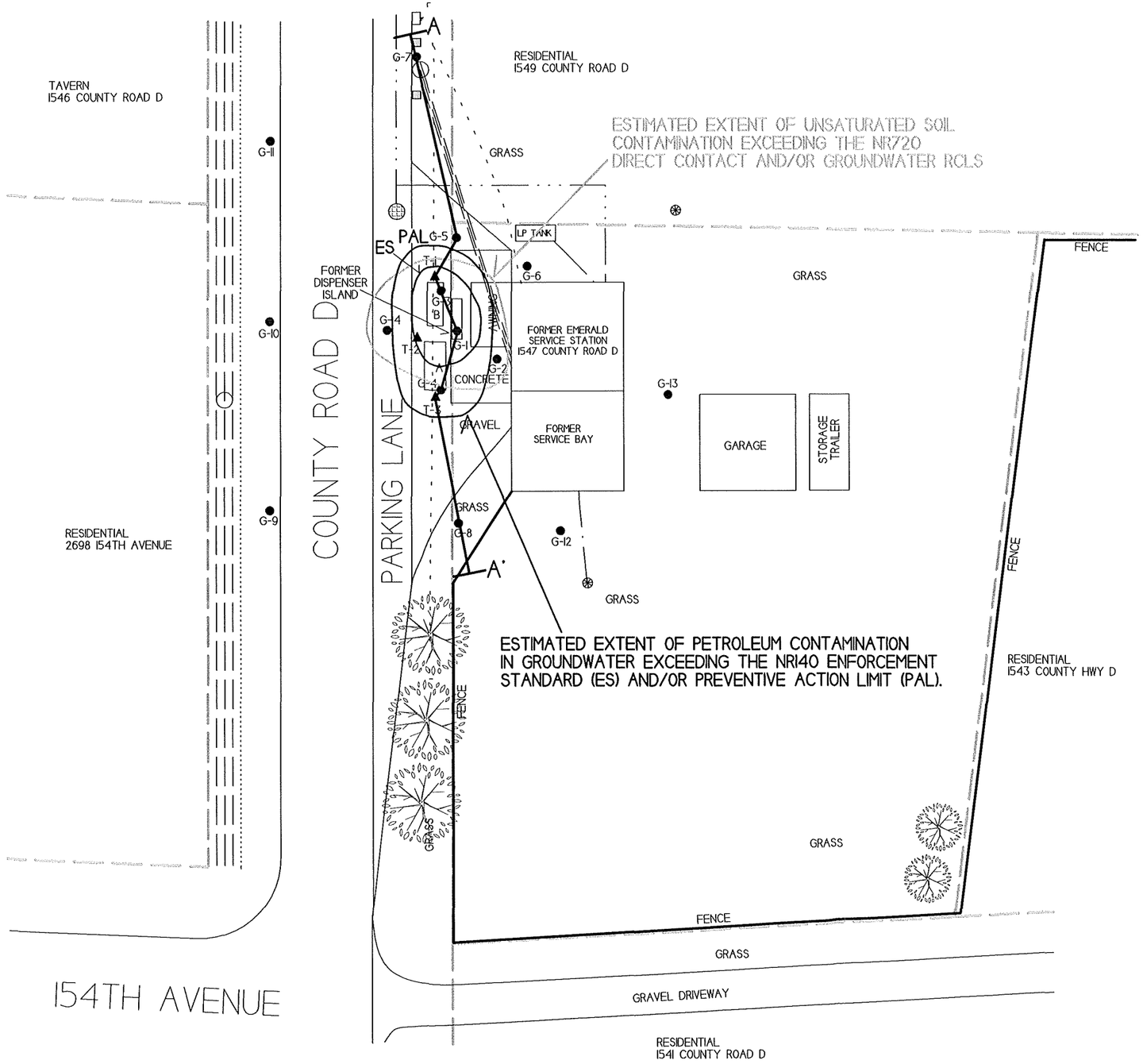

NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

◯ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.3.a GEOLOGIC CROSS -SECTION FIGURE

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MODIFIED BY: MM DATE: 8/13/14

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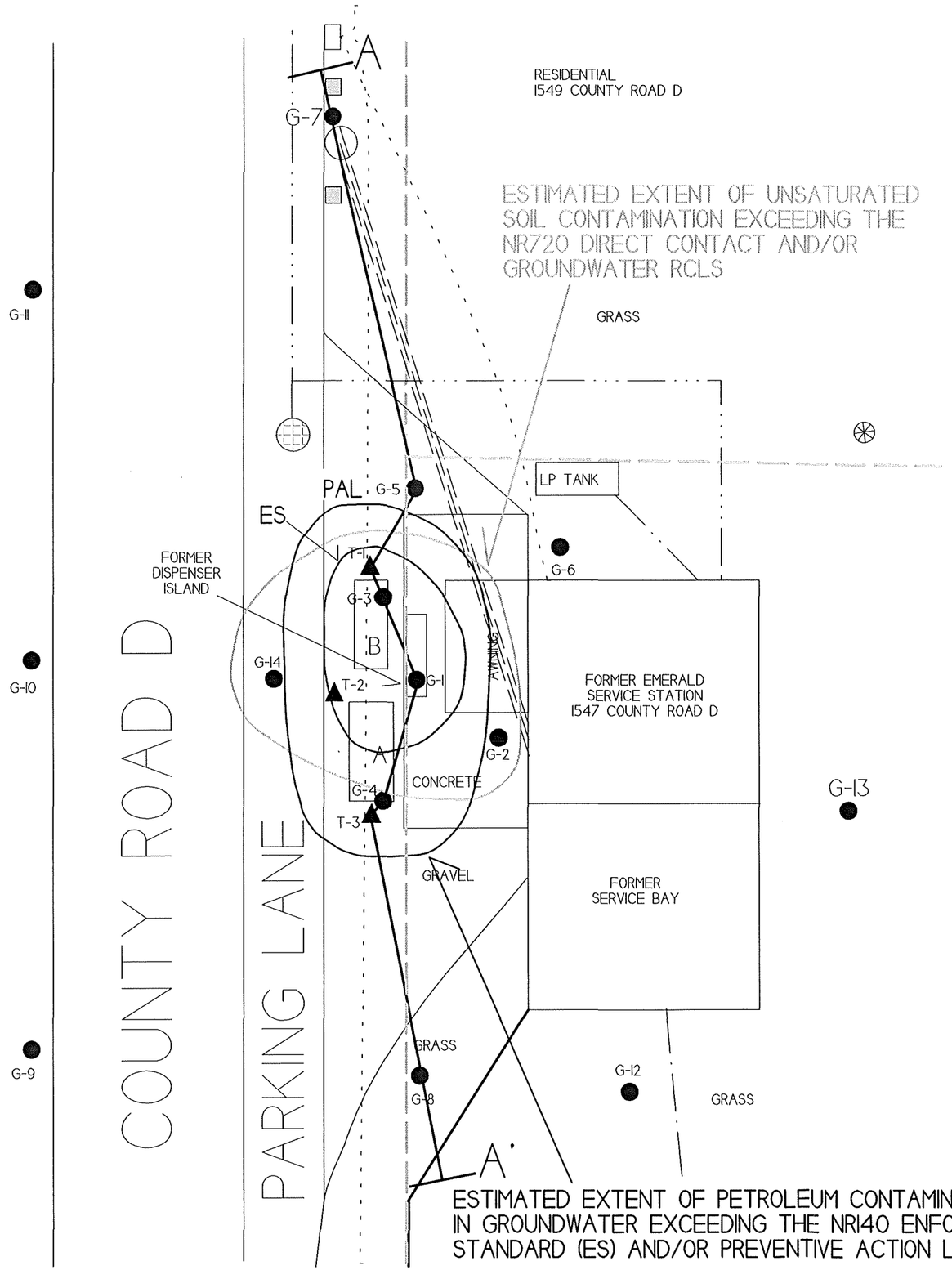
SCALE:
1 INCH = 15 FEET
0 15



▲ = SITE ASSESSMENT SOIL SAMPLING LOCATION

● = GEOPROBE BORING LOCATION

⊛ = POTABLE WELL LOCATION

○ = POWER POLE

⊞ = MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A= 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B= 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.3.a

GEOLOGIC CROSS -SECTION FIGURE

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EMERALD, WISCONSIN

DRAWN BY: MM

DATE: 6/13/14

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

▲ - SITE ASSESSMENT SOIL BORING LOCATION

● - GEOPROBE BORING LOCATION

△ - SITE ASSESSMENT SOIL BORING LOCATION

○ - GEOPROBE BORING LOCATION

▼ - APPROXIMATE GROUNDWATER ELEVATION

NOTES:

1) SOIL SAMPLE RESULTS ARE PRESENTED IN PARTS PER MILLION (PPM).

2) GROUNDWATER SAMPLE RESULTS ARE PRESENTED IN PARTS PER BILLION (PPB).

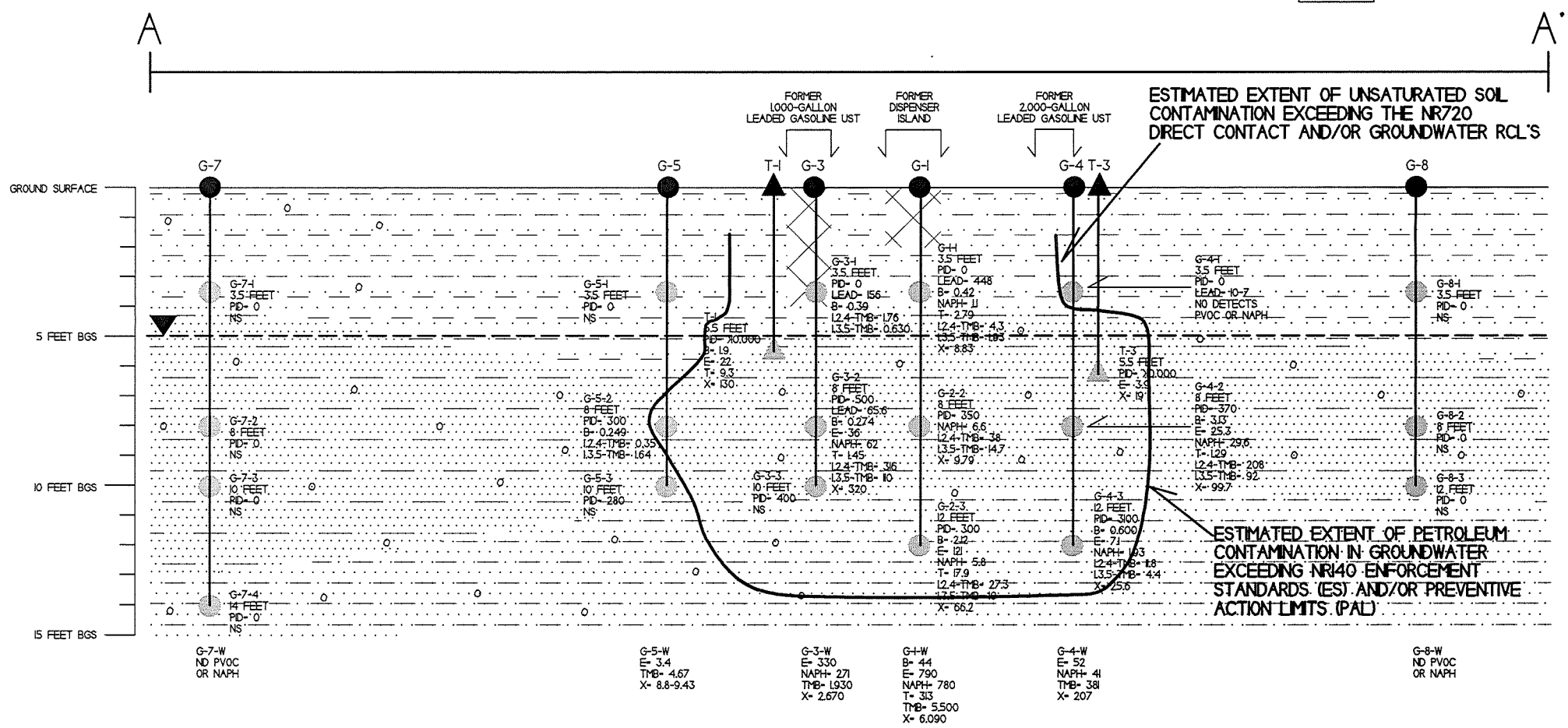
3) SOIL AND GROUNDWATER SAMPLE DATA IS BASED ON LABORATORY RESULTS FROM SAMPLES COLLECTED DURING THE FOLLOWING EVENTS:
- SITE ASSESSMENT - GOTTFRIED ENVIRONMENTAL (7/30/90)
- GEOPROBE PROJECT - METCO (4/16/13)

PID= PHOTO IONIZATION DETECTOR
PVOC= PETROLEUM VOLATILE ORGANIC COMPOUNDS
B= BENZENE
E= ETHYLBENZENE
NAPH= NAPHTHLENE
T= TOLUENE
TMB= TRIMETHYLBENZENE
X= XYLENE
NS= NOT SAMPLED
ND= NO DETECT

HORIZONTAL SCALE: 1 INCH = 15 FEET (0 – 15)

VERTICAL SCALE: 1 INCH = 5 FEET (0 – 5)

- TAN TO BROWN SAND AND GRAVEL TO CLAYEY SAND WITH GRAVEL AND GLASS (FILL)
- BROWN TO GRAY CLAY TO SANDY CLAY WITH SOME GRAVEL
- BROWN TO GRAY FINE TO COARSE GRAINED SAND TO CLAYEY SAND WITH GRAVEL
- TAN TO BROWN TO GRAY SANDY CLAY WITH SOME GRAVEL



B.3.b GROUNDWATER ISOCONCENTRATION

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WISCONSIN

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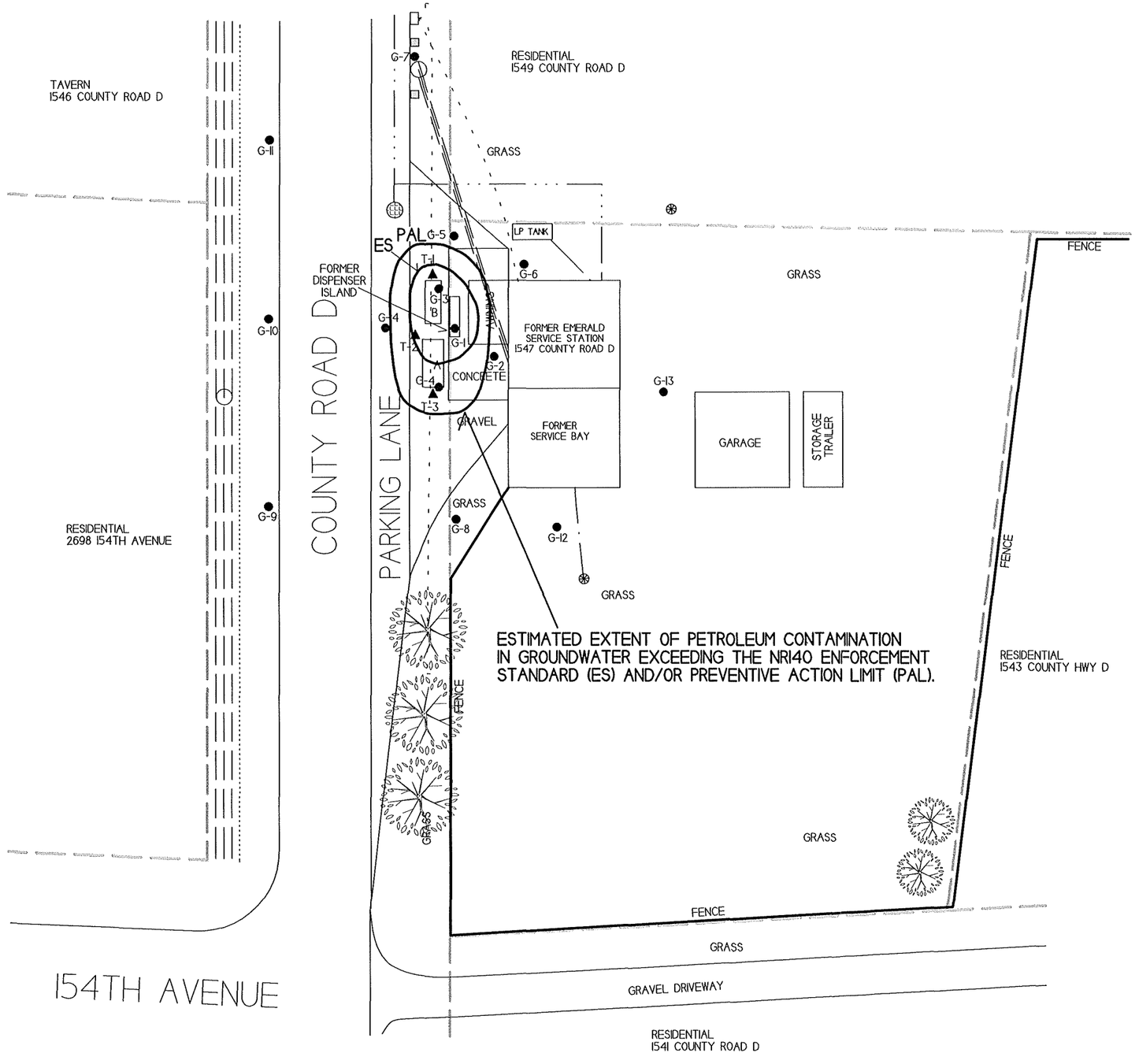
MODIFIED BY: MM DATE: 8/13/14



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

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

❀ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

NOTE: GROUNDWATER ISOCONCENTATION IS BASED ON ANALYTICAL RESULTS FROM SAMPLES COLLECTED DURING THE MARCH 16, 2013 GEOPROBE PROJECT AND THE MARCH 25, 2014 PRIVATE WELL SAMPLING EVENT.

Attachment C/Documentation of Remedial Action

C.1 Site Investigation documentation – All site investigation activities are documented in the Site Investigation Report (October 6, 2014), which is being submitted concurrently with this case closure request.

C.2 Investigative waste – No investigative waste was generated as part of this site investigation.

C.3 Provide a description of the methodology used along with all supporting documentation if the Residual Contaminant Levels are different than those contained in the Department's RCL Spreadsheet available at: http://dnr.wi.goc/topic/brownfields.Professionals.html\ - Residual Contaminant Levels (RCLs) were established in accordance with NR720.10 and NR720.12. Soil RCLs for the protection of the groundwater pathway and for non-industrial direct contact were taken from the RR programs RCL speadsheet.

C.4 Construction documentation – No Remedial actions and/or intrim actions specified in s.NR724.01(1) occurred at this site.

C.5 Decommissioning of Remedial Systems – No remedial systems were installed as part of this site investigation.

C.6 Photos

C.7 Other – No remedial systems were installed as part of this site investigation.

C.6 Photos

Photo #1: Area of cap to be maintained. - Looking southeast.

Photo #2: Area of cap to be maintained – Looking north.

Attachment D/Maintenance Plan(s)

D.1 Location map(s)

D.2 Brief descriptions

D.3 Description of maintenance action(s)

D.4 Inspection log

D.5 Contact information

D.6 Photographs

D.I LOCATION MAP

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WISCONSIN

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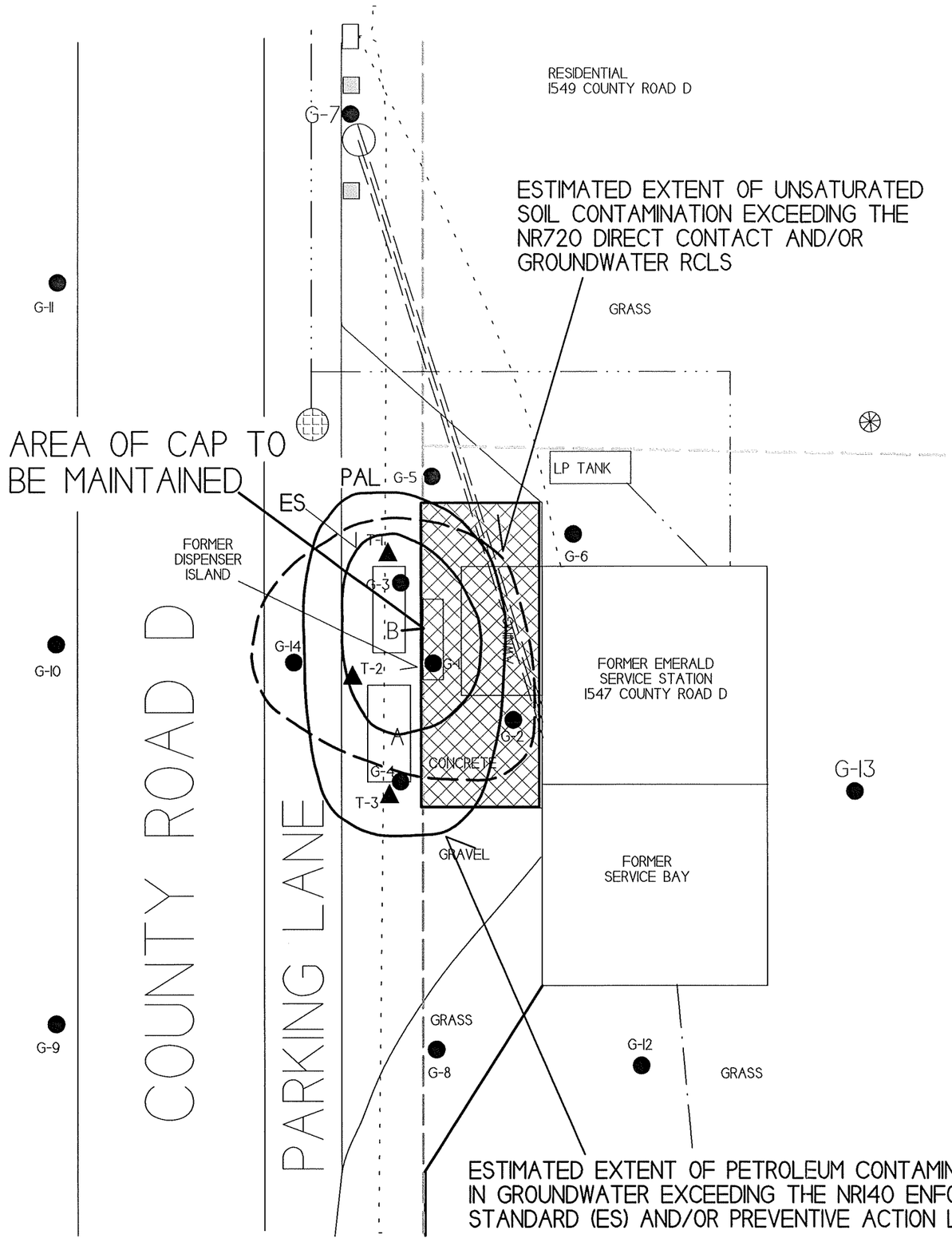
NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

SCALE:
1 INCH = 15 FEET
0 15



▲ = SITE ASSESSMENT SOIL SAMPLING LOCATION

● = GEOPROBE BORING LOCATION

⊛ = POTABLE WELL LOCATION

◯ = POWER POLE

⊞ = MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A= 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B= 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

D.2 Brief Description

CAP MAINTENANCE PLAN

September 1, 2014

Property Located at:
1547 County Road D
Glenwood City (Emerald), WI 54013

WDNR BRRTS# 03-56-000393

Parcel ID# 016-1040-90-050

Legal Description:

Commencing at a point 446 feet South of the Southwest corner of Lot 1, Block 1, Lindefields Addition to the Village of Emerald; thence East 40½ feet; thence South 154½ feet; thence West 40½ feet; thence North 154½ feet to Place of Beginning, all being in Section Eighteen (18), Township Thirty (30) North, Range Fifteen (15) W.

ALSO
Commencing at the W1/4 corner of Section 18, T30N, R15W, Town of Glenwood, St Croix County, Wisconsin; thence S01^0 05' 24" E 204.27' along the West line of the SW1/4 of Section 18; thence S89^0 15' 15" E 33.59' on an extension of the North line of Certified Survey Map filed in Volume 7, Page 2067 to the Point of Beginning; thence S01^0 15' 00" E 3.99' to the Northwesterly corner of that parcel described in Volume 1143, Page 595; thence N88^0 45' 00" E 40.50' along the North line of said parcel; thence S01^0 15' 00" E 154.50' along the East line of said parcel; thence S88^0 45' 00" W 40.50' along the South line of said parcel; thence S01^0 15' 00" E 19.61'; thence N87^0 10' 49" E 120.13'; thence N07^0 35' 31" E 171.74' to that line that is an extension of the North line of that Certified Survey Map filed in Volume 7, Page 2067.; thence N89^0 15' 15" W 146.57' to the Point of Beginning.

Introduction

This document is the Maintenance Plan for a cap at the above-referenced property in accordance with the requirements of s. NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the existing concrete cap occupying the area over the contaminated groundwater plume or soil on-site.

More site-specific information about this property may be found in:

- The case file in the DNR West Central regional office
- BRRTS on the Web (DNR's internet based data base of contaminated sites): http://dnr.wi.gov/botw/SetUpBasicSearchForm.do
- GIS Registry PDF file for further information on the nature and extent of contamination and
- The DNR project manager for St. Croix.

Description of Contamination

Soil contaminated by Petroleum Volatile Organic Compounds (PVOCs) and/or Lead is located from at least 3.5 feet below ground surface (bgs) to the watertable (approximately 3 to 7 feet) on the subject property. Groundwater contaminated by PVOCs is located at a depth of approximately 3 to 7 feet bgs on the subject property. The extent of the soil and groundwater contamination is shown on Attachment D.1.

Description of the Cover to be Maintained

The cap consists of a concrete pad that is approximately 3 to 6 inches thick and the the former concrete dispenser island located to the west of the on-site building. See Attachment D.1.

Cover Purpose

The cap over the contaminated soil and groundwater serves as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. The cap also acts as a partial infiltration barrier to minimize future soil-to-groundwater contamination migration that would violate the groundwater standards in ch. NR 140, Wisconsin Administrative Code. Based on the current and future use of the property, the barrier should function as intended unless disturbed.

Annual Inspection

The cap overlying the contaminated soil and groundwater plume as depicted in Attachment D.1 will be inspected once a year, normally in the spring after all snow and ice is gone, for deterioration, cracks and other potential problems that can cause exposure to and/or additional infiltration into underlying soils. The inspections will be performed by the property owner or their designated representative. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from traffic, increasing age and other factors. Any area where soils have become or are likely to become exposed and/or where infiltration from the surface will not be effectively minimized on the paved surfaces will be documented. A log of the inspections and any repairs will be maintained by the property owner and is included as Form 4400-305 Continuing Obligations and Maintenance Log. The log will include recommendations for necessary repair of any areas where underlying soils are exposed and/or where infiltration from the surface will not be effectively minimized on the paved surfaces. Once repairs are completed, they will be documented in the inspection log. A copy of the inspection log will be kept at the address of the property owner and available for submittal or inspection by Wisconsin Department of Natural Resources ("WDNR") representatives upon their request.

Note: The WDNR may, in some instances, require in the case closure letter that the inspection log be submitted at least annually after every inspection. If the case closure letter requires that, then a copy of the inspection log must be submitted to the WDNR at least annually after every inspection.

D.3 Description of Maintenance Action(s)

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs can include patching and filling or larger resurfacing or construction operations. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment ("PPE"). The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored and disposed of by the owner in accordance with applicable local, state and federal law.

In the event the cap overlying the contaminated soil and groundwater plume is removed or replaced, the replacement barrier must be equally impervious. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Maintenance Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the cap, will maintain a copy of this Maintenance Plan on-site and make it available to all interested parties (i.e. on-site employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of DNR Prior to Actions Affecting a Cover or Cap
The following activities are prohibited on any portion of the property where [pavement, a building foundation, soil cover, engineered cap or other barrier] is required as shown on the attached map, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure.

Amendment or Withdrawal of Maintenance Plan

This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of WDNR.

D.4 Inspecton Log

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Continuing Obligations Inspection and Maintenance Log

Form 4400-305 (2/14)

Directions: In accordance with s. NR 727.05 (1) (b) 3., Wis. Adm. Code, use of this form for documenting the inspections and maintenance of certain continuing obligations is required. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.]. When using this form, identify the condition that is being inspected. See the closure approval letter for this site for requirements regarding the submittal of this form to the Department of Natural Resources. A copy of this inspection log is required to be maintained either on the property, or at a location specified in the closure approval letter. Do NOT delete previous inspection results. This form was developed to provide a continuous history of site inspection results. The Department of Natural Resources project manager is identified in the closure letter. The project manager may also be identified from the database, BRRTS on the Web, at http://dnr.wi.gov/botw/SetUpBasicSearchForm.do, by searching for the site using the BRRTS ID number, and then looking in the "Who" section.

Activity (Site) Name	BRRTS No.
Emerald Service Station	03-56-000393

Inspections are required to be conducted (see closure approval letter):	When submittal of this form is required, submit the form electronically to the DNR project manager. An electronic version of this filled out form, or a scanned version may be sent to the following email address (see closure approval letter):
◉ annually ○ semi-annually ○ other – specify ______	

Inspection Date	Inspector Name	Item	Describe the condition of the item that is being inspected	Recommendations for repair or maintenance	Previous recommendations implemented?	Photographs taken and attached?
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☐ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N

D.5 Contact Information

Contact Information
September 2014

Site Owner and Operator:

Katherine Potter
1547 County Road D
Glenwood City, WI 54013
(715)928-3443

Consultant:

METCO
709 Gillette Street, Suite 3
La Crosse, WI 54603
(608) 781-8879

WDNR:

Pat Collins
890 Spruce Street
Baldwin, WI 54002
(715) 684-2914 ext.117

D.6 Photographs

03-56-000393
BRRTS No.

Emerald Service Station
Activity (Site) Name

Continuing Obligations Inspection and Maintenance Log
Form 4400-305 (2/14)

{Click to Add/Edit Image} Date added: 08/15/2014

Title: Area of cap to be maintained. - Looking southeast.

{Click to Add/Edit Image} Date added: 08/15/2014

Title: Area of cap to be maintained – Looking north.

Attachment E/Monitoring Well Information

Monitoring wells were not installed as part of this site investigation.

Attachment F/Notification to Owners of Impacted Properties

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Impacted Property Notification Information

Form 4400-246 (R 10/12)

Notice: Completion of this form is mandatory for applications for case closure pursuant to ch. 292, Wis. Stats. and ch. NR 726, Wis. Adm. Code, where specific circumstances exist at the time of case closure. This form applies to situations where: (1) the party conducting the cleanup does not own the source property; (2) contamination has impacted a neighboring property to a certain degree; and (3) not all monitoring wells can/will be abandoned at the time of closure. A letter notifying these property owners is required of the responsible party if certain circumstances exist. The DNR's "Guidance on Case Closure and the Requirements for Managing Continuing Obligations" (PUB-RR-606) specifies those notification requirements. A model "Template for Notification of Residual Contamination and Continuing Obligations" (PUB-RR-919) can be downloaded at: http://dnr.wi.gov/files/PDF/pubs/rr/RR919.pdf. The Department will not consider, or act upon your application, unless all applicable sections are completed on this form and the closure fee and any other applicable fees, required under ch. NR 749, Wis. Adm. Code, Table 1 are included. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

BRRTS No.	Activity Name
03-56-000393	Emerald Service Station

						Letter Sent To:			Reasons Letter Sent:							
ID	Impacted Property Address	Parcel No.	Date of Letter	WTMX	WTMY	Source Property Owner is not RP	Right of Way Government or Other	Impacted Off-Site Property Owner	Groundwater Exceeds ES	Residual Soil Exceeds Standards	Cap/Engineerd Control	Industrial Use Soil Standards	Vapor System in Place	Vapor Asmt Needed if use Changes	Structural Impediment	Lost, Transferred or Open Wells
A	County Road D	Right of Way		342299	514552		X		X	X						

Include this completed page as an attachment with all notifications provided under sections A and B.

Contact Information

Responsible Party: The person responsible for sending this form, and for conducting the environmental investigation and cleanup is:

Responsible Party Name

Contact Person Last Name	First	MI	Phone Number (include area code)
Potter	Katherine	A	(715) 928-3443

Address	City	State	ZIP Code
1547 County Road D	Glenwood City (Emerald)	WI	54013

E-mail

Name of Party Receiving Notification:

Title	Last Name	First	MI	Phone Number (include area code)
Mr.	Ramberg (St. Croix County)	Tim		(715) 796-2227

Address	City	State	ZIP Code
920 Third Street, P.O. Box 108	Hammond	WI	54015

Site Name and Source Property Information:

Site (Activity) Name Emerald Service Station

Address	City	State	ZIP Code
1547 County Road D	Glenwood City (Emerald)	WI	54013

DNR ID # (BRRTS#)	(DATCP) ID #
03-56-000393	

Contacts for Questions:

If you have any questions regarding the cleanup or about this notification, please contact the Responsible Party identified above, or contact:

Environmental Consultant: METCO

Contact Person Last Name	First	MI	Phone Number (include area code)
Powell	Jason		(608) 781-8879

Address	City	State	ZIP Code
709 Gillette Street, Suite 3	La Crosse	WI	54603

E-mail jasonp@metcohq.com

Department Contact:

To review the Department's case file, or for questions on cleanups or closure requirements, contact:

Department of: Natural Resources (DNR)

Address	City	State	ZIP Code
890 Spruce St.	Baldwin	WI	54002

Contact Person Last Name	First	MI	Phone Number (include area code)
Collins	Pat		(715) 684-2914

E-mail (Firstname.Lastname@wisconsin.gov) Patrick.Collins@wisconsin.gov

The affected property is:

- ○ the source property (the source of the hazardous substance discharge), but the property is not owned by the person who conducted the cleanup (a deeded property)
- ○ a deeded property affected by contamination from the source property
- ◉ a right-of-way (ROW)
- ○ a Department of Transportation (DOT) ROW

Section B: ROW Notification: Residual Contamination and/or Continuing Obligations - Non-DOT ROWs

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

920 Third Street, P.O. Box 108
Hammond, WI, 54015

Dear Mr. Ramberg (St. Croix County):

I am providing this notification to inform you of the location and extent of contamination remaining in a right-of-way for which you are responsible, and of certain long-term responsibilities (continuing obligations) for which county of St. Croix may become responsible. I have conducted an investigation of a release of leaded gasoline on 1547 County Road D, Glenwood City (Emerald), WI, 54013 that has shown that contamination has migrated into the right-of-way for which county of St. Croix is responsible. I have conducted a cleanup, and will be requesting that the Department of Natural Resources (DNR) grant case closure. Closure means that the DNR will not be requiring any further investigation or cleanup action to be taken. However, continuing obligations may be imposed as a condition of closure approval.

You have 30 days to comment on the proposed closure request:

The DNR will not review my closure request for at least 30 days after the date of this letter. As an affected right-of-way holder, you have a right to contact the DNR to provide any technical information that you may have that indicates that closure should not be granted for this site. If you would like to submit any information to the DNR that is relevant to this closure request, you should mail that information to the DNR contact: Pat Collins at 890 Spruce St., Baldwin, WI, 54002 .

Residual Contamination:

Groundwater Contamination:

Groundwater contamination originated at the property located at 1547 County Road D, Glenwood City (Emerald), WI, 54013 .

Contaminated groundwater has migrated onto your property at
County Road D adjacent to the property located at 1547 County Road D in the Town of Emerald.

The levels of
Benzene, Ethylbenzene, Naphthalene, Toluene, Trimethylbenzene, and Xylene
contamination in the groundwater on your property are above the state groundwater enforcement standards found in ch. NR 140, Wis. Adm. Code.

Soil Contamination:

Soil contamination remains at
County Road D adjacent to the property located at 1547 County Road D in the Town of Emerald.

The remaining contaminants include
Lead, Benzene, Ethylbenzene, Naphthalene, Toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, and Xylene at levels which exceed the soil standards found in ch. NR 720, Wis. Adm. Code. The following steps have been taken to address any exposure to the remaining soil contamination.
Removal of contaminant source.

If residual soil or groundwater contamination is likely to affect water collected in a pit/trench that requires dewatering, a general permit for Discharge of Contaminated Groundwater from Remedial Action Operations may be needed. If you or any other person plan to conduct utility or building construction for which dewatering will be necessary, you or that person must contact the DNR's Water Quality Program, and if necessary, apply for the necessary discharge permit. Additional information regarding discharge permits is available at http://dnr.wi.gov/topic/wastewater/GeneralPermits.html.

Continuing Obligations on the Right-of-Way (ROW) : As part of the cleanup, I am proposing that the following continuing obligations be used at the affected ROW. If my closure request is approved, you will be responsible for the following continuing obligations:

Residual Soil Contamination:
If soil is excavated from the areas with residual contamination, the right-of-way holder at the time of excavation will be responsible for the following:

- determine if contamination is present,
- determine whether the material would be considered solid or hazardous waste,
- ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules. Contaminated soil may be managed in-place, in accordance with s. NR 718, Wis. Adm. Code, with prior Department approval.

The right-of-way holder needs to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans from ingestion, inhalation or dermal contact.

Depending on site-specific conditions, construction over contaminated soils or groundwater may result in vapor migration of contaminants into enclosed structures or migration along newly placed underground utility lines. The potential for vapor inhalation and means of mitigation should be evaluated when planning any future redevelopment, and measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

GIS Registry and Well Construction Requirements:

If this site is closed, all properties within the site boundaries where contamination remains, or where a continuing obligation is applied, will be listed on the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web, at http://dnr.wi.gov/topic/Brownfields/clean.html. Inclusion on this database provides public notice of remaining contamination and of any continuing obligations. Documents can be viewed on this database, and include final closure letters, site maps and any applicable maintenance plans. The location of the site may also be viewed on the Remediation and Redevelopment Sites Map (RR Sites Map), on the "GIS Registry" layer, at the same internet address listed above.

DNR approval prior to well construction or reconstruction is required for all sites included in the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. Special well construction standards may be necessary to protect the well from the remaining contamination. Well drillers need to first obtain approval from a regional water supply specialist in DNR's Drinking Water and Groundwater Program. The well construction application, form 3300–254, is on the internet at http://dnr.wi.gov/topic/wells/documents/3300254.pdf.

Site Closure:
Once the DNR grants closure, site information, including a copy of the final closure letter, site maps and any applicable maintenance plan, may be found by using BRRTS on the Web. The status of the site (open or closed) may also be checked by searching BRRTS on the Web.

You may also request a copy of the final closure letter from the **responsible party** or by writing to the DNR contact, at Pat Collins, Patrick.Collins@wisconsin.gov, (715) 684-2914 . The final closure letter will contain a description of the continuing obligation, any prohibitions on activities and will include any applicable maintenance plan.

If you have any questions regarding this notification, I can be reached at [Phone], [E-mai].

Signature of responsible party/environmental consultant for the responsible party	Date Signed
Katherine A Potter	8-17-2014

Attachment: Contact Information

Checklist of Documents to Submit

Factsheets:

☒ RR 819, Continuing Obligations for Environmental Protection

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Tim Ramberg - St. Croix County
920 Third Street
P.O. Box 108
Hammond, WI 54015

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7013 0600 0000 9414 7107

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Attachment G/Source Legal Documents

G.1 Deeds – Source Property and Other Impacted Properties

G.2 Certified Survey Map

G.3 Verification of Zoning

G.4 Signed Statement

VOL 1681 PAGE 442

G.1. Deeds - Source Property

Document Number

STATE BAR OF WISCONSIN FORM 2 - 1999
WARRANTY DEED

651328
KATHLEEN H. WALSH
REGISTER OF DEEDS
ST. CROIX CO., WI

RECEIVED FOR RECORD

07-17-2001 9:30 AM

WARRANTY DEED
EXEMPT H
CERT COPY FEE:
COPY FEE:
TRANSFER FEE: 1.20
RECORDING FEE: 12.00
PAGES: 2

Recording Area

This Deed, made between **Donovan Johnson and Marianne Johnson, husband and wife as survivorship marital property**

Grantor, and **Katherine A. Potter, a/k/a Kathy A. Potter, a single person**

Grantee.

Grantor, for a valuable consideration, conveys and warrants to Grantee the following described real estate in **St. Croix** County, State of Wisconsin (if more space is needed, please attach addendum):
See Exhibit A attached hereto and made a part hereof.

The parcel shown on this document is being added to the parcel shown on the document recorded in Volume 1143, Page 595, to create one parcel, and this transaction is thereby exempt from Chapter 18 of the St. Croix County Land Use Regulations pursuant to Section 18.05(A)(3). This property described as: Commencing at a point 446 feet S of the SW corner of Lot 1, Block 1, Lindefields Addition to the Village of Emerald; thence E 40½ feet; thence S 154½ feet; thence W 40½ feet; thence North 154½ feet to Place of Beginning, all being in Section 18-30-15.

Exceptions to warranties: Easements and restrictions of record.

THOMAS A. McCORMACK
Attorney at Law
1020 10th Ave.
PO Box 2120
Baldwin, WI 54002

016-1040-95-100
Parcel Identification Number (PIN)

This **is not** homestead property.
~~is~~ (is not)

Dated this 13th day of July, 2001

* Donovan Johnson

* Marianne Johnson

AUTHENTICATION

Signature(s) of Mariana Duque Johnson, aka Marianne Johnson

authenticated this 13th day of July, 2001

* Thomas A. McCormack

TITLE: MEMBER STATE BAR OF WISCONSIN
(If not, _____ authorized by § 706.06, Wis. Stats.)

THIS INSTRUMENT WAS DRAFTED BY
Thomas A. McCormack
Baldwin, WI 54002

(Signatures may be authenticated or acknowledged. Both are not necessary.)

ACKNOWLEDGMENT

STATE OF **WISCONSIN**)
) ss.
St. Croix County)

Personally came before me this _____ day of _____, 2001 the above named **Donovan Johnson and Marianne Johnson**

to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

* Annette E Peterson

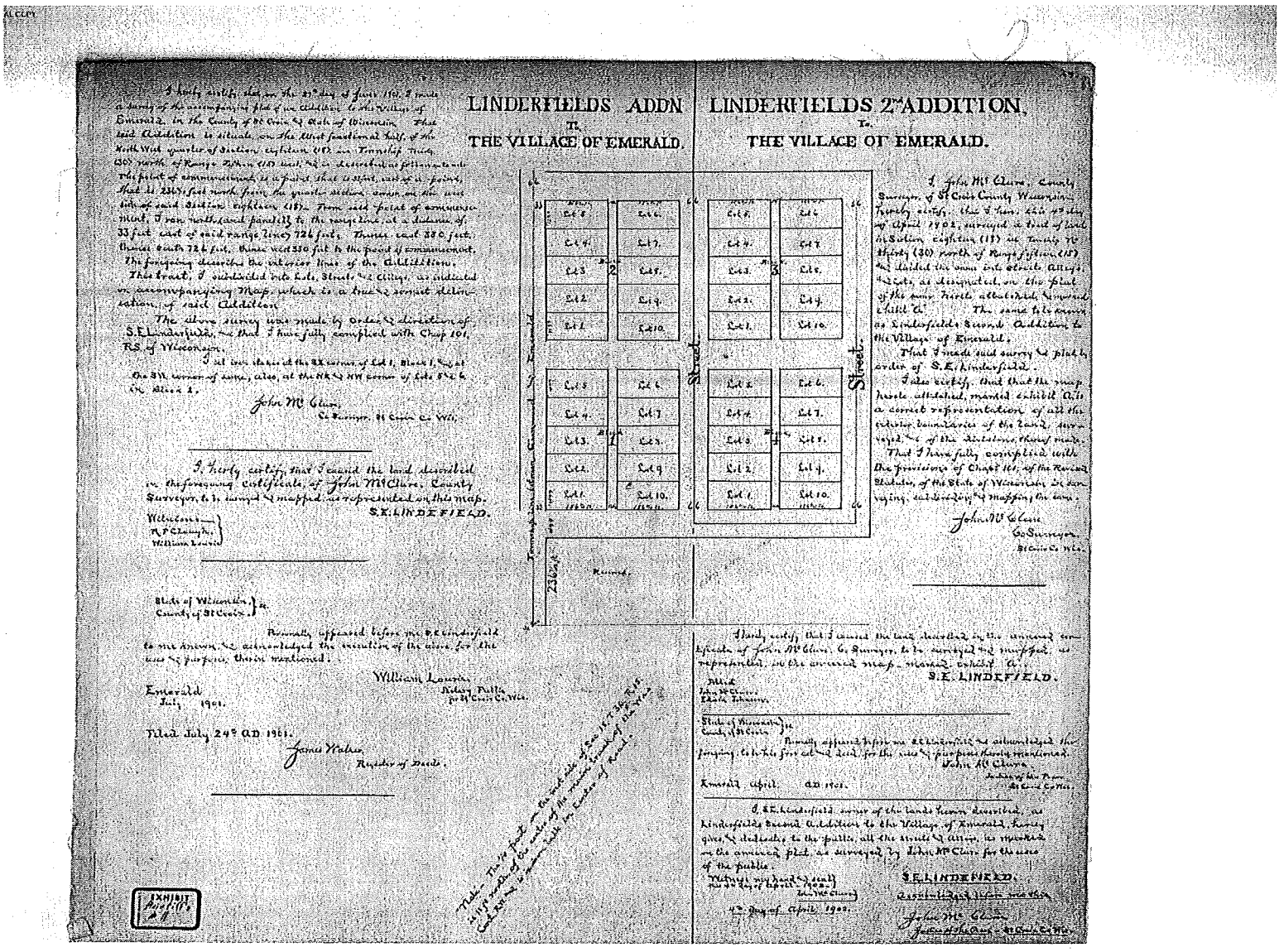
Notary Public, State of **Wisconsin**
My Commission is permanent. (If not, state expiration date: 2/17/02)

* Names of persons signing in any capacity must be typed or printed below their signature.

EXHIBIT A

OMMENCING AT THE W1/4 CORNER OF SECTION 18, T30N, R15W, TOWN OF GLENWOOD, T. CROIX COUNTY, WISCONSIN; THENCE S01°05'24"E 204.27' ALONG THE WEST LINE F THE SW1/4 OF SECTION 18; THENCE S89°15'15"E 33.59' ON AN EXTENSION OF THE ORTH LINE OF CERTIFIED SURVEY MAP FILED IN VOLUME 7, PAGE 2067 TO THE POINT F BEGINNING; THENCE S01°15'00"E 3.99' TO THE NORTHWESTERLY CORNER OF THAT ARCEL DESCRIBED IN VOLUME 1143, PAGE 595; THENCE N88°45'00"E 40.50' ALONG THE ORTH LINE OF SAID PARCEL; THENCE S01°15'00"E 154.50' ALONG THE EAST LINE OF AID PARCEL; THENCE S88°45'00"W 40.50' ALONG THE SOUTH LINE OF SAID PARCEL; HENCE S01°15'00"E 19.61' ; THENCE N87°10'49"E 120.13'; THENCE N07°35'31"E 171.74' TO HAT LINE THAT IS AN EXTENSION OF THE NORTH LINE OF THAT CERTIFIED SURVEY AP FILED IN VOLUME 7, PAGE 2067.; THENCE N89°15'15"W 146.57' TO THE POINT OF EGINNING.

G.2. Certified Survey Map



LINDERFIELDS ADDN
TO
THE VILLAGE OF EMERALD.

LINDERFIELDS 2ND ADDITION
TO
THE VILLAGE OF EMERALD.

I hereby certify, that on the 21st day of June 1901, I made a survey of the accompanying plat of an Addition to the Village of Emerald, in the County of St Croix & State of Wisconsin. That said Addition is situate on the East fractional half of the North West quarter of Section eighteen (18) in Township Thirty (30) North of Range Twelve (12) West & is described as follows, to wit: The point of commencement is a point that is West, and is a point that is 2365 feet North from the quarter section corner on the west side of said Section eighteen (18). From said point of commencement I ran North, (and parallel) to the range line at a distance of 33 feet East of said range line 724 feet. Thence East 330 feet. Thence South 724 feet. Thence West 330 feet to the point of commencement. The foregoing describes the exterior lines of the Addition.

That I subdivided into Lots, Streets & Alleys, as indicated on accompanying Map, which is a true & correct delineation of said Addition.

The above survey was made by Order & direction of S.E. Linderfield, and that I have fully complied with Chap 101, R.S. of Wisconsin.

I set iron stakes at the SE corner of Lot 1, Block 1, Sd at the SW corner of same, also, at the NE & NW corner of Lots 5 & 6 in Block 1.

John Mc Clure,
Co Surveyor, St Croix Co Wis.

I hereby certify, that I created the land described in the foregoing Certificate, of John Mc Clure, County Surveyor, & I surveyed & mapped the same as represented on this map.

S.E. LINDERFIELD.

Witnesses:
A.F. Clough
William Lawrie

State of Wisconsin } ss.
County of St Croix }

Personally appeared before me S.E. Linderfield to me known, & acknowledged the execution of the above for the uses & purposes therein mentioned.

William Lawrie
Notary Public
for St Croix Co Wis.

Emerald
July 1901.

Filed July 24th A.D. 1901.

James Walker
Register of Deeds.

I, John Mc Clure, County Surveyor of St Croix County Wisconsin, hereby certify, that I have this 9th day of April 1902, surveyed a tract of land in Section eighteen (18) in Township Thirty (30) North of Range twelve (12) West, and divided the same into Streets, Alleys & Lots, as designated on the plat of the same hereto attached, marked Exhibit A. The same to be known as Linderfield's Second Addition to the Village of Emerald.

That I made said survey & plat by order of S.E. Linderfield.

I also certify, that that the map hereto attached, marked exhibit A, is a correct representation of all the exterior boundaries of the land surveyed & of the divisions thereof made.

That I have fully complied with the provisions of Chapt 181, of the Revised Statutes, of the State of Wisconsin, in surveying, subdividing & mapping the same.

John Mc Clure
Co Surveyor
St Croix Co Wis.

I hereby certify that I created the land described in the annexed certificate of John Mc Clure, Co Surveyor, to be surveyed & mapped, as represented on the annexed map marked exhibit A.

S.E. LINDERFIELD.

Witness:
[illegible]

State of Wisconsin }
County of St Croix } ss.

Personally appeared before me S.E. Linderfield & acknowledged the foregoing Cert to be his free act & deed, for the uses & purposes therein mentioned.

John Mc Clure
Notary Public
St Croix Co Wis.

Emerald April A.D. 1902.

I, S.E. Linderfield owner of the lands herein described, as Linderfields Second Addition to the Village of Emerald, hereby give & dedicate to the public, all the streets & alleys, as marked on the annexed plat, as surveyed by John Mc Clure for the uses of the public.

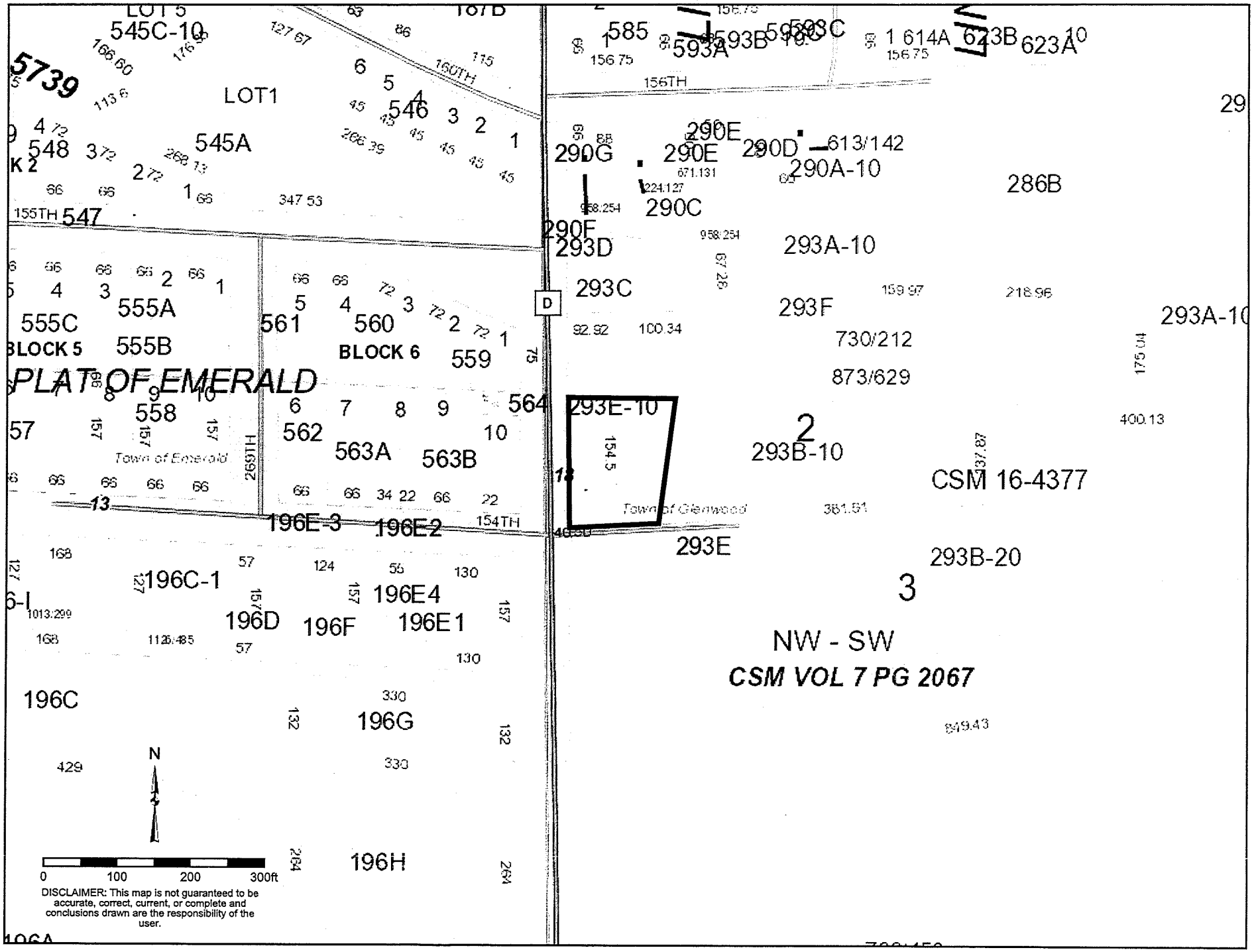
Witness my hand & seal this 9th day of April 1902.

S.E. LINDERFIELD.

John Mc Clure
Notary Public St Croix Co Wis.

Note. The 12 feet on each side of Sec 18 T 30 R 19 W is reserved for the use of the owners of the adjoining lands for fences.

EXHIBIT
Plaintiff's
A



G.2. Certified Survey Map

G.3. Verification of Zoning

2014 Property Record | St Croix County, WI

Assessed values not finalized until after Board of Review.
*Property information is valid as of **AUG 12 2014 10:28PM** .*

OWNER

KATHERINE A POTTER
1547 CTY RD D
EMERALD, WI 54013

CO-OWNER(S)

PROPERTY DESCRIPTION

SEC 18 T30N R15W PT NWSW COM 446' S OF SW COR LOT 1 BLK 1 L. ADD, TH E 40 1/2', S 154 1/2',W 40 1/2',N 154 1/2'TO POB FKA 016-1040-90 (293E) & INC COMM NW COR SD PARCEL; TH N 88' E 40.50FT ALNG N LN TH S 01' E 154.50FT; TH S 88 DEG W 40.50FT

Property Address:
1547 CTY RD D

Municipality: *TOWN OF GLENWOOD*

PROPERTY INFORMATION

Parcel ID: *016-1040-90-050*
Alternate ID: *18.30.15.293E-10*
School Districts:
SCH DIST GLENWOOD CITY
Other Districts:
GLENWOOD & EMERALD SAN 1
UPPER WILLOW REHAB DIST
WITC

Section	Town	Range	Qtr Qtr Section	Qtr Section
18	30N	15W	NW	SW

Lot:
Block:
Plat Name *UNDEFINED*

DEED INFORMATION

Volume	Page	Document #
1681	444	651329
1681	442	651328
442	71	
1042	253	

TAX INFORMATION

Net Tax Before: *.00*
Lottery Credit: *.00*
First Dollar Credit: *.00*
Net Tax After: *.00*

	Amt. Due	Amt. Paid	Balance
Tax	.00	.00	.00
Special Assmnt	.00	.00	.00
Special Chrg	.00	.00	.00
Delinquent Chrg	.00	.00	.00
Private Forest	.00	.00	.00
Woodland Tax	.00	.00	.00
Managed Forest	.00	.00	.00
Prop. Tax Interest		.00	.00
Spec. Tax Interest		.00	.00
Prop. Tax Penalty		.00	.00
Spec. Tax Penalty		.00	.00
Other Charges	.00	.00	.00
TOTAL	.00	.00	.00
Over-Payment		.00	

LAND VALUATION

Valuation Date: *20130917*

Code	Acres	Land Value	Improvements	Total
G1	.500	7,000	56,000	63,000
	.500	7,000	56,000	63,000

Total Acres: *0.000*
Assessment Ratio: *0.0000*
Mill Rate: *0.000000000*
Fair Market Value: *0.00*

INSTALLMENTS

Period	End Date	Amount

G-1 = Residential

PAYMENT HISTORY (POSTED PAYMENTS)

Date	Receipt #	Source	Type	Amount	General Tax Status	Special Assess. Status	Interest	Penalty	Total

G.4. Signed Statement

WDNR BRRTS Case #: 03-56-000393

WDNR Site Name: Emerald Service Station

Geographic Information System (GIS) Registry of Closed Remediation Sites

In compliance with the revisions to the NR 700 rule series requiring certain closed sites to be listed on the Geographic Information System (GIS) Registry of Closed Remediation Sites (Registry) effective Nov., 2001, I have provided the following information.

To the best of my knowledge the legal descriptions provided and attached to this statement are complete and accurate.

Responsible Party:

Katherine A Potter - owner
(print name/title)

Katherine A Potter
(signature)

Aug 20, 2014
(date)

Site Investigation Report

Emerald Service Station
1547 County Highway D
Glenwood City (Emerald), Wisconsin

October 31, 2014
by METCO
WDNR File Reference #: 03-56-000393
PECFA Claim #: 54013-9999-00-A

METCO

Excellence through experience™

This document was prepared by:

Jason T. Powell
Staff Scientist

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

METCO
Excellence through experience™
709 Gillette Street, Suite 3♦ La Crosse, WI 54603 ♦ 1-800-552-2932 ♦ Fax (608) 781-8893 Email: rona@metcohq.com ♦www.metcohq.com

October 31, 2014

WDNR BRRTS#: 03-56-000393
PECFA Claim #: 54013-9999-00

Katherine Potter
1547 County Road D
Glenwood City, WI 54013

Dear Mrs. Potter,

Enclosed is our "Site Investigation Report" concerning the Emerald Service Station site in Emerald, Wisconsin. This report presents the complete data from all investigation activities.

According to the data collected during the investigation, it is the conclusion of METCO that under existing conditions and limitations, the extent and degree of petroleum contamination has been adequately defined in soil and groundwater to warrant a completed investigation as defined by the WDNR guidelines and regulations.

Based on the results of the site investigation, METCO recommends the Emerald Service Station site be **"closed"** for the following reasons: 1) Soil contamination exceeding the NR720 Direct Contact RCLs for Lead in the area of Geoprobe boring G-1 can be addressed through the use of a cap maintenance plan. 2) The groundwater impacted by the petroleum contamination appears to be perched watertable, which is not used for local potable water supply. 3) Although groundwater contamination exceeding the NR140 ES was encountered during the Geoprobe project, the WDNR reviewed the Geoprobe project results and determined that monitoring well installation would not be required. 4) Analytical results show no petroleum impacts to the on-site potable well and five nearby private potable wells. 5) Based on the receptor survey, there appears to be no risks associated with the existing contamination from this site concerning vapor intrusion, utility corridors, or surface waters.

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: Patrick Collins – WDNR

EXECUTIVE SUMMARY

A gas station operated on the subject property from approximately the 1950's until 1972. Former UST's include a 1,000-gallon leaded gasoline and a 2,000-gallon leaded gasoline. The UST's were removed on August 20, 1992. Currently the subject property is used for residential purposes.

On July 30, 1990, Gottfried Environmental Services completed three soil borings in the area of the UST's during a Preliminary Site Assessment. Soil samples were collected from the bottom of each boring at depths ranging from 66 to 75 inches below ground surface (bgs) for PID analysis. PID analysis indicated that petroleum contamination was present in all three soil samples (T-1, T-2, and T-3). The two soil samples (T-1 and T-3) indicating the highest PID response were submitted for laboratory analysis (BTEX and FID-gasoline). Laboratory analysis confirmed the presence of petroleum contamination and was subsequently reported to the WDNR. The WDNR then required that a site investigation be conducted at the Emerald Service Station property.

The LUST investigation consisted of a Geoprobe project and private potable well sampling.

The Geoprobe Project clearly shows that released petroleum products have impacted the local soil and groundwater. Results of the investigation are as follows:

- Local unconsolidated material generally consists of 4 to 6 feet of a clay to sandy clay with some gravel, underlain by 6 to 9 feet of a fine to coarse grained sand to clayey sand with gravel, underlain by at least 1 to 2 feet of a sandy silt/clay with some gravel. Fill material consisting of sand and gravel to clayey sand with gravel was encountered in the area of the removed UST systems.

- Bedrock was not encountered during the site investigation, but sandstone bedrock is believed to exist at approximately 50 to100 feet bgs, based on local well construction reports.

- Based on the data collected during the site investigation, perched water appears to be present in the area of the subject property. During the Geoprobe project, a perched watertable was encountered at depths ranging from approximately 3 to 9 feet bgs. Based on local well construction reports, the watertable exists at approximately 100 feet bgs.

- Based on the results of the geoprobe groundwater samples, contamination in the perched groundwater appears to be migrating toward the south, indicating a southerly groundwater flow direction. Groundwater flow direction is not known for the deeper watertable, but is expected to be generally towards the south to southwest.

- An area of unsaturated soil contamination, which exceeds the NR720 Groundwater and/or Direct Contact RCLs was encountered in the area of the removed UST systems. This soil contamination plume appears to measure approximately 35 feet long, up to 32 feet wide, and extends to the perched watertable (approximately 3 to 9 feet bgs). One unsaturated soil sample (G-1-1) showed a NR720 Direct Contact RCL exceedance for Lead.

- A dissolved phase contaminant plume exceeding the NR140 Enforcement Standards and Preventive Action Limits has formed at the perched watertable in the area of the removed UST systems and has migrated toward the south. This plume is approximately 42 feet long and 25 feet wide.

- Based on the receptor survey, there appears to be no risks associated with the existing contamination from this site concerning vapor intrusion, utility corridors, or surface waters.

- Private potable water supply wells exist in the area of the subject property. However, sampling of the on-site potable well and five other nearby potable wells did not show any petroleum impacts to these wells.

According to the data collected during the investigation, it is the conclusion of METCO that under existing conditions and limitations, the extent and degree of petroleum contamination has been adequately defined in soil and groundwater to warrant a completed investigation as defined by the WDNR guidelines and regulations.

Based on the results of the site investigation, METCO recommends the Emerald Service Station site be **"closed"** for the following reasons: 1) Soil contamination exceeding the NR720 Direct Contact RCLs for Lead in the area of Geoprobe boring G-1 can be addressed through the use of a cap maintenance plan. 2) The groundwater impacted by the petroleum contamination appears to be perched groundwater, which is not used for local potable water supply. 3) Although groundwater contamination exceeding the NR140 ES was encountered during the Geoprobe project, the WDNR reviewed the Geoprobe project results and determined that monitoring well installation would not be required. 4) Analytical results show no petroleum impacts to the on-site potable well and five nearby private potable wells. 5) Based on the receptor survey, there appears to be no risks associated with the existing contamination from this site concerning vapor intrusion, utility corridors, or surface waters.

Site closure will be conditional on listing on the WDNR GIS Registry for residual soil and groundwater contamination. The necessary deed information and other details of the GIS Registry submittal process are presented in the Case Closure – GIS Registry packet. The $1,050 Closure Review fee and $650 GIS Registry fees (soil & groundwater) are not being submitted at this time as Ms. Potter is on a fixed income and does not have the wherewithal to pay the required $1,700 Closure and GIS Fee.

TABLE OF CONTENTS

Table of Contents

1.0 INTRODUCTION AND BACKGROUND....1
2.0 GEOLOGY AND RECEPTORS....3
3.0 SITE INVESTIGATION RESULTS, RISK CRITERIA....5
4.0 CONCLUSIONS....9
5.0 REFERENCES....11
6.0 FIGURES....12
7.0 DATA TABLES, GRAPHS, AND STATISTICAL ANALYSIS....13
8.0 SITE PHOTOGRAPHS....14
APPENDIX A/ METHODS OF INVESTIGATION....15
APPENDIX B/ ANALYTICAL METHODS & LABORATORY DATA REPORTS....16
APPENDIX C/ BOREHOLE DOCUMENTATION....17
APPENDIX D/ OTHER DOCUMENTATION....18
APPENDIX E/ QUALIFICATIONS OF METCO PERSONNEL....19
APPENDIX F/ STANDARD OF CARE....20

1.0 INTRODUCTION AND BACKGROUND

A Site 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 more than 10 ppm Gasoline Range Organics (GRO) or Diesel Range Organics (DRO) requires an investigation. Any soil that tests more than the Chapter NR720 Groundwater Residual Contaminant Levels (RCLs), Direct Contact RCLs, and/or Soil Saturation (C-sat) Values may require possible remediation. Any groundwater that tests more than the Preventive Action Limits (PAL) or Enforcement Standards (ES) for compounds listed in Chapter NR140 Groundwater Quality Standards requires an investigation and possible remediation. For a further explanation of WDNR rules and regulations, see Appendix D.

This report presents data collected during the Site Investigation. The purpose of this investigation was to:

1) Determine the extent and degree of petroleum contamination in the environment.
2) Determine if any risks exist to the environment or public health.
3) As conditions warrant, bring the site to closure.

1.1 Responsible Party Information

Katherine Potter
1547 County Road D
Glenwood City, WI 54013
(715) 928-3443

1.2 Consultant Information

Consultant

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

Subcontractors

Geiss Soil & Samples, LLC
W4490 Pope Road
Merrill, WI 54452
(715) 539-3928

Synergy Environmental Lab
1990 Prospect Court
Appleton, WI 54914
(920) 830-2455

1.3 Site Location

Site address:
1547 County Road D
Glenwood City (Emerald), WI 54013

Latitude and Longitude:
45° 4' 55" N and 92° 15' 28" W

WTM Coordinates:
342318, 514534

Township/Range:
NW ¼, SW ¼, Section 18, Township 30 North, Range 15 West, St. Croix County.

1.4 Site History

A gas station operated on the subject property from approximately the 1950's until 1972. Former UST's include a 1,000-gallon leaded gasoline and a 2,000-gallon leaded gasoline. The UST's were removed on August 20, 1992. Currently the subject property is used for residential purposes.

On July 30, 1990, Gottfried Environmental Services completed three soil borings in the area of the UST's during a Preliminary Site Assessment. Soil samples were collected from the bottom of each boring at depths ranging from 66 to 75 inches below ground surface (bgs) for PID analysis. PID analysis indicated that petroleum contamination was present in all three soil samples (T-1, T-2, and T-3). The two soil samples (T-1 and T-3) indicating the highest PID response were submitted for laboratory analysis (BTEX and FID-gasoline). Laboratory analysis confirmed the presence of petroleum contamination and was subsequently reported to the WDNR. The WDNR then required that a site investigation be conducted at the Emerald Service Station property.

The nearest known LUST site exists approximately 4 miles to the north of the subject property. Several UST's are known to have existed at the former Fleming Motors property, approximately 400 feet to the north of the subject property. However, the environmental status of the Fleming Motors property is currently unknown.

2.0 GEOLOGY AND RECEPTORS

2.1 Regional and Local Geology and Hydrogeology

Topography and Regional Setting

According to the USGS Hydrologic Atlas, Emerald is located in the southern portion of the St. Croix River Basin. This area is characterized by a relatively flat glacial outwash plain and numerous kettle lakes.

The elevation of the site is approximately 1,150 feet above Mean Sea Level (MSL). See Section 6.0 for site location.

Soil and Bedrock

Soil samples were described by METCO field personnel. Assisting literature included the Hydrologic Atlas, Wisconsin Geologic Logs, and Wisconsin Well Constructor Reports.

Geologic material in the area of investigation generally consists of of the following in downward stratigraphic order:

- From surface to depths ranging from 4 to 6 feet below ground surface (bgs) exists a brown to gray clay to sandy clay with some gravel.
- From 4 to 6 feet bgs to depth ranging from 10 to 13 feet bgs exists a brown to gray fine to coarse grained sand to clayey sand with gravel.
- From 10 to 13 feet bgs to depth ranging to at least 12 to 14 feet bgs exists a tan to brown to gray sandy silt/clay with some gravel.
- Fill material consisting of tan to brown to gray sand and gravel to clayey sand with gravel was encountered in the area of the removed UST systems.

Bedrock was not encountered during the site investigation, but sandstone bedrock is believed to exist at approximately 50 to 100 feet bgs, based on local well construction reports.

Please note that this is a generalization of the local geology and may not be consistent throughout the entire investigation area.

No other characteristics concerning the local sediments such as structures, voids, layering, lenses or secondary permeability are documented at this time.

Hydrogeology

Based on the data collected during the site investigation, perched groundwater appears to be present in the area of the subject property at depths ranging from 3 to 9 feet bgs. Based on local well construction reports, the deeper watertable

used for local potable water supply exists at approximately 100 feet bgs.

Based on the results of the geoprobe groundwater samples, contamination in the perched groundwater appears to be migrating toward the south, indicating a southerly groundwater flow direction. Groundwater flow direction is not known for the deeper watertable, but is expected to be generally towards the south to southwest.

We are not currently aware of any other existing aquitards or perched water in this area.

2.2 Receptors

Buildings, Basements, Sumps, Utility Corridors

The on-site building consists of a one story building constructed on an on-grade concrete slab. One Geoprobe boring (G-2) was conducted near the on-site residence to assess the potential for vapor intrusion. The soil analytical results from G-2 only showed NR720 Groundwater RCL exceedances for Benzene (0.067 - 0.096 ppm). The groundwater analytical results from G-2 showed several low level detects for Benzene (0.34 ppb), Ethylbenzene (0.70 ppb), and Xylene (1.82 ppb), but did not exceed the NR140 Enforcement Standards or Preventive Action Limits. Based on the low levels of soil and groundwater contamination detected in Geoprobe boring G-2, there does not appear to be a significant risk of vapor intrusion to the on-site residence.

A buried telephone line exists in the area of residual soil and groundwater contamination. The depth and construction of the this utility corridor is unknown, but telephone lines are typically located less than three feet below ground surface and constructed with native backfill. Thus it does not appear to be a preferential contaminant migration pathway.

Municipal and Private Water Supply Wells

The subject property and surrounding properties are all served by private potable wells. There are potentially as many as 25 to 40 potable wells located within 1,200 feet of the subject property. The locations of eight of these were identified during the site investigation which are listed in the following table:

Address	Distance From Removed UST System	Sampled (Y/N)	Notes:
1547 Cty Rd D (on-site)	70 feet southeast	Yes	VOC -524.2
1549 Cty Rd D	60 feet northeast	No	Access denied
1546 Cty Rd D	125 feet nothwest	No	Vacant
2698 154th Ave	180 feet west	Yes	VOC -524.2
2695 155th Ave	250 feet west-northwest	Yes	VOC -524.2
1543 Cty Rd D	230 feet southeast	Yes	VOC -524.2
1541 Cty Rd D	300 feet southeast	Yes	VOC -524.2
2685 Cty Rd D	390 feet southwest	Yes	VOC -524.2

Surface Waters

The nearest surface water is an intermittent unnamed creek, which exists approximately 300 feet to the south of the subject property. Based on the results of the Geoprobe project, the petroleum contamination does not appear to have impacted any surface waters.

3.0 SITE INVESTIGATION RESULTS, RISK CRITERIA

3.1 Methods of Investigation

Workscope

The workscope performed for the LUST Investigation included the following:

1) Collected site background information.
2) On July 31, 2012, METCO prepared a LUST Investigation Field Procedures Workplan.
3) On April 16, 2013, METCO personnel supervised the completion of fourteen Geoprobe borings (G-1 through G-14) to depths ranging from 8 to 14 feet bgs. Forty soil samples and fourteen groundwater samples were collected for field and/or laboratory analysis. A water sample was also collected from the on-site potable well for laboratory analysis. METCO personnel also conducted a potable well reconnaissance during the Geoprobe project.
4) On March 25, 2014, METCO personnel collected water samples from the on-site potable well and five neighboring potable wells.

Site Access Problems

One neighboring property owner denied access to sample the private wells on his two properties (1549 and 1551 Cty Rd D). During the March 25, 2014

potable well sampling event, METCO personnel could not collect a water sample from the property located at 1546 Cty Rd D as it was no longer occupied.

Analytical Methods

All samples were collected in a manner as to maintain their quality and to eliminate any possible cross contamination. METCO did not deviate from any WDNR or laboratory recommended procedures for sample collection, preservation, or transportation on this project to our knowledge.

Equipment advanced into the subsurface was cleaned between sampling locations. Cleaning consisted of washing with a biodegradable Alconox solution and rinsing with potable water. Disposable equipment was not cleaned, but immediately disposed of after use.

All samples were constantly kept on ice in a cooler and hand delivered to the laboratory.

3.2 Data Discussion

Soil Sampling Data

On April 16, 2013, Geiss Soil & Samples, LLC of Merrill, WI conducted a Geoprobe Project under the direction and supervision of METCO personnel. Fourteen Geoprobe borings were advanced to depths ranging from 8 to 14 feet bgs. Forty soil samples were collected for field analysis (PID) and geologic description. Fifteen soil samples were also submitted for laboratory analysis (GRO, VOC, PVOC, Naphthalene, and/or Lead).

Soil analytical results are summarized in the Pre-remedial Soil Analytical Tables with exceedances of the NR720 RCLs and/or Soil Saturation Values noted.

Soil sample locations are presented in the Detailed Site Map found in Section 6. All data is presented in the data tables in Section 7. The laboratory report is presented in Appendix B.

Groundwater Sampling Data

On April 16, 2013, during the Geoprobe project, fourteen groundwater samples were collected from the Geoprobe borings for laboratory analysis (PVOC and Naphthalene).

Groundwater analytical results are summarized in the Groundwater Analytical Tables with exceedances of the NR140 Enforcement Standards and/or Preventive Action Limits noted.

The Geoprobe boring locations are presented in the Detailed Site Map in Section 6. All data is presented in the data tables in Section 7. The lab reports are presented in Appendix B.

Private Potable Well Sampling Data

On April 16, 2013, during the Geoprobe project, METCO personnel collected a water sample from the on-site potable well for laboratory analysis (VOC-524.2) and conducted a potable well field reconnaissance to locate any other nearby potable wells.

On March 25, 2014, METCO personnel collected water samples from the on-site potable well and five neighboring potable wells (1541 and 1543 Cty Rd D, 2685 and 2698 154th Avenue, and 2695 155th Avenue) for laboratory analysis (VOC-524.2). Please note, the water samples from 1543 Cty Rd D and and 2685 154th Avenue had to be collected after a water softener and cartridge filter, respectively as there were no usable faucets before the softener and/or filter.

Potable well water analytical results are summarized in the Groundwater Analytical Tables.

The private potable well locations are presented in the Detailed Site Map in Section 6. All data is presented in the data tables in Section 7. The lab reports are presented in Appendix B.

Laboratory Certification

Synergy Environmental Lab
Wisconsin Lab Certification #445037560

3.3 Permeability and Hydraulic Conductivities

No monitoring wells were installed as part of this site investigation. Based on the Geoprobe Project, it appears that the perched groundwater is located within a fine to coarse grained sand to clayey sand.

3.4 Discussion of Results

The Geoprobe Project clearly shows that released petroleum products have impacted the local soil and groundwater. Results of the investigation are as follows:

Local unconsolidated material generally consists of 4 to 6 feet of a clay to sandy clay with some gravel, underlain by 6 to 9 feet of a fine to coarse grained sand to clayey sand with gravel, underlain by at least 1 to 2 feet of a sandy silt/clay with some gravel. Fill material consisting of sand and gravel to clayey sand with gravel was encountered in the area of the removed UST systems.

Bedrock was not encountered during the site investigation, but sandstone bedrock is believed to exist at approximately 50 to100 feet bgs, based on local well construction reports.

Based on the data collected during the site investigation, perched water appears to be present in the area of the subject property. During the Geoprobe project, perched groundwater was encountered at depths ranging from approximately 3 to 9 feet bgs. Based on local well construction reports, the local groundwater aquifer exists at approximately 100 feet bgs.

Based on the results of the geoprobe groundwater samples, groundwater contamination in the perched aquifer appears to be migrating toward the south, indicating a southerly groundwater flow direction in the perched aquifer. Groundwater flow direction is not known for the deeper groundwater aquifer, but is expected to be generally towards the south to southwest.

An area of unsaturated soil contamination, which exceeds the NR720 Groundwater and/or Direct Contact RCLs was encountered in the area of the removed UST systems. This soil contamination plume appears to measure approximately 35 feet long, up to 32 feet wide, and extends to the perched watertable (approximately 3 to 9 feet bgs). One unsaturated soil sample (G-1-1) showed a NR720 Direct Contact RCL exceedance for Lead.

A dissolved phase contaminant plume exceeding the NR140 Enforcement Standards and Preventive Action Limits has formed within the perched groundwater in the area of the removed UST systems and has migrated toward the south. This plume is approximately 42 feet long and 25 feet wide.

Based on the receptor survey, there appears to be no risks associated with the existing contamination from this site concerning vapor intrusion, utility corridors, or surface waters.

Private potable water supply wells exist in the area of the subject property. However, sampling of the on-site potable well and five other nearby potable wells did not show any petroleum impacts to these wells.

To our knowledge, this investigation has not had any major difficulties, unanticipated results, or questionable results.

The Detailed Site Map, Pre-Remedial Soil Contamination Map, Groundwater Isoconcentration Map, and Geologic Cross-Section Figures, which visually define the extent of contamination, are presented in Section 6.

3.5 Risk Assessment

Per the NR746.03 definitions a release from petroleum tanks is considered

"high risk" if any of the four following criterion are met:

1. Verified contaminant concentrations in a private or public potable well that exceeds the Preventive Action Limit established under Chapter, Stats. 160.
2. Petroleum product that is not in the dissolved phase (floating product) is present with a thickness of 0.01 feet or more, and verified by more than one sampling event.
3. An Enforcement Standard exceedance in groundwater within 1,000 feet of a well operated by a public utility, or within 100 feet of any other well used to provide water for human consumption.
4. An Enforcement Standard exceedance in fractured bedrock.

A "medium risk" site is defined as a site where contaminants have extended beyond the boundary of the source property, or there is confirmed contamination in the groundwater, but the site does not meet the definition of a "high risk" site.

A "low risk" site is defined as a site where contaminants are contained only within the soil on the source property and there is no confirmed contamination in groundwater.

Based on the NR746.03 definitions, the Emerald Service Station site is currently a "high risk" site due to the NR140 Enforcement Standard exceedances within 100 feet of the on-site potable well.

4.0 CONCLUSIONS

4.1 Investigation Summary

According to the data collected during the investigation, it is the conclusion of METCO that under existing conditions and limitations, the extent and degree of petroleum contamination has been adequately defined in soil and groundwater to warrant a completed investigation as defined by the WDNR guidelines and regulations.

4.2 Recommendations

Based on the results of the site investigation, METCO recommends the Emerald Service Station site be **"closed"** for the following reasons: 1) Soil contamination exceeding the NR720 Direct Contact RCLs for Lead in the area of Geoprobe boring G-1 can be addressed through the use of a cap maintenance plan. 2) The groundwater impacted by the petroleum contamination appears to be perched, which is not used for local potable water supply. 3) Although groundwater contamination exceeding the NR140 ES was encountered during

the Geoprobe project, the WDNR reviewed the Geoprobe project results and determined that monitoring well installation would not be required. 4) Analytical results show no petroleum impacts to the on-site potable well and five nearby private potable wells. 5) Based on the receptor survey, there appears to be no risks associated with the existing contamination from this site concerning vapor intrusion, utility corridors, or surface waters.

Site closure will be conditional on listing on the WDNR GIS Registry for residual soil and groundwater contamination. The necessary deed information and other details of the GIS Registry submittal process are presented in the Case Closure – GIS Registry packet. The $1,050 Closure Review fee and $650 GIS Registry fees (soil & groundwater) are not being submitted at this time as Ms. Potter is on a fixed income and does not have the wherewithal to pay the required $1,700 Closure and GIS Fee.

5.0 REFERENCES

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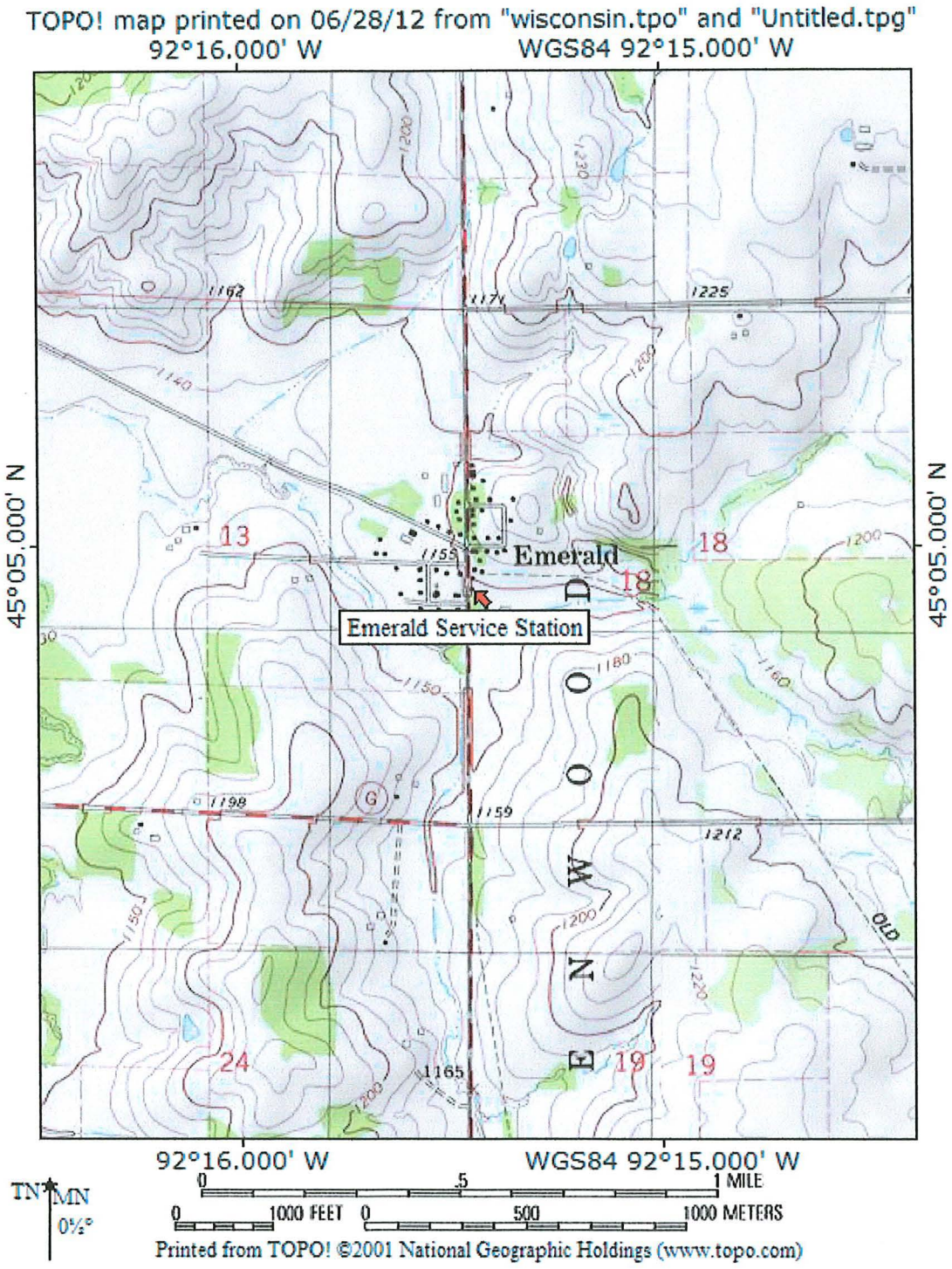
Other information and data was collected from Katherine Potter, Diggers Hotline, Geiss Soil & Samples, LLC; Synergy Environmental Lab, Wisconsin Department of Natural Resources, Town of Emerald, and local people.

6.0 FIGURES



B.1.a. LOCATION MAP CONTOUR INTERVAL 10 FEET
EMERALD SERVICE STATION – EMERALD, WI
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM

B.I.b DETAILED SITE MAP

EMERALD SERVICE STATION

METCO
709 Gillette Street, Ste 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience

EMERALD,
WISCONSIN

DRAWN BY: ED

DATE: 06/28/2012

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

• - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

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

SCALE: 1 INCH = 70 FEET

155TH AVENUE

RESIDENTIAL
2695 155TH AVENUE

TRAILER HOUSE

TAVERN

TAVERN
1546 COUNTY ROAD D

GARAGE

RESIDENTIAL
2698 154TH AVENUE

2696 154TH AVENUE

154TH AVENUE

RESIDENTIAL
2685 154TH AVENUE

COMMERCIAL
2687 154TH
AVENUE

RESIDENTIAL
1532 COUNTY ROAD D

SHARED WELL WITH
2685 154TH AVENUE

RESIDENTIAL
1526 COUNTY ROAD D

COUNTY ROAD D

PARKING LANE

RESIDENTIAL
2703 156TH AVENUE

1557 COUNTY ROAD D

NO ADDRESS

RESIDENTIAL
1551 COUNTY ROAD D

RESIDENTIAL
1549 COUNTY ROAD D

GRASS

LP Tank

ASPHALT

CONCRETE

GRAVEL

POWER SERVICE BAY

GARAGE

STORAGE TRAILER

FENCE

FORMER EMERALD
SERVICE STATION
1547 COUNTY ROAD D

RESIDENTIAL
1543 COUNTY ROAD D

GRAVEL DRIVEWAY

RESIDENTIAL
1541 COUNTY ROAD D

B.1.b DETAILED SITE MAP

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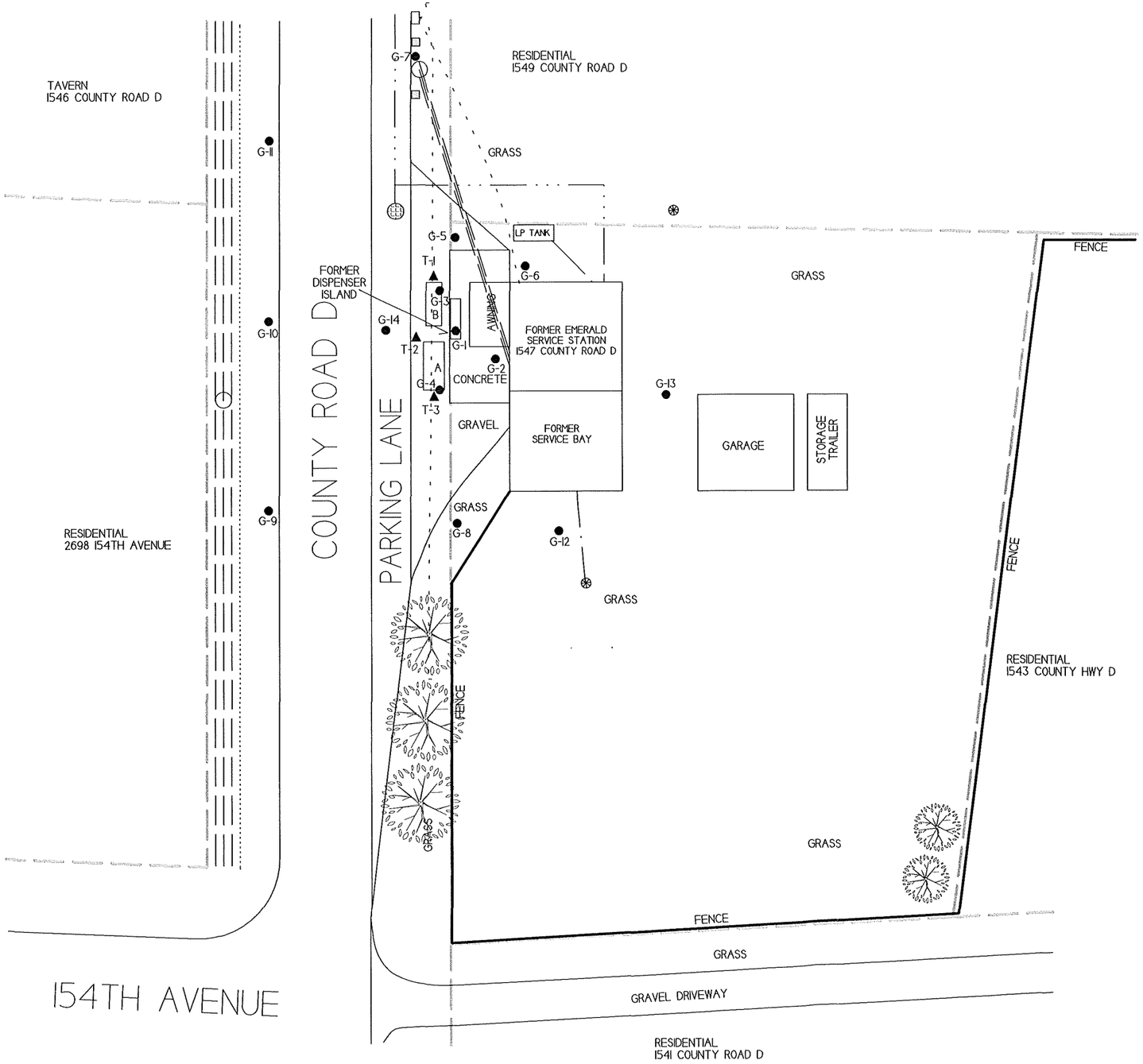

NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

◯ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A= 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B= 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.2.a PRE-REMEDIAL SOIL CONTAMINATION

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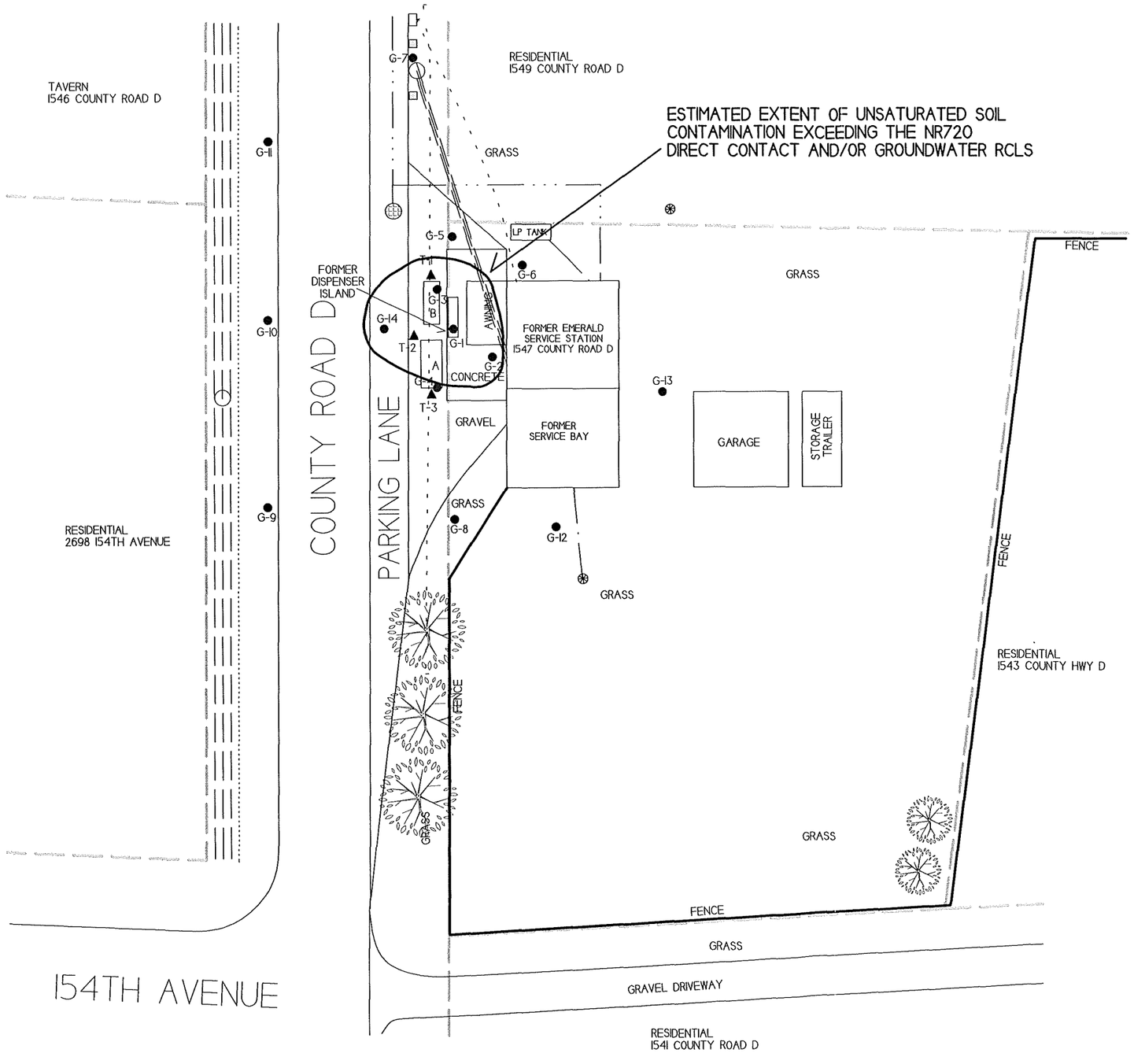

NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

❀ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.3.a GEOLOGIC CROSS -SECTION FIGURE

EMERALD SERVICE STATION

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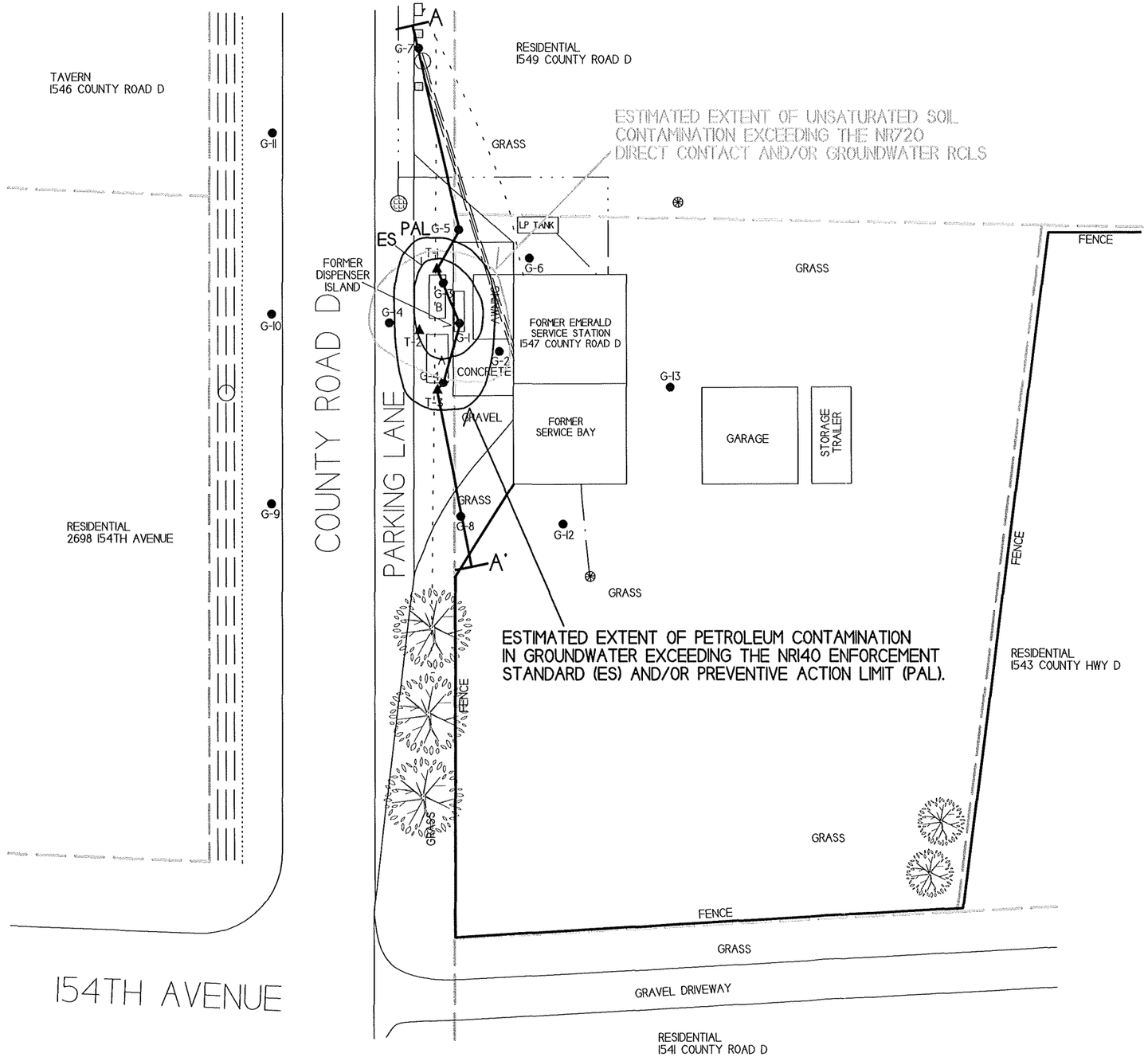
DRAWN BY: ED DATE: 6/28/12
MODIFIED BY: MM DATE: 8/13/14



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

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.3.a GEOLOGIC CROSS -SECTION FIGURE

EMERALD SERVICE STATION

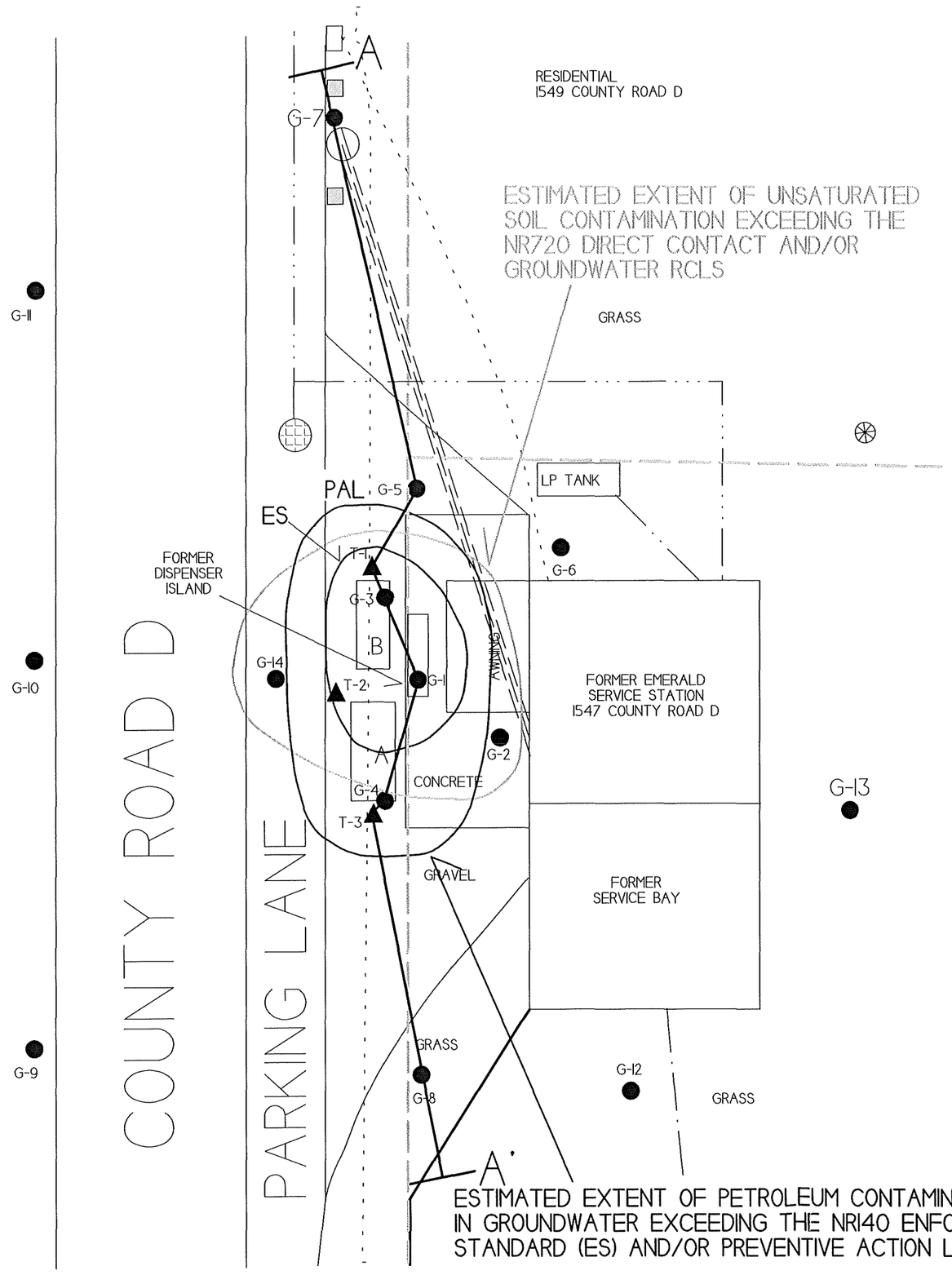
METCO
709 Gillette Street, Ste 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience

EMERALD, WISCONSIN

DRAWN BY: ED DATE: 6/28/12
MODIFIED BY: MM DATE: 8/13/14

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

SCALE:
1 INCH = 15 FEET
0 15



▲ = SITE ASSESSMENT SOIL SAMPLING LOCATION

● = GEOPROBE BORING LOCATION

⊛ = POTABLE WELL LOCATION

○ = POWER POLE

⊞ = MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

B.3.a

GEOLOGIC CROSS -SECTION FIGURE

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EMERALD, WISCONSIN

DRAWN BY: MM

DATE: 8/13/14

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

- ▲ - SITE ASSESSMENT SOIL BORING LOCATION
- ● - GEOPROBE BORING LOCATION
- △ - SITE ASSESSMENT SOIL BORING LOCATION
- ○ - GEOPROBE BORING LOCATION
- ▼ - APPROXIMATE GROUNDWATER ELEVATION

NOTES:

1) SOIL SAMPLE RESULTS ARE PRESENTED IN PARTS PER MILLION (PPM).

2) GROUNDWATER SAMPLE RESULTS ARE PRESENTED IN PARTS PER BILLION (PPB).

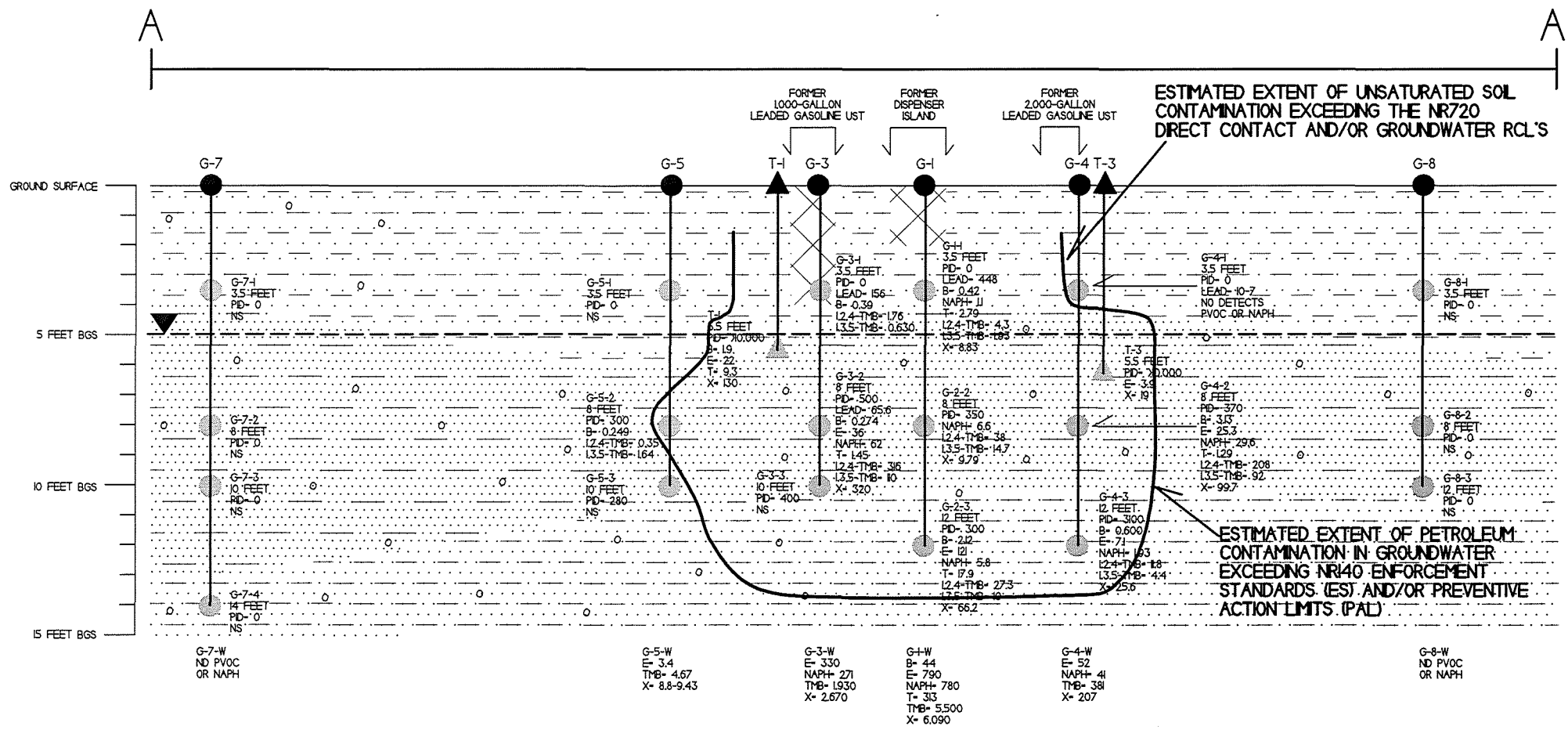
3) SOIL AND GROUNDWATER SAMPLE DATA IS BASED ON LABORATORY RESULTS FROM SAMPLES COLLECTED DURING THE FOLLOWING EVENTS:
- SITE ASSESSMENT - GOTTFRIED ENVIRONMENTAL (7/30/90)
- GEOPROBE PROJECT - METCO (4/16/13)

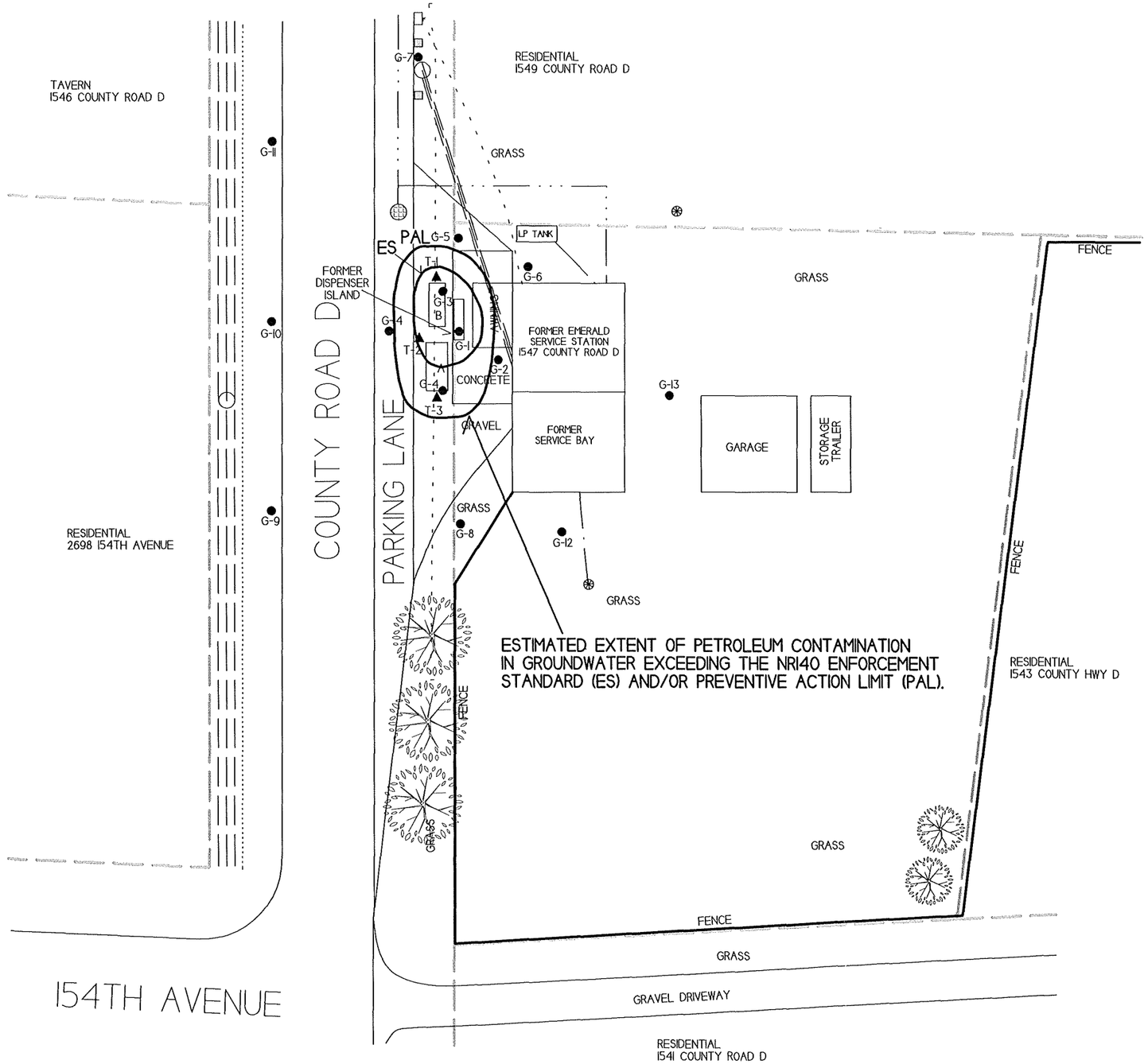
PID= PHOTO IONIZATION DETECTOR
PVOC= PETROLEUM VOLATILE ORGANIC COMPOUNDS
B= BENZENE
E= ETHYLBENZENE
NAPH= NAPHTHLENE
T= TOLUENE
TMB= TRIMETHYLBENZENE
X= XYLENE
NS= NOT SAMPLED
ND= NO DETECT

HORIZONTAL SCALE: 1 INCH = 15 FEET (0 – 15)

VERTICAL SCALE: 1 INCH = 5 FEET (0 – 5)

- TAN TO BROWN SAND AND GRAVEL TO CLAYEY SAND WITH GRAVEL AND GLASS (FILL)
- BROWN TO GRAY CLAY TO SANDY CLAY WITH SOME GRAVEL
- BROWN TO GRAY FINE TO COARSE GRAINED SAND TO CLAYEY SAND WITH GRAVEL
- TAN TO BROWN TO GRAY SANDY CLAY WITH SOME GRAVEL





B.3.b GROUNDWATER ISOCONCENTRATION

EMERALD SERVICE STATION

METCO
709 Gillette Street, Ste 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience™

EMERALD.
WISCONSIN

DRAWN BY: ED DATE: 6/28/12
MODIFIED BY: MM DATE: 8/13/14

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

SCALE:
1 INCH = 30 FEET
0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

❀ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MANHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

KEY TO FORMER USTS
A- 2,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)
B- 1,000-GALLON LEADED GASOLINE (REMOVED AUGUST 1992)

NOTE: GROUNDWATER ISOCONCENTATION IS BASED ON ANALYTICAL RESULTS FROM SAMPLES COLLECTED DURING THE MARCH 16, 2013 GEOPROBE PROJECT AND THE MARCH 25, 2014 PRIVATE WELL SAMPLING EVENT.

7.0 DATA TABLES, GRAPHS, AND STATISTICAL ANALYSIS

A.2. Pre-remedial Soil Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

Sample ID	Depth (feet)	Date	PID	Lead (ppm)	DRO (ppm)	GRO (ppm)	Benzene (ppm)	Ethyl Benzene (ppm)	MTBE (ppm)	Naph-thalene (ppm)	Toluene (ppm)	1,2,4-Trime-thylbenzene (ppm)	1,3,5-Trime-thylbenzene (ppm)	Xylene (Total) (ppm)	Other VOC's (ppm)	PVOC		
																Individual Exeedance Count	Hazard Index	Cumulative Cancer Risk
T-1	5.5	07/30/90	>10000	NS	NS	NS	**1.9**	**22**	NS	NS	**9.3**	NS	NS	**130**	NS			
T-2	6.0	07/30/90	5000	NOT SAMPLED														
T-3	6.25	07/30/90	>10000	NS	NS	NS	<1.0	**3.9**	NS	NS	<1.0	NS	NS	**19**	NS			
G-1-1	3.5	04/16/13	0	**448**	NS	45	**0.42**	0.480	<0.025	**1.1**	**2.79**	**4.3**	**1.93**	**8.83**	NS	**1**	**1.19E+00**	5.6E-07
G-1-2	8.0	04/16/13	350	NS	NS	262	<0.250	0.460	<0.250	**6.6**	<0.250	**38**	**14.7**	**9.79**	NS			
G-1-3	12.0	04/16/13	300	NS	NS	400	**2.12**	**121**	<0.250	**5.8**	**17.9**	**27.3**	**10**	**66.2**	NS			
G-2-1	3.5	04/16/13	0	**33.6**	NS	<10	**0.096**	0.103	<0.025	0.110	0.550	0.127	0.083	0.598	NS	0	8.78E-02	1.0E-07
G-2-2	8.0	04/16/13	150	NS	NS	<10	**0.067**	0.256	<0.025	0.056	0.037	0.220	0.193	0.376	NS			
G-3-1	3.5	04/16/13	0	**156**	NS	18	**0.39**	1.09	<0.025	0.410	0.680	**1.76**	**0.630**	3.08	NS	0	4.20E-01	4.9E-07
G-3-2	8.0	04/16/13	500	**65.6**	NS	3500	**0.274**	**36**	<0.300	**62**	**1.45**	**316**	**101**	**320**	SEE VOC SPREAD-SHEET			
G-3-3	10.0	04/16/13	400	NOT SAMPLED														
G-4-1	3.5	04/16/13	0	10.7	NS	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075	NS	0	2.68E-02	0
G-4-2	8.0	04/16/13	370	NS	NS	2780	**3.13**	**25.3**	<0.250	**29.6**	**1.29**	**208**	**92**	**99.7**	NS			
G-4-3	12.0	04/16/13	310	NS	NS	249	**0.600**	**7.1**	<0.025	**1.93**	0.750	**11.8**	**4.4**	**25.6**	NS			
G-5-1	3.5	04/16/13	0	NOT SAMPLED														
G-5-2	8.0	04/16/13	300	NS	NS	93	**0.249**	0.212	<0.025	0.239	0.061	**0.350**	**1.64**	0.900	NS			
G-5-3	10.0	04/16/13	280	NOT SAMPLED														
G-6-1	3.5	04/16/13	0	9.64	NS	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075	NS	0	2.41E-02	0
G-6-2	8.0	04/16/13	0	NS	NS	<10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.075	NS			
G-6-3	10.0	04/16/13	0	NOT SAMPLED														
G-7-1	3.5	04/16/13	0	NOT SAMPLED														
G-7-2	8.0	04/16/13	0	NOT SAMPLED														
G-7-3-	10.0	04/16/13	0	NOT SAMPLED														
G-7-4	14.0	04/16/13	0	NOT SAMPLED														
G-8-1	3.5	04/16/13	0	NOT SAMPLED														
G-8-2	8.0	04/16/13	0	NOT SAMPLED														
G-8-3	12.0	04/16/13	0	NOT SAMPLED														
G-9-1	3.5	04/16/13	0	NOT SAMPLED														
G-9-2	8.0	04/16/13	0	NOT SAMPLED														
G-9-3	10.0	04/16/13	0	NOT SAMPLED														
G-10-1	3.5	04/16/13	0	NOT SAMPLED														
G-10-2	8.0	04/16/13	0	NOT SAMPLED														
G-10-3	10.0	04/16/13	0	NOT SAMPLED														
G-11-1	3.5	04/16/13	0	NOT SAMPLED														
G-11-2	8.0	04/16/13	0	NOT SAMPLED														
G-11-3	10.0	04/16/13	0	NOT SAMPLED														
G-12-1	3.5	04/16/13	0	NOT SAMPLED														
G-12-2	8.0	04/16/13	0	NOT SAMPLED														
G-12-3	10.0	04/16/13	0	NOT SAMPLED														
G-13-1	3.5	04/16/13	0	NOT SAMPLED														
G-13-2	8.0	04/16/13	0	NOT SAMPLED														
G-14-1	3.5	04/16/13	0	**31.4**	NS	<10	**0.150**	0.185	<0.025	0.032	0.077	0.119	0.152	0.512	NS	0	8.22E-02	1.3E-07
G-14-2	8.0	04/16/13	400	NS	NS	460	**0.920**	**15.9**	<0.250	**6.6**	0.640	**32**	**11.8**	**68.3**	NS			
										31								
Groundwater RCL				**27**	-	-	**0.00512**	**1.57**	**0.027**	**0.659**	**1.11**	**1.38**		**3.94**	-			
Non-Industrial Direct Contact RCL				**400**	-	-	**1.49**	**7.47**	**59.4**	**5.15**	**818**	**89.8**	**182**	**258**	-		**1.00E+00**	**1.00E-05**
Soil Saturation Concentration (C-sat)*				-	-	-	**1820***	**480***	**8870***	-	**818***	**219***	**182***	**258***	-			

Bold = Groundwater RCL Exceedance
Bold & Underline = Non Industrial Direct Contact RCL Exceedance
Bold & Asteric * = C-sat Exceedance
NS = Not Sampled NM = Not Measured
(ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
PID = Photoionization Detector
PVOC's = Petroleum Volatile Organic Compounds

A.2. Pre-remedial Soil Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

Well Sampling Conducted on April 16, 2013

VOC's		Bold = Groundwater RCL	Underline & Bold = Direct Contact RCL	Asteric * & Bold =Soil Saturation (C-sat) RCL
	G-3-2			
Sample ID#	8			
Sample Depth/ft.				
Solids Percent	82.3	==	==	==
Lead/ppm	65.6	27	400	= =
GRO/ppm	3500	= =	= =	= =
Benzene/ppm	0.274	0.00512	1.49	1820
Bromobenzene/ppm	<0.130	= =	354	= =
Bromodichloromethane/ppm	<0.270	0.000326	0.39	= =
Bromoform/ppm	<0.300	0.00233	61.6	= =
tert-Butylbenzene/ppm	<0.200	= =	183	183
sec-Butylbenzene/ppm	5.2	= =	145	145
n-Butylbenzene/ppm	34	= =	108	108
Carbon Tetrachloride/ppm	<0.250	0.00388	0.85	= =
Chlorobenzene/ppm	<0.160	= =	392	= =
Chloroethane/ppm	<0.420	0.227	= =	= =
Chloroform/ppm	<0.490	0.0033	0.42	= =
Chloromethane/ppm	<1.810	0.0155	171	= =
2-Chlorotoluene/ppm	<0.160	= =	= =	= =
4-Chlorotoluene/ppm	<0.140	= =	= =	= =
1,2-Dibromo-3-chloropropane/ppm	<0.480	0.000173	0.01	= =
Dibromochloromethane/ppm	<0.140	0.032	0.93	= =
1,4-Dichlorobenzene/ppm	<0.330	0.144	3.48	= =
1,3-Dichlorobenzene/ppm	<0.300	1.15	297	297
1,2-Dichlorobenzene/ppm	<0.380	1.17	376	376
Dichlorodifluoromethane/ppm	<0.570	3.08	135	= =
1,2-Dichloroethane/ppm	<0.360	0.00284	0.61	540
1,1-Dichloroethane/ppm	<0.190	0.484	4.72	= =
1,1-Dichloroethene/ppm	<0.210	0.00502	342	= =
cis-1,2-Dichloroethene/ppm	<0.240	0.0412	156	= =
trans-1,2-Dichloroethene/ppm	<0.290	0.0588	211	= =
1,2-Dichloropropane/ppm	<0.095	0.00332	1.33	= =
2,2-Dichloropropane/ppm	<0.460	= =	527	527
1,3-Dichloropropane/ppm	<0.210	= =	1490	1490
Di-isopropyl ether/ppm	<0.110	= =	2260	2260
EDB (1,2-Dibromoethane)/ppm	<0.200	0.0000282	0.05	= =
Ethylbenzene/ppm	36	1.57	7.47	480
Hexachlorobutadiene/ppm	<0.950	= =	6.23	= =
Isopropylbenzene/ppm	9	= =	= =	= =
p-Isopropyltoluene/ppm	2.76	= =	162	162
Methylene chloride/ppm	<0.570	0.00256	60.7	= =
Methyl tert-butyl ether (MTBE)/ppm	<0.300	0.027	59.4	8870
Naphthalene/ppm	62	0.659	5.15	= =
n-Propylbenzene/ppm	44	= =	= =	= =
1,1,2,2-Tetrachloroethane/ppm	<0.120	0.000156	0.75	= =
1,1,1,2-Tetrachloroethane/ppm	<0.230	0.0533	2.59	= =
Tetrachloroethene (PCE)/ppm	<0.490	0.00454	30.7	= =
Toluene/ppm	1.45	1.11	818	818
1,2,4-Trichlorobenzene/ppm	<0.790	0.408	22.1	= =
1,2,3-Trichlorobenzene/ppm	<1.290	= =	48.9	= =
1,1,1-Trichloroethane/ppm	<0.380	0.14	= =	= =
1,1,2-Trichloroethane/ppm	<0.230	0.00324	1.48	= =
Trichloroethene (TCE)/ppm	<0.280	0.00358	0.64	= =
Trichlorofluoromethane/ppm	<0.860	= =	1120	= =
1,2,4-Trimethylbenzene/ppm	316	1.38	89.8	219
1,3,5-Trimethylbenzene/ppm	101		182	182
Vinyl Chloride/ppm	<0.210	0.000138	0.07	= =
m&p-Xylene/ppm	239	3.94	258	258
o-Xylene/ppm	81			

NS = not sampled, NM = Not Measured
(ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics
= = No Exceedences

A.1 Groundwater Analytical Table
(Geoprobe)
Emerald Service Station LUST Site BRRTS# 03-56-000393

Sample ID	Date	Lead (ppm)	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)	Other VOC's (ppb)
G-1-W	04/16/13	NS	**44**	**790**	<23	**780**	*313*	**5500**	**6090**	NS
G-2-W	04/16/13	NS	0.34	0.70	<0.23	<1.7	<0.69	<3.6	1.82-2.45	NS
G-3-W	04/16/13	NS	<12	*330*	<11.5	**271**	<34.5	**1930**	**2670**	NS
G-4-W	04/16/13	NS	<4.8	52	<4.6	*41*	<13.8	*381*	207	NS
G-5-W	04/16/13	NS	<0.24	3.4	<0.23	<1.7	<0.69	4.67	8.8-9.43	NS
G-6-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-7-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-8-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-9-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-10-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-11-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-12-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-13-W	04/16/13	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-14-W	04/16/13	NS	<0.24	26.5	<0.23	6.4	<0.69	74.5	72.9	NS
ENFORCE MENT STANDARD **ES = Bold**		15	5	700	60	100	800	480	2000	
PREVENTIVE ACTION LIMIT *PAL = Italics*		1.5	0.5	140	12	10	160	96	400	

NS = Not Sampled
(ppb) = parts per billion (ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics

A.1 Groundwater Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

2658 154th Ave. - Ernest Vernon Prinsen

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	**5**	**700**	**60**	**100**	**800**	**480**	**2000**
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

2698 154th Ave. - Marlin R & Cheryl R Voeltz

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	**5**	**700**	**60**	**100**	**800**	**480**	**2000**
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

2695 155th Ave. - Wayne P. Peterson

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	**5**	**700**	**60**	**100**	**800**	**480**	**2000**
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

1541 Cty Rd D - Bruce M & Patricia L Edquist

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	**5**	**700**	**60**	**100**	**800**	**480**	**2000**
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

1543 Cty Rd D - Bruce M & Patricia L Edquist

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	**5**	**700**	**60**	**100**	**800**	**480**	**2000**
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

1547 CTY Rd D – Emerald Service Station

Date	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)
04/16/13	<0.24	26.5	<0.23	6.4	<0.69	74.5	72.9
03/25/14	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94
ES = Bold	**5**	**700**	**60**	**100**	**800**	**480**	**2000**
PAL = Italics	*0.5*	*140*	*12*	*10*	*160*	*96*	*400*

(ppb) = parts per billion

A.1 Groundwater Analytical Table
Emerald Service Station LUST Site BRRTS# 03-56-000393

VOC's

Well Name	1547 CTY RD D	2685 154TH AVE.	2698 154TH AVE.	2695 155TH AVE.	1541 CTY RD D	1543 CTY RD D	1547 CTY RD D	ENFORCE MENT STANDARD = ES – Bold	*PREVENTIVE ACTION LIMIT = PAL - Italics*
Date	04/16/13	03/25/14	03/25/14	03/25/14	03/25/14	03/25/14	03/25/14		
Benzene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	5	*0.5*
Bromobenzene/ppb	<0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	< 0.33	==	==
Bromodichloromethane/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	==	==
Bromoform/ppb	<0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	==	==
Bromomethane/ppb	<0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	< 0.98	==	==
Carbon Tetrachloride/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	==	==
Chlorobenzene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	==	==
Chloroethane/ppb	<0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	==	==
Chloroform/ppb	<0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	==	==
Chloromethane/ppb	<0.81	< 0.81	< 0.81	< 0.81	< 0.81	< 0.81	< 0.81	==	==
2-Chlorotoluene/ppb	<0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	==	==
4-Chlorotoluene/ppb	<0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	< 0.29	==	==
Dibromochloromethane/ppb	<0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	==	==
Dibromomethane/ppb	<0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	==	==
1,4-Dichlorobenzene/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	==	==
1,3-Dichlorobenzene/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
1,2-Dichlorobenzene/ppb	<0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	< 0.28	==	==
Dichlorodifluoromethane/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	==	==
1,2-Dichloroethane/ppb	<0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	< 0.41	5	*0.5*
1,1-Dichloroethane/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
1,1-Dichloroethene/ppb	<0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	==	==
cis-1,2-Dichloroethene/ppb	<0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	==	==
trans-1,2-Dichloroethene/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	==	==
1,2-Dichloropropane/ppb	<0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	==	==
2,2-Dichloropropane/ppb	<0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	< 0.45	==	==
1,3-Dichloropropane/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	==	==
trans-1,3-Dichloropropene/ppb	<0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	==	==
cis-1,3-Dichloropropene/ppb	<0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	==	==
1,1-Dichloropropene/ppb	<0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	==	==
Ethylbenzene/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	< 0.27	700	*140*
Hexachlorobutadiene/ppb	<0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	==	==
Isopropylbenzene/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
p-Isopropyltoluene/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	==	==
Methylene chloride/ppb	<0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	==	==
Methyl tert-butyl ether (MTBE)/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.35	< 0.26	< 0.26	60	*12*
Naphthalene/ppb	<0.49	< 0.49	< 0.49	< 0.49	< 0.26	< 0.49	< 0.49	100	*10*
Styrene/ppb	<0.23	< 0.23	< 0.23	< 0.23	< 0.49	< 0.23	< 0.23	==	==
1,1,2,2-Tetrachloroethane/ppb	<0.45	< 0.45	< 0.45	< 0.45	< 0.23	< 0.45	< 0.45	==	==
1,1,1,2-Tetrachloroethane/ppb	<0.29	< 0.29	< 0.29	< 0.29	< 0.45	< 0.29	< 0.29	==	==
Tetrachloroethene(PCE)/ppb	<0.27	< 0.27	< 0.27	< 0.27	< 0.29	< 0.27	< 0.27	5	*0.5*
Toluene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.27	< 0.24	< 0.24	800	*160*
1,2,4-Trichlorobenzene/ppb	<0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	==	==
1,1,1-Trichloroethane/ppb	<0.33	< 0.33	< 0.33	< 0.33	< 0.24	< 0.33	< 0.33	==	==
1,1,2-Trichloroethane/ppb	<0.34	< 0.34	< 0.34	< 0.34	< 0.33	< 0.34	< 0.34	==	==
Trichloroethene (TCE)/ppb	<0.3	< 0.3	< 0.3	< 0.3	< 0.34	< 0.3	< 0.3	5	*0.5*
Trichlorofluoromethane/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.3	< 0.26	< 0.26	==	==
1,2,3-Trichloropropane/ppb	<0.91	< 0.91	< 0.91	< 0.91	< 0.26	< 0.91	< 0.91	==	==
Trichlorotrifluoroethane/ppb	<0.41	< 0.41	< 0.41	< 0.41	< 0.91	< 0.41	< 0.41		
1,2,4-Trimethylbenzene/ppb	<0.31	< 0.31	< 0.31	< 0.31	< 0.41	< 0.31	< 0.31		
1,3,5-Trimethylbenzene/ppb	<0.26	< 0.26	< 0.26	< 0.26	< 0.31	< 0.26	< 0.26	Total TMB's 480	*Total TMB's 96*
Vinyl Chloride/ppb	<0.18	< 0.18	< 0.18	< 0.18	< 0.26	< 0.18	< 0.18	==	==
m&p-Xylene/ppb	<0.69	< 0.69	< 0.69	< 0.69	< 0.18	< 0.69	< 0.69		
o-Xylene/ppb	<0.25	< 0.25	< 0.25	< 0.25	< 0.69	< 0.25	< 0.25	Total Xylenes 2000	*Total Xylenes 400*

Note: Bold type indicates an ES exceedance, *italics* indicates a PAL exceedance. NS = not sampled, NM = Not Measured
Q = Analyte detected above laboratory method detection limit but below practical quantitation limit.
= = No Exceedences

8.0 SITE PHOTOGRAPHS

Photo #1: Area of former dispenser island and Geoprobe boring G-1. - Looking southeast.

Photo #2: Area of former dispenser island and Geoprobe boring G-1. – Looking north.

APPENDIX A/ METHODS OF INVESTIGATION

Geoprobe Project

Geoprobe sampling was completed by Geiss Soil & Samples, LLC of Merrill, Wisconsin, under the supervision of METCO personnel. The Geoprobe consists of a truck or track-mounted, hydraulically driven unit that advances interconnected, 1-inch diameter, 4 foot long, and stainless steel rods into the subsurface.

Field observations such as soil characteristics, petroleum odors, and petroleum staining associated with all the collected samples were continuously noted throughout sampling. All Geoprobe holes were properly abandoned to ground level using bentonite clay.

The purpose of the Geoprobe Project was to cost effectively determine, if the released contaminants have impacted the soil and groundwater, and determine the general extent of contamination along those mediums. This collected information would then be used to guide the Drilling Project, if required.

Geoprobe Soil Sampling

The procedure consisted of advancing an assembled stainless steel sampler to the top of the interval to be sampled. A stop-pin was then removed, and the sampler driven until filled. The rods were retracted from the hole and the sample recovered.

Geoprobe Groundwater Sampling

This procedure consisted of advancing a stainless steel, mill slotted well point into the watertable interface. Disposable, flexible, ¼ inch diameter polyethylene tubing was then introduced through the steel rods and down to the watertable interface. A hand-held pump was used to slowly draw an undisturbed water sample into the polyethylene tube, which was then removed from the steel rods and the water sample immediately placed into sampling containers.

Field Screening

Selected soil samples were scanned with a Model DL102 HNU Photo-ionization Meter equipped with a 10.6 eV lamp. Metered calibrations were done at the beginning of each workday using an isobutylene standard. A quart sized Ziploc bag was filled, by gloved hand, one-third full with the sample. The Ziploc bags were sealed and shaken vigorously for 30 seconds. Headspace development was established by allowing the sample to rest for at least 15 minutes. If ambient temperatures are below 70 degrees Fahrenheit, headspace development takes place in a heated environment, which allows the sample enough time to establish satisfactory headspace. To take readings, the HNU probe was inserted through the Ziploc seal and the highest meter response

recorded.

Throughout the field projects the HNU Meter did not encounter any vast temperature or humidity changes, malfunctions, repairs, or any other obvious interferences that would affect its results.

Potable Well Sampling

The potable well samples for laboratory analysis were collected from a faucets prior to any water softeners or filters if possible. The wells were allowed to run for approximately 10 to 30 minutes before the samples were collected.

Field observations such as color, turbidity, petroleum odors, and petroleum sheens associated with the collected samples were continuously noted throughout sampling.

Sample Preparation

The volume of sample, size of container, and type of sample preservation was dependent on the specific parameter for which the sample was to be analyzed. Parameter specific information is presented in the LUST Sample Guidelines located in Appendix D.

Field Sampling and Transportation Quality Control

All samples were collected in a manner as to maintain their quality and to eliminate any possible cross contamination. METCO did not deviate from any WDNR or laboratory recommended procedures for sample collection, preservation, or transportation on this project.

Equipment advanced into the subsurface was cleaned between sampling locations. Cleaning consisted of washing with a biodegradable Alconox solution and rinsing with potable water. Disposable equipment was not cleaned, but immediately disposed of after use.

All samples were constantly kept on ice in a cooler and hand delivered to the laboratory.

Laboratory Quality Control

See Appendix B for the results of any field blanks, trip blanks, temperature blanks, lab spikes, split samples, replicate spikes, and duplicates.

Investigative Wastes

No investigative waste was generated as part of this site investigation.

APPENDIX B/ ANALYTICAL METHODS & LABORATORY DATA REPORTS

Synergy Environmental Lab,

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

KATHERINE POTTER
KATHERINE POTTER
1547 COUNTY ROAD D
GLENWOOD CITY, WI 54013

Report Date *01-May-13*

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044A
Sample ID MEOH BLANK
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/24/2013	CJR	1
Benzene	< 25	ug/kg	7.9	25	1	GRO95/8021		4/24/2013	CJR	1
Ethylbenzene	< 25	ug/kg	7.7	25	1	GRO95/8021		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/24/2013	CJR	1
Naphthalene	< 25	ug/kg	22	70	1	GRO95/8021		4/24/2013	CJR	1
Toluene	< 25	ug/kg	8.4	27	1	GRO95/8021		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	10	33	1	GRO95/8021		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	9.3	30	1	GRO95/8021		4/24/2013	CJR	1
m&p-Xylene	< 50	ug/kg	16	50	1	GRO95/8021		4/24/2013	CJR	1
o-Xylene	< 25	ug/kg	10	32	1	GRO95/8021		4/24/2013	CJR	1

Lab Code 5025044B
Sample ID G-1-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	74.5	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	448	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	45	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	420	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	480	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	1100	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044B
Sample ID G-1-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Toluene	2790	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	4300	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	1930	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	6300	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	2530	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044C
Sample ID G-1-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	88.1	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	262	mg/kg	23	73	10	GRO95/8021		4/25/2013	CJR	1
Benzene	< 250	ug/kg	79	250	10	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	460	ug/kg	77	250	10	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 250	ug/kg	81	260	10	GRO95/8021		4/25/2013	CJR	1
Naphthalene	6600	ug/kg	220	700	10	GRO95/8021		4/25/2013	CJR	1
Toluene	< 250	ug/kg	84	270	10	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	38000	ug/kg	100	330	10	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	14700	ug/kg	93	300	10	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	7500	ug/kg	160	500	10	GRO95/8021		4/25/2013	CJR	1
o-Xylene	2290	ug/kg	100	320	10	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044D
Sample ID G-1-3
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	89.5	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	400	mg/kg	23	73	10	GRO95/8021		4/25/2013	CJR	1
Benzene	2120	ug/kg	79	250	10	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	12100	ug/kg	77	250	10	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 250	ug/kg	81	260	10	GRO95/8021		4/25/2013	CJR	1
Naphthalene	5800	ug/kg	220	700	10	GRO95/8021		4/25/2013	CJR	1
Toluene	17900	ug/kg	84	270	10	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	27300	ug/kg	100	330	10	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	10000	ug/kg	93	300	10	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	49000	ug/kg	160	500	10	GRO95/8021		4/25/2013	CJR	1
o-Xylene	17200	ug/kg	100	320	10	GRO95/8021		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044E
Sample ID G-2-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	74.4	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	33.6	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	96	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	103	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	110	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	550	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	127	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	83	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	400	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	198	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044F
Sample ID G-2-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	90.3	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	67	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	256	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	56 "J"	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	37	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	220	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	193	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	311	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	65	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044G
Sample ID G-3-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	83.2	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	156	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044G
Sample ID G-3-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
GRO/PVOC + Naphthalene										
Gasoline Range Organics	18	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	390	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	1090	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	410	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	680	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	1760	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	630	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	2460	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	620	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044H
Sample ID G-3-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	82.3	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	65.6	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										
General										
Gasoline Range Organics	3500	mg/kg	115	365	50	GRO95/8021		5/1/2013	CJR	1
VOC's										
Benzene	274 "J"	ug/kg	92	290	10	8260B		4/30/2013	CJR	1
Bromobenzene	< 130	ug/kg	130	400	10	8260B		4/30/2013	CJR	1
Bromodichloromethane	< 270	ug/kg	270	850	10	8260B		4/30/2013	CJR	1
Bromoform	< 300	ug/kg	300	950	10	8260B		4/30/2013	CJR	1
tert-Butylbenzene	< 200	ug/kg	200	640	10	8260B		4/30/2013	CJR	1
sec-Butylbenzene	5200	ug/kg	410	1320	10	8260B		4/30/2013	CJR	1
n-Butylbenzene	34000	ug/kg	260	820	10	8260B		4/30/2013	CJR	1
Carbon Tetrachloride	< 250	ug/kg	250	790	10	8260B		4/30/2013	CJR	1
Chlorobenzene	< 160	ug/kg	160	520	10	8260B		4/30/2013	CJR	1
Chloroethane	< 420	ug/kg	420	1330	10	8260B		4/30/2013	CJR	1
Chloroform	< 490	ug/kg	490	1570	10	8260B		4/30/2013	CJR	1
Chloromethane	< 1810	ug/kg	1810	5770	10	8260B		4/30/2013	CJR	1
2-Chlorotoluene	< 160	ug/kg	160	520	10	8260B		4/30/2013	CJR	1
4-Chlorotoluene	< 140	ug/kg	140	430	10	8260B		4/30/2013	CJR	1
1,2-Dibromo-3-chloropropane	< 480	ug/kg	480	1540	10	8260B		4/30/2013	CJR	1
Dibromochloromethane	< 140	ug/kg	140	450	10	8260B		4/30/2013	CJR	1
1,4-Dichlorobenzene	< 330	ug/kg	330	1030	10	8260B		4/30/2013	CJR	1
1,3-Dichlorobenzene	< 300	ug/kg	300	950	10	8260B		4/30/2013	CJR	1
1,2-Dichlorobenzene	< 380	ug/kg	380	1220	10	8260B		4/30/2013	CJR	1
Dichlorodifluoromethane	< 570	ug/kg	570	1820	10	8260B		4/30/2013	CJR	1
1,2-Dichloroethane	< 360	ug/kg	360	1140	10	8260B		4/30/2013	CJR	1
1,1-Dichloroethane	< 190	ug/kg	190	600	10	8260B		4/30/2013	CJR	1
1,1-Dichloroethene	< 210	ug/kg	210	660	10	8260B		4/30/2013	CJR	1
cis-1,2-Dichloroethene	< 240	ug/kg	240	770	10	8260B		4/30/2013	CJR	1
trans-1,2-Dichloroethene	< 290	ug/kg	290	930	10	8260B		4/30/2013	CJR	1
1,2-Dichloropropane	< 95	ug/kg	95	300	10	8260B		4/30/2013	CJR	1
2,2-Dichloropropane	< 460	ug/kg	460	1480	10	8260B		4/30/2013	CJR	1
1,3-Dichloropropane	< 210	ug/kg	210	680	10	8260B		4/30/2013	CJR	1
Di-isopropyl ether	< 110	ug/kg	110	340	10	8260B		4/30/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044H
Sample ID G-3-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
EDB (1,2-Dibromoethane)	< 200	ug/kg	200	640	10	8260B		4/30/2013	CJR	1
Ethylbenzene	36000	ug/kg	100	330	10	8260B		4/30/2013	CJR	1
Hexachlorobutadiene	< 950	ug/kg	950	3040	10	8260B		4/30/2013	CJR	1
Isopropylbenzene	9000	ug/kg	250	800	10	8260B		4/30/2013	CJR	1
p-Isopropyltoluene	2760	ug/kg	310	980	10	8260B		4/30/2013	CJR	1
Methylene chloride	< 570	ug/kg	570	1820	10	8260B		4/30/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 300	ug/kg	300	960	10	8260B		4/30/2013	CJR	1
Naphthalene	62000	ug/kg	1140	3630	10	8260B		4/30/2013	CJR	1
n-Propylbenzene	44000	ug/kg	240	750	10	8260B		4/30/2013	CJR	1
1,1,2,2-Tetrachloroethane	< 120	ug/kg	120	380	10	8260B		4/30/2013	CJR	1
1,1,1,2-Tetrachloroethane	< 230	ug/kg	230	740	10	8260B		4/30/2013	CJR	1
Tetrachloroethene	< 490	ug/kg	490	1570	10	8260B		4/30/2013	CJR	1
Toluene	1450	ug/kg	200	650	10	8260B		4/30/2013	CJR	1
1,2,4-Trichlorobenzene	< 790	ug/kg	790	2510	10	8260B		4/30/2013	CJR	1
1,2,3-Trichlorobenzene	< 1290	ug/kg	1290	4110	10	8260B		4/30/2013	CJR	1
1,1,1-Trichloroethane	< 380	ug/kg	380	1200	10	8260B		4/30/2013	CJR	1
1,1,2-Trichloroethane	< 230	ug/kg	230	740	10	8260B		4/30/2013	CJR	1
Trichloroethene (TCE)	< 280	ug/kg	280	880	10	8260B		4/30/2013	CJR	1
Trichlorofluoromethane	< 860	ug/kg	860	2730	10	8260B		4/30/2013	CJR	1
1,2,4-Trimethylbenzene	316000	ug/kg	260	810	10	8260B		4/30/2013	CJR	1
1,3,5-Trimethylbenzene	101000	ug/kg	260	840	10	8260B		4/30/2013	CJR	1
Vinyl Chloride	< 210	ug/kg	210	660	10	8260B		4/30/2013	CJR	1
m&p-Xylene	239000	ug/kg	680	2160	10	8260B		4/30/2013	CJR	1
o-Xylene	81000	ug/kg	310	980	10	8260B		4/30/2013	CJR	1
SUR - 1,2-Dichloroethane-d4	103	Rec %			10	8260B		4/30/2013	CJR	1
SUR - 4-Bromofluorobenzene	102	Rec %			10	8260B		4/30/2013	CJR	1
SUR - Dibromofluoromethane	97	Rec %			10	8260B		4/30/2013	CJR	1
SUR - Toluene-d8	92	Rec %			10	8260B		4/30/2013	CJR	1

Lab Code 5025044I
Sample ID G-4-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	78.6	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	10.7	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	< 25	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	< 25	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	< 25	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	< 25	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	< 50	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	< 25	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044J
Sample ID G-4-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	85.2	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	2780	mg/kg	23	73	10	GRO95/8021		4/26/2013	CJR	1
Benzene	3130	ug/kg	79	250	10	GRO95/8021		4/26/2013	CJR	1
Ethylbenzene	25300	ug/kg	77	250	10	GRO95/8021		4/26/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 250	ug/kg	81	260	10	GRO95/8021		4/26/2013	CJR	1
Naphthalene	29600	ug/kg	220	700	10	GRO95/8021		4/26/2013	CJR	1
Toluene	1290	ug/kg	84	270	10	GRO95/8021		4/26/2013	CJR	1
1,2,4-Trimethylbenzene	208000	ug/kg	100	330	10	GRO95/8021		4/26/2013	CJR	1
1,3,5-Trimethylbenzene	82000	ug/kg	93	300	10	GRO95/8021		4/26/2013	CJR	1
m&p-Xylene	84000	ug/kg	160	500	10	GRO95/8021		4/26/2013	CJR	1
o-Xylene	15700	ug/kg	100	320	10	GRO95/8021		4/26/2013	CJR	1

Lab Code 5025044K
Sample ID G-4-3
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	81.9	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	249	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	600	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	7100	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	1930	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	750	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	11800	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	4400	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	20700	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	4900	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044L
Sample ID G-5-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	87.6	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	93	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	249	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	212	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	239	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	61	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044L
Sample ID G-5-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
1,2,4-Trimethylbenzene	350	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	1640	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	540	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	360	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044M
Sample ID G-6-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	81.4	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	9.64	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/30/2013	CJR	1
Benzene	< 25	ug/kg	7.9	25	1	GRO95/8021		4/30/2013	CJR	1
Ethylbenzene	< 25	ug/kg	7.7	25	1	GRO95/8021		4/30/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/30/2013	CJR	1
Naphthalene	< 25	ug/kg	22	70	1	GRO95/8021		4/30/2013	CJR	1
Toluene	< 25	ug/kg	8.4	27	1	GRO95/8021		4/30/2013	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	10	33	1	GRO95/8021		4/30/2013	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	9.3	30	1	GRO95/8021		4/30/2013	CJR	1
m&p-Xylene	< 50	ug/kg	16	50	1	GRO95/8021		4/30/2013	CJR	1
o-Xylene	< 25	ug/kg	10	32	1	GRO95/8021		4/30/2013	CJR	1

Lab Code 5025044N
Sample ID G-6-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	86.4	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	< 25	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	< 25	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	< 25	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	< 25	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	< 25	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	< 25	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	< 50	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	< 25	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044O
Sample ID G-14-1
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	87.5	%			1	5021		4/20/2013	MDK	1
Inorganic										
Metals										
Lead, Total	31.4	mg/kg	0.6	1.92	2	SW846 7421		4/23/2013	CWT	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	< 10	mg/kg	2.3	7.3	1	GRO95/8021		4/25/2013	CJR	1
Benzene	150	ug/kg	7.9	25	1	GRO95/8021		4/25/2013	CJR	1
Ethylbenzene	185	ug/kg	7.7	25	1	GRO95/8021		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 25	ug/kg	8.1	26	1	GRO95/8021		4/25/2013	CJR	1
Naphthalene	32 "J"	ug/kg	22	70	1	GRO95/8021		4/25/2013	CJR	1
Toluene	77	ug/kg	8.4	27	1	GRO95/8021		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	119	ug/kg	10	33	1	GRO95/8021		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	152	ug/kg	9.3	30	1	GRO95/8021		4/25/2013	CJR	1
m&p-Xylene	370	ug/kg	16	50	1	GRO95/8021		4/25/2013	CJR	1
o-Xylene	142	ug/kg	10	32	1	GRO95/8021		4/25/2013	CJR	1

Lab Code 5025044P
Sample ID G-14-2
Sample Matrix Soil
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	91.2	%			1	5021		4/20/2013	MDK	1
Organic										
GRO/PVOC + Naphthalene										
Gasoline Range Organics	460	mg/kg	23	73	10	GRO95/8021		4/26/2013	CJR	1
Benzene	920	ug/kg	79	250	10	GRO95/8021		4/26/2013	CJR	1
Ethylbenzene	15900	ug/kg	77	250	10	GRO95/8021		4/26/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 250	ug/kg	81	260	10	GRO95/8021		4/26/2013	CJR	1
Naphthalene	6600	ug/kg	220	700	10	GRO95/8021		4/26/2013	CJR	1
Toluene	640	ug/kg	84	270	10	GRO95/8021		4/26/2013	CJR	1
1,2,4-Trimethylbenzene	32000	ug/kg	100	330	10	GRO95/8021		4/26/2013	CJR	1
1,3,5-Trimethylbenzene	11800	ug/kg	93	300	10	GRO95/8021		4/26/2013	CJR	1
m&p-Xylene	54000	ug/kg	160	500	10	GRO95/8021		4/26/2013	CJR	1
o-Xylene	14300	ug/kg	100	320	10	GRO95/8021		4/26/2013	CJR	1

Lab Code 5025044Q
Sample ID TB
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044Q
Sample ID TB
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 5025044R
Sample ID G-1-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	44 "J"	ug/l	24	77	100	8260B		4/25/2013	CJR	1
Ethylbenzene	790	ug/l	55	170	100	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 23	ug/l	23	74	100	8260B		4/25/2013	CJR	1
Naphthalene	780	ug/l	170	550	100	8260B		4/25/2013	CJR	1
Toluene	313	ug/l	69	220	100	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	4300	ug/l	220	690	100	8260B		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	1200	ug/l	140	450	100	8260B		4/25/2013	CJR	1
m&p-Xylene	4500	ug/l	69	220	100	8260B		4/25/2013	CJR	1
o-Xylene	1590	ug/l	63	200	100	8260B		4/25/2013	CJR	1

Lab Code 5025044S
Sample ID G-2-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	0.34 "J"	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	0.70"J"	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	1.82 "J"	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 5025044T
Sample ID G-3-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 12	ug/l	12	38.5	50	8260B		4/25/2013	CJR	1
Ethylbenzene	330	ug/l	27.5	85	50	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		4/25/2013	CJR	1
Naphthalene	271 "J"	ug/l	85	275	50	8260B		4/25/2013	CJR	1
Toluene	< 34.5	ug/l	34.5	110	50	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	1530	ug/l	110	345	50	8260B		4/25/2013	CJR	3
1,3,5-Trimethylbenzene	400	ug/l	70	225	50	8260B		4/25/2013	CJR	1
m&p-Xylene	2000	ug/l	34.5	110	50	8260B		4/25/2013	CJR	1
o-Xylene	670	ug/l	31.5	100	50	8260B		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044U
Sample ID G-4-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 4.8	ug/l	4.8	15.4	20	8260B		4/25/2013	CJR	1
Ethylbenzene	52	ug/l	11	34	20	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 4.6	ug/l	4.6	14.8	20	8260B		4/25/2013	CJR	1
Naphthalene	41 "J"	ug/l	34	110	20	8260B		4/25/2013	CJR	1
Toluene	< 13.8	ug/l	13.8	44	20	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	289	ug/l	44	138	20	8260B		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	92	ug/l	28	90	20	8260B		4/25/2013	CJR	1
m&p-Xylene	168	ug/l	13.8	44	20	8260B		4/25/2013	CJR	1
o-Xylene	39 "J"	ug/l	12.6	40	20	8260B		4/25/2013	CJR	1

Lab Code 5025044V
Sample ID G-5-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	3.4	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	2.8 "J"	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	1.87 "J"	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	8.8	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 5025044W
Sample ID G-6-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 5025044X
Sample ID G-7-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/25/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 5025044X
Sample ID G-7-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/25/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/25/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/25/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/25/2013	CJR	1

Lab Code 5025044Y
Sample ID G-8-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 5025044Z
Sample ID G-9-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 525044AA
Sample ID G-10-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 525044AA
Sample ID G-10-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 525044BB
Sample ID G-11-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/25/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/25/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/25/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/25/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/25/2013	CJR	1

Lab Code 525044CC
Sample ID G-12-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/25/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/25/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/25/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/25/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/25/2013	CJR	1

Lab Code 525044DD
Sample ID G-13-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/24/2013	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		4/24/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/24/2013	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		4/24/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		4/24/2013	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		4/24/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 525044DD
Sample ID G-13-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		4/24/2013	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		4/24/2013	CJR	1

Lab Code 525044EE
Sample ID G-14-W
Sample Matrix Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
PVOC + Naphthalene										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		4/25/2013	CJR	1
Ethylbenzene	26.5	ug/l	0.55	1.7	1	8260B		4/25/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		4/25/2013	CJR	1
Naphthalene	6.4	ug/l	1.7	5.5	1	8260B		4/25/2013	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
1,2,4-Trimethylbenzene	56	ug/l	2.2	6.9	1	8260B		4/25/2013	CJR	1
1,3,5-Trimethylbenzene	18.5	ug/l	1.4	4.5	1	8260B		4/25/2013	CJR	1
m&p-Xylene	60	ug/l	0.69	2.2	1	8260B		4/25/2013	CJR	1
o-Xylene	12.9	ug/l	0.63	2	1	8260B		4/25/2013	CJR	1

Lab Code 525044FF
Sample ID POTABLE WELL
Sample Matrix Drinking Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		4/19/2013	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		4/19/2013	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		4/19/2013	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		4/19/2013	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		4/19/2013	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		4/19/2013	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		4/19/2013	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		4/19/2013	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		4/19/2013	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		4/19/2013	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		4/19/2013	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		4/19/2013	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		4/19/2013	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		4/19/2013	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		4/19/2013	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		4/19/2013	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		4/19/2013	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		4/19/2013	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		4/19/2013	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		4/19/2013	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		4/19/2013	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		4/19/2013	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		4/19/2013	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		4/19/2013	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		4/19/2013	CJR	1
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		4/19/2013	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		4/19/2013	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		4/19/2013	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		4/19/2013	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E25044
Project #

Lab Code 525044FF
Sample ID POTABLE WELL
Sample Matrix Drinking Water
Sample Date 4/16/2013

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		4/19/2013	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		4/19/2013	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		4/19/2013	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		4/19/2013	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		4/19/2013	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		4/19/2013	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		4/19/2013	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		4/19/2013	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		4/19/2013	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		4/19/2013	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		4/19/2013	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		4/19/2013	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		4/19/2013	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		4/19/2013	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		4/19/2013	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		4/19/2013	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		4/19/2013	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		4/19/2013	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		4/19/2013	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		4/19/2013	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		4/19/2013	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		4/19/2013	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		4/19/2013	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		4/19/2013	CJR	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
3	The matrix spike not within established limits.

CWT denotes sub contract lab - Certification #445126660

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature Michael Ricker

CHAIN OF CUSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 1904
Page 1 of 4

Lab I.D. #	
Account No. :	Quote No.:
Project #:	
Sampler: (signature)	

Sample Handling Request
___ Rush Analysis Date Required ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Project (Name / Location): Emerald Service Station

Reports To: Katherine Potter	Invoice To: Katherine Potter c/o Jason Powell
Company	Company METCO
Address 1547 County Rd D	Address 709 Gillette St, Ste 3
City State Zip Glenwood City, WI 54013	City State Zip La Crosse, WI 54603
Phone (715) 926-0550	Phone (608) 781-8579
FAX	FAX 8593

Analysis Requested | **Other Analysis**

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	IRON	LEAD	NITRATE / NITRITE	PAH (EPA 8270)	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	VOC DW (EPA 524.2)	VOC (EPA 8260)	8 RCRA METALS	PID/ FID
501504LA	Meth Blank	4/8/13					1		MEOH		X						X					
B	G-1-1		8:45		X		3	S	/None		X		X				X					
C	G-1-2		8:50				2				X						X					
D	G-1-3		8:55				2				X						X					
E	G-2-1		9:20				3		/None		X		X				X					
F	G-2-2		9:25				2				X						X					
G	G-3-1		9:45				3		/None		X		X				X					
H	G-3-2		9:50				3		/None		X		X							X		
I	G-4-1		10:10				3		/None		X		X				X					
J	G-4-2		10:15				2				X						X					

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Lab to send copy of report to METCO
U-C Rates Apply
Agent Status

~~Sample Integrity - To be completed by receiving lab.~~
Method of Shipment: Dunham
Temp. of Temp. Blank: ___ °C On Ice: ✓
Cooler seal intact upon receipt: ✓ Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	1:45PM	4/17/13			

Received in Laboratory By: [signature] Time: 8:00 Date: 4-18-13

CHAIN OF CUSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 905

Page 2 of 4

Sample Handling Request
___ Rush Analysis Date Required ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #

Account No. : | Quote No.:

Project #:

Sampler: (signature) E - Dec

Project (Name / Location): Emerald Service Station

Reports To: See Page 1 | ~~Invoice To:~~

Company	Company
Address	Address
City State Zip	City State Zip
Phone	Phone
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	IRON	LEAD	NITRATE / NITRITE	PAH (EPA 8270)	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	VOC DW (EPA 524.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
So2So4 K	G-4-3	4/16/13	10:20		X		2	S	MEOH		X						X					
L	G-5-2		11:00				2				X						X					
M	G-6-1		11:25				3		/None		X		X				X					
N	G-6-2		11:30				2				X						X					
O	G-14-1		4:10				3		/None		X		X				X					
P	G-14-2		4:20				2				X						X					
Q	Trip Blank						1		HCl								X					
R	G-1-W		9:10			N	3	GW									X					
S	G-2-W		9:35				3										X					
T	G-3-W		10:00				3										X					

Analysis Requested | Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

~~Sample Integrity - To be completed by receiving lab.~~
Method of Shipment: Driven
Temp. of Temp. Blank. ___ °C On Ice: ✓
Cooler seal intact upon receipt: ✓ Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
E Dec	1:45PM	4/17/13			

Received in Laboratory By: [signature] Time: 9:00 Date: 4-18-13

CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 3906
Page 3 of 4

Sample Handling Request
___ Rush Analysis Date Required ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #
Account No. : **Quote No.:**
Project #:
Sampler: (signature)
Project (Name / Location): Emerald Service Station
Reports To: See Page 1 — ~~Invoice To:~~

Company	Company
Address	Address
City State Zip	City State Zip
Phone	Phone
FAX	FAX

Analysis Requested | **Other Analysis**

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	IRON	LEAD	NITRATE / NITRITE	PAH (EPA 8270)	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	VOC DW (EPA 524.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
52504U	G-4-W	4/16/13	10:30		X	N	3	GW	HCl								X					
V	G-5-W		11:10														X					
W	G-6-W		11:45														X					
X	G-7-W		2:20														X					
Y	G-8-W		12:50														X					
Z	G-9-W		1:30														X					
52504AA	G-10-W		1:55														X					
BB	G-11-W		2:15														X					
CC	G-12-W		3:30														X					
DD	G-13-W		3:50														X					

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

~~Sample Integrity - To be completed by receiving lab~~
Method of Shipment: Dunham
Temp. of Temp. Blank: ___ °C On Ice: ✓
Cooler seal intact upon receipt: ___ Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	1:45pm	4/17/13			

Received in Laboratory By: [signature] Time: 8:10 Date: 4-19-13

CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 3945
Page 4 of 4

Sample Handling Request
__ Rush Analysis Date Required
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #
Account No. : **Quote No.:**
Project #:
Sampler: (signature) E Dow

Project (Name / Location): Emerald Service Station

Reports To: See Page 1	Invoice To: →
Company	Company
Address	Address
City State Zip	City State Zip
Phone	Phone
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	IRON	LEAD	NITRATE / NITRITE	PAH (EPA 8270)	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	VOC DW (EPA 524.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
562504EE	G-14-W	4/16/13	4:20		X	N	3	GW	HCl								X					
562504 FF	Potable well	4/16/13	4:50		X	N	3	DW	HCl										X			

Analysis Requested / Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

~~Sample Integrity - To be completed by receiving lab.~~
Method of Shipment : Driven
Temp. of Temp. Blank. ____ °C On Ice: ✓
Cooler seal intact upon receipt: ✓ Yes ____ No

~~Relinquished By: (sign)~~	Time	Date	~~Received By: (sign)~~	Time	Date
E Dow	1:45 PM	4/17/13			
Received in Laboratory By:		Time: 0900		Date: 4-18-13	

Synergy Environmental Lab,

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

KATHERINE POTTER
KATHERINE POTTER
1547 COUNTY ROAD D
GLENWOOD CITY, WI 54013

Report Date *03-Apr-14*

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721A
Sample ID 1541 CTY RD D
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721A
Sample ID 1541 CTY RD D
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721B
Sample ID 1543 CTY RD D
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721C
Sample ID 1547 CTY RD D
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721D
Sample ID 2698 154TH AVE
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721E
Sample ID 2695 155TH AVE
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721F ← 2685 ED
Sample ID ~~2658~~ 154TH AVE
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

Project Name EMERALD SERVICE STATION **Invoice #** E26721
Project #

Lab Code 5026721G
Sample ID TB
Sample Matrix Drinking Water
Sample Date 3/25/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Bromobenzene	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
Bromodichloromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Bromoform	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Bromomethane	< 0.98	ug/l	0.98	3.1	1	524.2		3/31/2014	CJR	1
Carbon Tetrachloride	< 0.25	ug/l	0.25	0.81	1	524.2		3/31/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	524.2		3/31/2014	CJR	1
Chloroethane	< 0.62	ug/l	0.62	2	1	524.2		3/31/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	524.2		3/31/2014	CJR	1
2-Chlorotoluene	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
4-Chlorotoluene	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Dibromochloromethane	< 0.2	ug/l	0.2	0.64	1	524.2		3/31/2014	CJR	1
Dibromomethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,4-Dichlorobenzene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,3-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
1,2-Dichlorobenzene	< 0.28	ug/l	0.28	0.88	1	524.2		3/31/2014	CJR	1
Dichlorodifluoromethane	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	524.2		3/31/2014	CJR	1
1,1-Dichloroethene	< 0.31	ug/l	0.31	0.99	1	524.2		3/31/2014	CJR	1
cis-1,2-Dichloroethene	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
trans-1,2-Dichloroethene	< 0.25	ug/l	0.25	0.8	1	524.2		3/31/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	524.2		3/31/2014	CJR	1
2,2-Dichloropropane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	8
1,3-Dichloropropane	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
trans-1,3-Dichloropropene	< 0.22	ug/l	0.22	0.69	1	524.2		3/31/2014	CJR	1
cis-1,3-Dichloropropene	< 0.2	ug/l	0.2	0.63	1	524.2		3/31/2014	CJR	1
1,1-Dichloropropene	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Ethylbenzene	< 0.27	ug/l	0.27	0.86	1	524.2		3/31/2014	CJR	1
Hexachlorobutadiene	< 0.48	ug/l	0.48	1.5	1	524.2		3/31/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
p-Isopropyltoluene	< 0.3	ug/l	0.3	0.94	1	524.2		3/31/2014	CJR	1
Methylene chloride	< 0.35	ug/l	0.35	1.1	1	524.2		3/31/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.26	ug/l	0.26	0.82	1	524.2		3/31/2014	CJR	1
Naphthalene	< 0.49	ug/l	0.49	1.6	1	524.2		3/31/2014	CJR	1
Styrene	< 0.23	ug/l	0.23	0.72	1	524.2		3/31/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	524.2		3/31/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.29	ug/l	0.29	0.91	1	524.2		3/31/2014	CJR	1
Tetrachloroethene	< 0.27	ug/l	0.27	0.85	1	524.2		3/31/2014	CJR	1
Toluene	< 0.24	ug/l	0.24	0.75	1	524.2		3/31/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.24	ug/l	0.24	0.76	1	524.2		3/31/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	524.2		3/31/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	524.2		3/31/2014	CJR	1
Trichloroethene (TCE)	< 0.3	ug/l	0.3	0.96	1	524.2		3/31/2014	CJR	1
Trichlorofluoromethane	< 0.26	ug/l	0.26	0.84	1	524.2		3/31/2014	CJR	1
1,2,3-Trichloropropane	< 0.91	ug/l	0.91	2.9	1	524.2		3/31/2014	CJR	1
Trichlorotrifluoroethane	< 0.41	ug/l	0.41	1.3	1	524.2		3/31/2014	CJR	1
1,2,4-Trimethylbenzene	< 0.31	ug/l	0.31	0.98	1	524.2		3/31/2014	CJR	1
1,3,5-Trimethylbenzene	< 0.26	ug/l	0.26	0.83	1	524.2		3/31/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	524.2		3/31/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	524.2		3/31/2014	CJR	1
o-Xylene	< 0.25	ug/l	0.25	0.79	1	524.2		3/31/2014	CJR	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
8	Closing calibration standard not within established limits.

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature *Michael Ricker*

CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.
1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # № 252
Page 1 of 1

Sample Handling Request
_____ Rush Analysis Date Required _____
(Rushes accepted only with prior authorization)
d Normal Turn Around

Lab I.D. #
Account No. : Quote No.:
Project #:
Sampler: (signature) Matthew C Metcalf

Project (Name / Location): Emerald Service Station - Emerald, WI

Reports To: Katherine Potter	Invoice To: K. Potter c/o METCO
Company	Company METCO
Address 1547 Cty Rd D	Address 709 Gillette St., Ste 3
City State Zip Glenwood City, WI 54013	City State Zip LaCrosse, WI 54603
Phone (715) 928-0550	Phone (608) 781-8879
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation
S026721	1541 Cty Rd D	3-25	2:30		X	N	3	GW	HCL
B	1543 Cty Rd D		2:15						
C	1542 Cty Rd D		1:55						
D	2698 154th Ave		2:45						
E	2695 155th Ave		3:20						
F	2655 154th Ave		3:05						
G	TB						1		

Analysis Requested / **Other Analysis**

DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/FID
										X			
										X			

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)
Note: Use Rules Apply "Agent Status"

Lab to send copy of Report to METCO/Jesse P. (Invoice to METCO)

Sample Integrity - To be completed by receiving lab.
Method of Shipment: Driven
Temp. of Temp. Blank ____ °C On Ice: X
Cooler seal intact upon receipt: X Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
Matthew C Metcalf	9:30	3-26-14			

Received in Laboratory By: [signature] Time: 8:00 Date: 3/27/14

APPENDIX C/ BOREHOLE DOCUMENTATION

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-1

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
			1											
			2	0-2' Tan sand and gravel (Fill)	FILL									
			3											
G-1-1 (0-4 feet)	24		4	2'-4' Gray clay	CL			0			M			No Petro Odor
			5											
			6											
			7											
G-1-2 (4-8 feet)	24		8	Gray fine to coarse grained sand with gravel	SP			350			M/W			Petro Odor
			9											
			10	8'-10' Gray fine to coarse grained sand with gravel	SP						W			
			11											
G-1-3 (8-12 feet) G-1-W (7-12 feet)	42		12	10'-12' Tan sandy clay with gravel EOB 12 Feet Groundwater sample G-1-W collected.. Borehole Abandoned.	CL			300			M			Petro Odor

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature: Firm: METCO

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295 and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-2

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample					Soil Properties										
Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
				Concrete										
G-2-1 (0-4 feet)	12		4	Gray sand and gravel (Fill)	FILL			0			M			No Petro Odor
G-2-2 (4-8 feet)	12		8	Brown clayey sand with gravel	SC			150			W			Petro Odor
G-2-W (3-8 feet)				EOB 8 Feet Groundwater sample G-2-W collected.. Borehole Abandoned.										

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature: Firm: METCO

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295 and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-3

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last: Firm: Geiss	04/16/13 MM/ DD/ YYYY	04/16/13 MM /DD/ YYYY	Geoprobe

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	Soil Properties: U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-3-1 (0-4 feet)	36		1 2 3 4	Brown clayey sand with gravel and glass (Fill)	FILL			0			M			No Petro Odor
G-3-2 4-8 feet)	24		5 6 7 8	Gray clayey sand with gravel	SC			500			M/W			Petro Odor
G-3-3 (8-10 feet) G-3-W -10 feet)	24		9 10 11 12	Gray clayey sand with gravel EOB 10 Feet Groundwater sample G-3-W collected.. Borehole Abandoned.	SC			400			W			Petro Odor

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature: Firm: METCO

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295 and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-4

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample					Soil Properties									
Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-4-1 (0-4 feet)	36		4	Brown sandy clay	CL			0			M			No Petro Odor
G-4-2 (4-8 feet)	36		8	Brown to gray fine to coarse grained sand with gravel	SP			370			M			Petro Odor
			10	Brown fine to coarse grained sand	SP									
G-4-3 (8-12 feet) G-4-W (4.5-9.5 feet)	42		12	Brown sandy clay	CL			310			W			Petro Odor
				EOB 12 Feet Groundwater sample G-4-W collected.. Borehole Abandoned.										

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature: Firm: METCO

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-5

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location	Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0" N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 " Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample					Soil Properties								
Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-5-1 (0-4 feet)	36		1 2 3 4	Brown to gray sandy clay	CL			0			M			No Petro Odor
			5 6	4'-6' Brown sandy clay	CL									
G-5-2 -8 feet)	42		7 8 9	6'-8' Brown fine to coarse grained sand to clayey sand with gravel	SP-SC			300			M			Petro Odor from 6-8 feet
G-5-3 (8-10 feet) G-5-W 10 feet)	24		10 11 12	Brown fine to coarse grained sand to clayey sand with gravel EOB 10 Feet Groundwater sample G-5-W collected.. Borehole Abandoned.	SP-SC			280			W			Petro Odor

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Signature: Firm: METCO

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-6

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-6-1 (0-4 feet)	36		1 2 3 4	Brown sandy clay	CL			0			M			No Petro Odor
			5	4'-5.5' Brown sandy clay	CL									
			6	5.5'-6.5' Brown fine to coarse grained sand with gravel	SP									
G-6-2 (4-8 feet)	36		7 8	6.5'-8' Brown sandy clay	CL			0			M			No Petro Odor
			9											
G-6-3 (8-10 feet) G-6-W (5-10 feet)	24		10	Brown fine to coarse grained sand with gravel	SP			0			W			No Petro Odor
			11 12	EOB 10 Feet Groundwater sample G-6-W collected.. Borehole Abandoned.										

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-7

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-7-1 (0-4 feet)	12		4	Brown sandy clay with gravel	CL			0			M			No Petro Odor
			6	4'-6' Brown sandy clay	CL									
G-7-2 (4-8 feet)	48		8	6'-8' Brown clayey sand	SC			0			M			No Petro Odor
G-7-3 8-10 feet)	42		10	Brown clayey sand with gravel	SC			0			M			No Petro Odor
			12	10'-13' Brown clayey sand	SC									
G-7-4 (10-14 feet) G-7-W (9-14 feet)	42		14	13'-14' Gray sandy silt	SP-SM			0			M			No Petro Odor
				EOB 14 Feet Groundwater sample G-7-W collected.. Borehole Abandoned.										
			16											
			18											
			20											
			22											
			24											

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gnature: Firm: METCO

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

cility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-8

ring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

cal Grid Origin (estimated X) or Boring Location	Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0" N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 " Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample					Soil Properties										
Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-8-1 (0-4 feet)	36		1 2 3 4	Brown sandy clay	CL			0			M			No Petro Odor
			5 6	4'-6' Brown sandy clay	CL									
-8-2 (feet)	36		7 8 9	6'-8' Brown fine to coarse grained sand with gravel	SP			0			M			No Petro Odor
G-8-3 (8-10 feet) -W (5 feet)	24		10 11 12	Brown fine to coarse grained sand with gravel EOB 10 Feet Groundwater sample G-8-W collected.. Borehole Abandoned.	SP			0			W			No Petro Odor

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-9

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-9-1 (0-4 feet)	36		1 2 3 4	Brown clayey sand with gravel	SC			0			M			No Petro Odor
			5	4'-5.5' Brown clayey sand with gravel	SC									
			6 7	5.5'-7' Brown fine to coarse grained sand with gravel	SP									
G-9-2 (7-8 feet)	36		8 9	7'-8' Brown clayey sand with gravel	SC			0			M			No Petro Odor
G-9-3 (8-10 feet) G-9-W (10 feet)	24		10 11 12	Brown fine to coarse grained sand EOB 10 Feet Groundwater sample G-9-W collected.. Borehole Abandoned.	SP			0			W			No Petro Odor

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-10

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample					Soil Properties									
Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-10-1 (0-4 feet)	36		1	Brown fine to coarse grained sand	SP			0			M			No Petro Odor
			2											
			3											
			4											
			5	4'-5' Brown clayey sand	SC									
			6											
			7	5'-7' Brown fine to coarse grained sand with gravel	SP									
G-10-2 (4-8 feet)	36		8	7'-8' Brown clayey sand	SC			0			M			No Petro Odor
			9											
G-10-3 (8-10 feet) G-10-W (5-10 feet)	24		10	Brown clayey sand	SC			0			W			No Petro Odor
				EOB 10 Feet Groundwater sample G-10-W collected.. Borehole Abandoned.										
			11											
			12											

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-11

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample: Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	Soil Properties: U S C S	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-11-1 (0-4 feet)	24		1 2 3 4	Orange fine to coarse grained sand	SP			0			M			No Petro Odor
			5 6 7	4'-7' Brown fine to coarse grained sand with gravel	SP									
G-11-2 4-8 feet)	42		8 9	7'-8' Brown clayey sand	SC			0			M			No Petro Odor
G-11-3 (8-10 feet) G-11-W (-10 feet)	24		10 11 12	Brown clayey sand EOB 10 Feet Groundwater sample G-11-W collected.. Borehole Abandoned.	SC			0			W			No Petro Odor

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-12

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-12-1 (0-4 feet)	12		1 2 3 4	Brown clayey sand	SC			0			M			No Petro Odor
			5 6 7											
G-12-2 4-8 feet)	42		8 9	Brown fine to coarse grained sand with gravel	SP			0			M			No Petro Odor
G-12-3 '8-10 feet) G-12-W -10 feet)	24		10 11 12	Brown clayey sand EOB 10 Feet Groundwater sample G-12-W collected.. Borehole Abandoned.	SC			0			W			No Petro Odor

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-13

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	Soil Properties USCS	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
G-13-1 (0-4 feet)	36		1 2 3 4	Brown clayey sand	SC			0			M			No Petro Odor
			5 6	4'-6' Brown fine to coarse grained sand with gravel	SP									
G-13-2 4-8 feet) G-13-W (3-8 feet)	42		7 8 9 10 11 12	6'-8' Brown clayey sand with gravel EOB 8 Feet Groundwater sample G-13-W collected.. Borehole Abandoned.	SC			0			M/W			No Petro Odor

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Form 4400-122 Rev. 7-98

Route To: Watershed / Wastewater: Waste Management:
Remediation / Redevelopment: X Other:

Facility / Project Name	License / Permit / Monitoring Number	Boring Number
Emerald Service Station		G-14

Boring Drilled By: Name of crew chief (first, last) and Firm	Drilling Date Started	Drilling Date Completed	Drilling Method
First: Darrin Last:	04/16/13	04/16/13	Geoprobe
Firm: Geiss	MM/ DD/ YYYY	MM /DD/ YYYY	

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL		2 inches

Local Grid Origin (estimated X) or Boring Location		Local Grid Location
State Plane N, E	Lat 45 ° 4 ' 55.0"	N E
NW¼ of SW¼ of Section 18 , T 30 N, R 15 W	Long 92 ° 15 ' 27.5 "	Feet S Feet W

Facility ID	County	County Code	Civil Town / City / Village
	St. Croix	56	Emerald

Sample Number & Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (below ground surface)	Soil / Rock Description And Geologic Origin For Each Major Unit	Soil Properties: USCS	Graphic Log	Well Diagram	PID / FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD / Comments
			1	0-1' Tan sand and gravel (Fill)	FILL									
			2											
			3	1'-3' Void										
G-14-1 (0-4 feet)	12		4	3'-4' Tan sand and gravel (Fill)	FILL			0			M			No Petro Odor
			5											
			6	4'-6' Gray fine to coarse grained sand	SP									
			7											
G-14-2 (4-8 feet) G-14-W (3-8 feet)	36		8	6'-8' Brown clayey sand with gravel	SC			400			M/W			Petro Odor
				EOB 8 Feet Groundwater sample G-14-W collected.. Borehole Abandoned.										
			9											
			10											
			11											
			12											

hereby certify that the information on this form is true and correct to the best of my knowledge

Signature: Firm: **METCO**

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State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

Notice: Please complete Form 3300-5 and return it to the appropiate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name G-1 | Gov't Lot (If applicable) _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55. " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY/ OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 12 (From groundsurface) | Casing Diameter (in.) 2 | Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 7

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	12	18	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-2 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55 . " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well: _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 8 (From groundsurface)

Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 3

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	8	12	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work: Eric Dahl | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

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State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No.	DNR Well ID No.	County
_ _ _ _ _ _		ST. CROIX

Common Well Name G-3 _____ Gov't Lot (If applicable)

NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W
Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55 . " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S C N ☐☐☐ Zone

Reason For Abandonment	WI Unique Well No.
Sampling complete	of Replacement Well _ _ _ _ _ _

(2) FACILITY/ OWNER INFORMATION

Facility Name
Emerald Service Station

Facility ID	License/Permit/Monitoring No.

Street Address of Well
1547 County Highway D

City, Village, or Town
Emerald

Present Well Owner	Original Owner
Katherin Potter	

Street Address or Route of Owner
1547 County Road D

City, State, Zip Code
Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work	Date of Abandonment
Eric Dahl (METCO)	4/16/2013

Signature of Person Doing Work	Date Signed
	5/14/13

Street or Route	Telephone Number
709 Gillette St. Ste. 3	(608)781-8879

City, State, Zip Code
LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-4 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55 . " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well: _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 12 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 4.5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	12	18	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

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WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000 Page 1 of 2

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-5 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55.5 " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well: _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608) 781-8879

City, State, Zip Code: LaCrosse WI 54603-

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-6 | Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55. " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

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Date Received | Noted By

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WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

Notice: Please complete Form 3300-5 and return it to the appropiate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name G-7 _____ Gov't Lot (If applicable)

NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W
Grid Location

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55. " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 14 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 9

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	14	21	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000 Page 1 of 2

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name G-8 | Gov't Lot (If applicable) _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55 . " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY/ OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) | Casing Diameter (in.) 2 | Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work: [signature] | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000 Page 1 of 2

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-9 | Gov't Lot (If applicable)

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55 . " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work: [signature] | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000 Page 1 of 2

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-10 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55.5 " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well: _ _ _ _ _ _

(2) FACILITY/ OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole

Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work: E Dahl | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

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Department of Natural Resources

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-11 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55.5 " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY/OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608) 781-8879

City, State, Zip Code: LaCrosse WI 54603-

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name G-12 | Gov't Lot (If applicable) _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55.5 " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 10 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 5

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10	15	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

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Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

Notice: Please complete Form 3300-5 and return it to the appropiate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-13 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55.5 " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. S ☐ C ☐ N ☐ Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well: _ _ _ _ _ _

(2) FACILITY/ OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 8 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 3

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry (11 lb./gal. wt.)
☐ Bentonite-Sand Slurry " "
☐ Bentonite Chips

For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
☐ Bentonite - Cement Grout
☐ Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	8	12	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of ~~Person~~ Doing Work | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608)781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5 2/2000

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Route to: ☐ Drinking Water ☐ Watershed/Wastewater ☐ Waste Management [X] Remediation/Redevelopment ☐ Other _____

(1) GENERAL INFORMATION

WI Unique Well No. _ _ _ _ _ _ | DNR Well ID No. | County: ST. CROIX

Common Well Name: G-14 | Gov't Lot (If applicable): _____

Grid Location: NW 1/4 of SW 1/4 of Sec. 18 ; T. 30 N; R. 15 ☐ E [X] W

_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Local Grid Origin ☐ (estimated: ☐) or Well Location ☐

Lat. 45 ° 4 ' 55 . " Long 92 ° 15 ' 27.5 " or

St. Plane _____ ft. N. _____ ft. E. ☐ S ☐ C ☐ N Zone

Reason For Abandonment: Sampling complete

WI Unique Well No. of Replacement Well: _ _ _ _ _ _

(2) FACILITY / OWNER INFORMATION

Facility Name: Emerald Service Station

Facility ID | License/Permit/Monitoring No.

Street Address of Well: 1547 County Highway D

City, Village, or Town: Emerald

Present Well Owner: Katherin Potter | Original Owner

Street Address or Route of Owner: 1547 County Road D

City, State, Zip Code: Glenwood City WI 54013-

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date: 4/16/2013

☐ Monitoring Well
☐ Water Well
[X] Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
[X] Other (Specify) Geoprobe

Formation Type:
[X] Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 8 (From groundsurface) Casing Diameter (in.) 2

Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) 2

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 3

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed?	☐ Yes	☐ No	[X] Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	[X] Not Applicable
Screen Removed?	☐ Yes	☐ No	[X] Not Applicable
Casing Left in Place?	☐ Yes	[X] No	
Was Casing Cut Off Below Surface?	[X] Yes	☐ No	
Did Sealing Material Rise to Surface?	[X] Yes	☐ No	
Did Material Settle After 24 Hours?	☐ Yes	[X] No	
If Yes, Was Hole Retopped?	☐ Yes	☐ No	

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) [X] Other (Explain) Gravity

Sealing Materials
☐ Neat Cement Grout
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For monitoring wells and monitoring well boreholes only
☐ Bentonite Chips
[X] Granular Bentonite
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(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	lbs. Sealant	Mix Ratio or Mud Weight
Bentonite Chips	Surface	8	12	

(6) Comments: Abandoned by Geiss under METCO supervision.

(7) Name of Person or Firm Doing Sealing Work: Eric Dahl (METCO) | Date of Abandonment: 4/16/2013

Signature of Person Doing Work: [signature] | Date Signed: 5/14/13

Street or Route: 709 Gillette St. Ste. 3 | Telephone Number: (608) 781-8879

City, State, Zip Code: LaCrosse WI 54603-

FOR DNR OR COUNTY USE ONLY

Date Received | Noted By

Comments

APPENDIX D/ OTHER DOCUMENTATION

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_2SO_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_2SO_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_2SO_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_2SO_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_2SO_4	28 days
Organic Carbon SW846 9060/ EPA 415.1	40 ml Glass	4°C, pH<2 with H_2SO_4 or HCL	28 days
Phenol, Total EPA 420.1	1 Liter Glass	4°C, pH<2 with H_2SO_4	28 days
Phosphorus, Total EPA 365.3	250 mL HDPE	4°C, pH<2 with H_2SO_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.

Residential setting Not-To-Exceed D-C RCLs from web-calculator at: *http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search* (Chicago as climatic zone). Basis: ca = cancer; nc = non-cancer; Csat = soil saturation concentration; ceiling = 10%.

------> If web-calculator result or Csat exceeds 10% by weight (the ceiling limit concentration defined in RSL Users Guide), Not-to-Exceed D-C RCL defaults to 100,000 ppm.

1. *Enter data in yellow cells.* Numeric only values under "INPUT Site Data." For ND, use detection limit. Do not type '-', 'NA' nor 'space bar.' Leave purple cells "as is."

2. *After completing data entry, See Summary in Row 872.*

Site Name:

Sample ID:

Contaminant	CAS Number	NC RCL (mg/kg)	C RCL (mg/kg)	Not-To-Exceed D-C RCL (mg/kg)	Basis	INPUT Site Data (mg/kg)	Comparison / Hazard Index / Cumulative Cancer Risk: Flag E = Individual Exceedance	Hazard Quotient (HQ) from Data	Target CR used: 1.00E-06 Cancer Risk (CR) from Data
Benzene	71-43-2	111	1.49	1.49	ca				
Ethylbenzene	100-41-4	4220	7.47	7.47	ca				
Toluene	108-88-3	5300	-	818	Csat				
Xylenes	1330-20-7	890	-	256	Csat				
Methyl tert-Butyl Ether (MTBE)	1634-04-4	23800	59.4	59.4	ca				
Dichloroethane, 1,2-	107-06-2	46.7	0.61	0.61	ca				
Dibromoethane, 1,2-	106-93-4	107	0.05	0.05	ca				
Trichloroethylene	79-01-6	6.05	0.64	0.64	ca				
Tetrachloroethylene	127-18-4	115	30.7	30.7	ca				
Vinyl Chloride	75-01-4	93.3	0.07	0.07	ca				
Dichloroethylene, 1,1-	75-35-4	342	-	342	nc				
Dichloroethylene, 1,2-trans-	156-60-5	211	-	211	nc				
Dichloroethylene, 1,2-cis-	156-59-2	156	-	156	nc				
Trichloroethane, 1,1,1-	71-55-6	12300	-	640	Csat				
Carbon Tetrachloride	56-23-5	137	0.85	0.85	ca				
Trimethylbenzene, 1,2,4-	95-63-6	89.8	-	89.8	nc				
Trimethylbenzene, 1,3,5-	108-67-8	782	-	182	Csat				
Naphthalene	91-20-3	188	5.15	5.15	ca				
Benzo[a]pyrene	50-32-8	-	0.01	0.01	ca				
Acenaphthene	83-32-9	3440	-	3440	nc				
Anthracene	120-12-7	17200	-	17200	nc				
Benz[a]anthracene	56-55-3	-	0.15	0.15	ca				
Benzo(j)fluoranthene	205-82-3	-	0.38	0.38	ca				
Benzo[b]fluoranthene	205-99-2	-	0.15	0.15	ca				
Benzo[k]fluoranthene	207-08-9	-	1.48	1.48	ca				
Chrysene	218-01-9	-	14.8	14.8	ca				
Dibenz[a,h]anthracene	53-70-3	-	0.01	0.01	ca				
Dibenzo(a,e)pyrene	192-65-4	-	0.04	0.04	ca				
Dimethylbenz(a)anthracene, 7,12-	57-97-6	-	0	0	ca				
Fluoranthene	206-44-0	2290	-	2290	nc				
Fluorene	86-73-7	2290	-	2290	nc				
Indeno[1,2,3-cd]pyrene	193-39-5	-	0.15	0.15	ca				
Methylnaphthalene, 1-	90-12-0	4010	15.6	15.6	ca				
Methylnaphthalene, 2-	91-57-6	229	-	229	nc				
Nitropyrene, 4-	57835-92-4	-	0.38	0.38	ca				
Pyrene	129-00-0	1720	-	1720	nc				
Cadmium (Diet)	7440-43-9	70.2	2110	70.2	nc				
Lead and Compounds	7439-92-1	400	-	400	nc				
Test1Chem(DRO)	Wis. DRO			100					
Test2Chem(GRO)	Wis. GRO			100					

Type BRRTS No. Here (If Known)

Exceedance Count / Hazard Index / Cumulative Cancer Risk: 0 | 0.00E+00 | 0.0E+00

To Pass, data must meet all these criteria: Exceedance Count = 0 | HI ≤ 1.00E+00 | Cumulative CR ≤ 1e-05

Bottom-Line: Soil Data Entry Needed!

Residual Contaminant Levels Protective of Groundwater Quality
(Soil-to-Groundwater Scenario Results from: *http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search*)

NR140 Substance	NR 140 CAS	Fed MCL (ug/l) (If Red, MCL>ES)	NR 140 ES (ug/l)	RCL-gw (mg/kg) DF=1	Use 2, or input the calculated site-specific DF --> 2.00	INPUT NUMERIC Site Data Max (mg/kg)	Flag E = Individual Exceedance!	*Type BRRTS No. Here (If Known). Assess groundwater levels separately.*
Acetochlor	34256-82-1	-	7	5.58E-03				
Acetone	67-64-1	-	9000	1.85E+00				
Alachlor	15972-60-8	2	2	1.65E-03				
Aldicarb	116-06-3	3	10	2.49E-03				
Aluminum	7429-90-5	-	200	3.01E+02				
Antimony	7440-36-0	6	6	2.71E-01				
Anthracene	120-12-7	-	3000	9.84E+01				
Arsenic	7440-38-2	10	10	2.92E-01				
Atrazine, total chlorinated residues	1912-24-9	3	3	1.95E-03				
Barium	7440-39-3	2000	2000	8.24E+01				
Bentazon	25057-89-0	-	300	6.59E-02				
Benzene	71-43-2	5	5	2.56E-03				
Benzo(a)pyrene (PAH)	50-32-8	0.2	0.2	2.35E-01				
Benzo(b)fluoranthene (PAH)	205-99-2	-	0.2	2.40E-01				
Beryllium	7440-41-7	4	4	3.16E+00				
Boron	7440-42-8	-	1000	3.20E+00				
Bromodichloromethane (THM)	75-27-4	80	0.6	1.63E-04				
Bromoform (THM)	75-25-2	80	4.4	1.17E-03				
Bromomethane	74-83-9	-	10	2.53E-03				
Butylate	2008-41-5	-	400	3.88E-01				
Cadmium	7440-43-9	5	5	3.76E-01				
Carbaryl	63-25-2	-	40	3.64E-02				
Carbofuran	1563-66-2	40	40	1.56E-02				
Carbon disulfide	75-15-0	-	1000	2.97E-01				
Carbon tetrachloride	56-23-5	5	5	1.94E-03				
Chloramben	133-90-4	-	150	3.63E-02				
Chlorodifluoromethane	75-45-6	-	7000	2.89E+00				
Chloroethane	75-00-3	-	400	1.13E-01				
Chloroform (THM)	67-66-3	80	6	1.67E-03				
Chlorpyrifos	2921-88-2	-	2	2.95E-02				
Chloromethane	74-87-3	-	30	7.76E-03				
Chromium (total)	7440-47-3	100	100	1.80E+05				Re-assess if Cr-VI present
Chrysene (PAH)	218-01-9	-	0.2	7.25E-02				
Cobalt	7440-48-4	-	40	1.81E+00				
Copper	7440-50-8	1300	1300	4.58E+01				
Cyanazine	21725-46-2	-	1	4.68E-04				
Cyanide, free	57-12-5	200	200	2.02E+00				
Dacthal (DCPA)	1861-32-1	-	70	8.56E-02				
1,2-Dibromoethane	106-93-4	0.05	0.05	1.41E-05				
Dibromochloromethane (THM)	124-48-1	80	60	1.60E-02				
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	0.2	8.64E-05				
Dibutyl phthalate	84-74-2	-	1000	2.52E+00				
Dicamba	1918-00-9	-	300	7.76E-02				
1,2-Dichlorobenzene	95-50-1	600	600	5.84E-01				
1,3-Dichlorobenzene	541-73-1	-	600	5.76E-01				
1,4-Dichlorobenzene	106-46-7	75	75	7.20E-02				
Dichlorodifluoromethane	75-71-8	-	1000	1.54E+00				
1,1-Dichloroethane	75-34-3	-	850	2.42E-01				
1,2-Dichloroethane	107-06-2	5	5	1.42E-03				
1,1-Dichloroethylene	75-35-4	7	7	2.51E-03				
1,2-Dichloroethylene (cis)	156-59-2	70	70	2.06E-02				
1,2-Dichloroethylene (trans)	156-60-5	100	100	2.94E-02				
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70	70	1.81E-02				
1,2-Dichloropropane	78-87-5	5	5	1.66E-03				
1,3-Dichloropropene (cis/trans) (Telone)	542-75-6	-	0.4	1.43E-04				
Di (2-ethylhexyl) phthalate	117-81-7	6	6	1.44E+00				
Dimethoate	60-51-5	-	2	4.51E-04				
2,4-Dinitrotoluene	121-14-2	-	0.05	6.76E-05				
2,6-Dinitrotoluene	606-20-2	-	0.05	6.88E-05				
Dinitrotoluene, Total Residues	25321-14-6	-	0.05	6.89E-05				
Dinoseb	88-85-7	7	7	6.15E-02				
1,4-Dioxane (p-dioxane)	123-91-1	-	3	6.18E-04				
Dioxin (2,3,7,8-TCDD)	1746-01-6	0	0	1.50E-05				
Endrin	72-20-8	2	2	8.08E-02				
EPTC	759-94-4	-	250	1.32E-01				

No RSL result for: Asbestos; Bacteria; 1,3-DCB; Hydrogen Sulfide; Nitrate/Nitrite; Tetrahydrofuran; Perchlorate.

Only use DAF=2 (or site-specific DAF) RCL after clearly defining gw plume. RCL < 0.0001 ppm is in "E" notation.

Residual Contaminant Levels Protective of Groundwater Quality
(Soil-to-Groundwater Scenario Results from: *http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search*)

NR140 Substance	NR 140 CAS	Fed MCL (ug/l) (If Red, MCL>ES)	NR 140 ES (ug/l)	RCL-gw (mg/kg) DF=1	Use 2, or input the calculated site-specific DF --> 2.00	INPUT NUMERIC Site Data Max (mg/kg)	Flag E = Individual Exceedance
Ethylbenzene	100-41-4	700	700	7.85E-01			
Ethyl Ether (Diethyl Ether)	60-29-7	-	1000	2.24E-01			
Ethylene glycol	107-21-1	-	14000	2.82E+00			
Fluoranthene	206-44-0	-	400	4.44E+01			
Fluorene (PAH)	86-73-7	-	400	7.41E+00			
Fluoride	7782-41-4	4000	4000	6.01E+02			
Fluorotrichloromethane	75-69-4	-	3490	2.23E+00			
Formaldehyde	50-00-0	-	1000	2.02E-01			
Heptachlor	76-44-8	0.4	0.4	3.31E-02			
Heptachlor epoxide	1024-57-3	0.2	0.2	4.08E-03			
Hexachlorobenzene	118-74-1	1	1	1.26E-02			
n-Hexane	110-54-3	-	600	4.22E+00			
Lead	7439-92-1	15	15	1.35E+01			
Lindane	58-89-9	0.2	0.2	1.16E-03			
Manganese	7439-96-5	-	300	1.96E+01			
Mercury	7439-97-6	2	2	1.04E-01			
Methanol	67-56-1	-	5000	1.01E+00			
Methoxychlor	72-43-5	40	40	2.16E+00			
Methylene chloride	75-09-2	5	5	1.28E-03			
Methyl ethyl ketone (MEK)	78-93-3	-	4000	8.39E-01			
Methyl isobutyl ketone (MIBK)	108-10-1	-	500	1.13E-01			
Methyl tert-butyl ether (MTBE)	1634-04-4	-	60	1.35E-02			
Metolachlor/s-Metolachlor	51218-45-2	-	100	1.17E-01			
Metribuzin	21087-64-9	-	70	2.14E-02			
Molybdenum	7439-98-7	-	40	8.08E-01			
Monochlorobenzene	108-90-7	100	100	6.79E-02			
Naphthalene	91-20-3	-	100	3.29E-01			
Nickel	7440-02-0	-	100	6.50E+00			
N-Nitrosodiphenylamine (NDPA)	86-30-6	-	7	3.82E-02			
Pentachlorophenol (PCP)	87-86-5	1	1	1.01E-02			
Phenol	108-95-2	-	2000	1.15E+00			
Picloram	1918-02-1	500	500	1.39E-01			
Polychlorinated biphenyls (PCBs)	1336-36-3	0.5	0.03	4.69E-03			
Prometon	1610-18-0	-	100	4.75E-02			
Propazine	139-40-2	-	10	8.86E-03			
Pyrene (PAH)	129-00-0	-	250	2.72E+01			
Pyridine	110-86-1	-	10	3.44E-03			
Selenium	7782-49-2	50	50	2.60E-01			
Silver	7440-22-4	-	50	4.25E-01			
Simazine	122-34-9	4	4	1.97E-03			
Styrene	100-42-5	100	100	1.10E-01			
Tertiary Butyl Alcohol (TBA)	75-65-0	-	12	2.45E-03			
1,1,1,2-Tetrachloroethane	630-20-6	-	70	2.67E-02			
1,1,2,2-Tetrachloroethane	79-34-5	-	0.2	7.80E-05			
Tetrachloroethylene (PCE)	127-18-4	5	5	2.27E-03			
Tetrahydrofuran	109-99-9	-	50	1.11E-02			
Thallium	7440-28-0	2	2	1.42E-01			
Toluene	108-88-3	1000	800	5.54E-01			
Toxaphene	8001-35-2	3	3	4.64E-01			
1,2,4-Trichlorobenzene	120-82-1	70	70	2.04E-01			
1,1,1-Trichloroethane	71-55-6	200	200	7.01E-02			
1,1,2-Trichloroethane	79-00-5	5	5	1.62E-03			
Trichloroethylene (TCE)	79-01-6	5	5	1.79E-03			
[illegible]	93-72-1	50	50	2.75E-02			
1,2,3-Trichloropropane	96-18-4	-	60	2.60E-02			
Trifluralin	1582-09-8	-	7.5	2.48E-01			
[illegible]	95-63-6 / 108-67-8	-	480	6.90E-01			
Vanadium	7440-62-2						
Vinyl chloride	75-01-4	2	0.2	6.90E-05			
Xylenes (m-, o-, p- combined)	1330-20-7	10000	2000	1.97E+00			

Type BRRTS No. Here (If Known). Assess groundwater levels separately.

No RSL result for: Asbestos; Bacteria; 1,3-DCB; Hydrogen Sulfide; Nitrate/Nitrite; Tetrahydrofuran; Perchlorate.

Only use DAF=2 (or site-specific DAF) RCL after clearly defining gw plume. RCL < 0.0001 ppm is in "E" notation.

Site-specific

Resident Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	1.0E-6
ED_r (exposure duration - resident) year	30
ET_{rs} (exposure time - resident) hour	24
ED_c (exposure duration - child) year	6
ED_a (exposure duration - adult) year	24
BW_a (body weight - adult) kg	70
BW_c (body weight - child) kg	15
SA_a (skin surface area - adult) cm^2/day	5700
SA_c (skin surface area - child) cm^2/day	2800
THQ (target hazard quotient) unitless	1
LT (lifetime - resident) year	70
EF_r (exposure frequency) day/year	350
IRS_a (soil intake rate - adult) mg/day	100
IRS_c (soil intake rate - child) mg/day	200
AF_a (skin adherence factor - adult) mg/cm^2	0.07
AF_c (skin adherence factor - child) mg/cm^2	0.2
IFS_{adj} (age-adjusted soil ingestion factor) mg-year/kg-day	114
DFS_{adj} (age-adjusted soil dermal factor) mg-year/kg-day	361
$IFSM_{adj}$ (mutagenic age-adjusted soil ingestion factor) mg-year/kg-day	489.5
$DFSM_{adj}$ (mutagenic age-adjusted soil dermal factor) mg-year/kg-day	1445
ED_{0-2} (exposure duration first phase) year	2
ED_{2-6} (exposure duration second phase) year	4
ED_{6-16} (exposure duration third phase) year	10
ED_{16-30} (exposure duration fourth phase) year	14
City (Climate Zone) PEF Selection	Chicago, IL (7)
A_s (acres) PEF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) PEF Selection	98.43071
PEF (particulate emission factor) m^3/kg	1560521108
A (PEF Dispersion Constant)	16.8653

Site-specific

Resident Equation Inputs for Soil

Variable	Value
B (PEF Dispersion Constant)	18.7848
C (PEF Dispersion Constant)	215.0624
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.65
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.182
City (Climate Zone) VF Selection	Chicago, IL (7)
A_s (acres) VF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) VF Selection	98.43071
foc (fraction organic carbon in soil) g/g	0.006
ρ$_b$ (dry soil bulk density) g/cm^3	1.5
ρ$_s$ (soil particle density) g/cm^3	2.65
θ$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	9.5e8
A (VF Dispersion Constant)	16.8653
B (VF Dispersion Constant)	18.7848
C (VF Dispersion Constant)	215.0624

Site-specific

Resident Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	RfD Ref	Chronic RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA
Benzene	71-43-2	No	Yes	5.50E-02	I	7.80E-06	I	4.00E-03	I	3.00E-02	I	1	-	1
Cadmium (Diet)	7440-43-9	No	No	-		1.80E-03	I	1.00E-03	I	1.00E-05	A	0.025	0.001	1
Carbon Tetrachloride	56-23-5	No	Yes	7.00E-02	I	6.00E-06	I	4.00E-03	I	1.00E-01	I	1	-	1
Dibromoethane, 1,2-	106-93-4	No	Yes	2.00E+00	I	6.00E-04	I	9.00E-03	I	9.00E-03	I	1	-	1
Dichloroethane, 1,2-	107-06-2	No	Yes	9.10E-02	I	2.60E-05	I	6.00E-03	X	7.00E-03	P	1	-	1
Dichloroethylene, 1,1-	75-35-4	No	Yes	-		-		5.00E-02	I	2.00E-01	I	1	-	1
Dichloroethylene, 1,2-cis-	156-59-2	No	Yes	-		-		2.00E-03	I	-		1	-	1
Dichloroethylene, 1,2-trans-	156-60-5	No	Yes	-		-		2.00E-02	I	6.00E-02	P	1	-	1
Ethylbenzene	100-41-4	No	Yes	1.10E-02	C	2.50E-06	C	1.00E-01	I	1.00E+00	I	1	-	1
Lead and Compounds	7439-92-1	No	No	-		-		-		-		1	-	1
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	1.80E-03	C	2.60E-07	C	-		3.00E+00	I	1	-	1
Acenaphthene	83-32-9	No	Yes	-		-		6.00E-02	I	-		1	0.13	1
Anthracene	120-12-7	No	Yes	-		-		3.00E-01	I	-		1	0.13	1
Benz[a]anthracene	56-55-3	Yes	No	7.30E-01	W	1.10E-04	C	-		-		1	0.13	1
Benzo(j)fluoranthene	205-82-3	No	No	1.20E+00	C	1.10E-04	C	-		-		1	0.13	1
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	I	1.10E-03	C	-		-		1	0.13	1
Benzo[b]fluoranthene	205-99-2	Yes	No	7.30E-01	W	1.10E-04	C	-		-		1	0.13	1
Benzo[k]fluoranthene	207-08-9	Yes	No	7.30E-02	W	1.10E-04	C	-		-		1	0.13	1
Chrysene	218-01-9	Yes	No	7.30E-03	W	1.10E-05	C	-		-		1	0.13	1
Dibenz[a,h]anthracene	53-70-3	Yes	No	7.30E+00	W	1.20E-03	C	-		-		1	0.13	1
Dibenzo(a,e)pyrene	192-65-4	No	No	1.20E+01	C	1.10E-03	C	-		-		1	0.13	1
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	2.50E+02	C	7.10E-02	C	-		-		1	0.13	1
Fluoranthene	206-44-0	No	No	-		-		4.00E-02	I	-		1	0.13	1
Fluorene	86-73-7	No	Yes	-		-		4.00E-02	I	-		1	0.13	1
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	7.30E-01	W	1.10E-04	C	-		-		1	0.13	1
Methylnaphthalene, 1-	90-12-0	No	Yes	2.90E-02	P	-		7.00E-02	A	-		1	0.13	1
Methylnaphthalene, 2-	91-57-6	No	Yes	-		-		4.00E-03	I	-		1	0.13	1
Naphthalene	91-20-3	No	Yes	-		3.40E-05	C	2.00E-02	I	3.00E-03	I	1	0.13	1

Site-specific

Resident Screening Levels (RSL) for Soil

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Chemical	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL Child HQ=1 (mg/kg)	Dermal SL Child HQ=1 (mg/kg)	Inhalation SL Child HQ=1 (mg/kg)
Benzene	5.49E+03	1.82E+03	1.56E+09	1.16E+01	-	1.71E+00	1.49E+00	3.13E+02	-	1.72E+02
Cadmium (Diet)	-	-	1.56E+09	-	-	2.11E+03	2.11E+03	7.82E+01	6.98E+02	1.63E+04
Carbon Tetrachloride	2.32E+03	4.58E+02	1.56E+09	9.15E+00	-	9.42E-01	8.54E-01	3.13E+02	-	2.42E+02
Dibromoethane, 1,2-	1.34E+04	1.34E+03	1.56E+09	3.20E-01	-	5.45E-02	4.65E-02	7.04E+02	-	1.26E+02
Dichloroethane, 1,2-	7.11E+03	2.98E+03	1.56E+09	7.04E+00	-	6.65E-01	6.08E-01	4.69E+02	-	5.19E+01
Dichloroethylene, 1,1-	1.80E+03	1.19E+03	1.56E+09	-	-	-	-	3.91E+03	-	3.75E+02
Dichloroethylene, 1,2-cis-	3.88E+03	2.37E+03	1.56E+09	-	-	-	-	1.56E+02	-	-
Dichloroethylene, 1,2-trans-	3.90E+03	1.67E+03	1.56E+09	-	-	-	-	1.56E+03	-	2.44E+02
Ethylbenzene	8.81E+03	4.80E+02	1.56E+09	5.82E+01	-	8.57E+00	7.47E+00	7.82E+03	-	9.18E+03
Lead and Compounds	-	-	1.56E+09	-	-	-	-	-	-	-
Methyl tert-Butyl Ether (MTBE)	7.62E+03	8.87E+03	1.56E+09	3.56E+02	-	7.13E+01	5.94E+01	-	-	2.38E+04
Acenaphthene	2.19E+05	-	1.56E+09	-	-	-	-	4.69E+03	1.29E+04	-
Anthracene	8.13E+05	-	1.56E+09	-	-	-	-	2.35E+04	6.45E+04	-
Benz[a]anthracene	-	-	1.56E+09	2.04E-01	5.32E-01	1.36E+04	1.48E-01	-	-	-
Benzo(j)fluoranthene	-	-	1.56E+09	5.34E-01	1.30E+00	3.45E+04	3.78E-01	-	-	-
Benzo[a]pyrene	-	-	1.56E+09	2.04E-02	5.32E-02	1.36E+03	1.48E-02	-	-	-
Benzo[b]fluoranthene	-	-	1.56E+09	2.04E-01	5.32E-01	1.36E+04	1.48E-01	-	-	-
Benzo[k]fluoranthene	-	-	1.56E+09	2.04E+00	5.32E+00	1.36E+04	1.48E+00	-	-	-
Chrysene	-	-	1.56E+09	2.04E+01	5.32E+01	1.36E+05	1.48E+01	-	-	-
Dibenz[a,h]anthracene	-	-	1.56E+09	2.04E-02	5.32E-02	1.25E+03	1.48E-02	-	-	-
Dibenzo(a,e)pyrene	-	-	1.56E+09	5.34E-02	1.30E-01	3.45E+03	3.78E-02	-	-	-
Dimethylbenz(a)anthracene, 7,12-	-	-	1.56E+09	5.97E-04	1.55E-03	2.11E+01	4.31E-04	-	-	-
Fluoranthene	-	-	1.56E+09	-	-	-	-	3.13E+03	8.59E+03	-
Fluorene	4.37E+05	-	1.56E+09	-	-	-	-	3.13E+03	8.59E+03	-
Indeno[1,2,3-cd]pyrene	-	-	1.56E+09	2.04E-01	5.32E-01	1.36E+04	1.48E-01	-	-	-
Methylnaphthalene, 1-	9.11E+04	-	1.56E+09	2.21E+01	5.36E+01	-	1.56E+01	5.48E+03	1.50E+04	-
Methylnaphthalene, 2-	9.01E+04	-	1.56E+09	-	-	-	-	3.13E+02	8.59E+02	-
Naphthalene	7.20E+04	-	1.56E+09	-	-	5.15E+00	5.15E+00	1.56E+03	4.30E+03	2.25E+02

Site-specific

Resident Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	Noncarcinogenic SL Child HI=1 (mg/kg)	Ingestion SL Adult HQ=1 (mg/kg)	Dermal SL Adult HQ=1 (mg/kg)	Inhalation SL Adult HQ=1 (mg/kg)	Noncarcinogenic SL Adult HI=1 (mg/kg)	Screening Level (mg/kg)
Benzene	1.11E+02	2.92E+03	-	1.72E+02	1.62E+02	1.49E+00 ca*
Cadmium (Diet)	7.00E+01	7.30E+02	4.57E+03	1.63E+04	6.06E+02	7.00E+01 nc
Carbon Tetrachloride	1.37E+02	2.92E+03	-	2.42E+02	2.24E+02	8.54E-01 ca
Dibromoethane, 1,2-	1.07E+02	6.57E+03	-	1.26E+02	1.24E+02	4.65E-02 ca
Dichloroethane, 1,2-	4.67E+01	4.38E+03	-	5.19E+01	5.13E+01	6.08E-01 ca*
Dichloroethylene, 1,1-	3.42E+02	3.65E+04	-	3.75E+02	3.71E+02	3.42E+02 nc
Dichloroethylene, 1,2-cis-	1.56E+02	1.46E+03	-	-	1.46E+03	1.56E+02 nc
Dichloroethylene, 1,2-trans-	2.11E+02	1.46E+04	-	2.44E+02	2.40E+02	2.11E+02 nc
Ethylbenzene	4.22E+03	7.30E+04	-	9.18E+03	8.16E+03	7.47E+00 ca
Lead and Compounds	-	-	-	-	-	4.00E+02 nc
Methyl tert-Butyl Ether (MTBE)	2.38E+04	-	-	2.38E+04	2.38E+04	5.94E+01 ca
Acenaphthene	3.44E+03	4.38E+04	8.44E+04	-	2.88E+04	3.44E+03 nc
Anthracene	1.72E+04	2.19E+05	4.22E+05	-	1.44E+05	1.72E+04 nc
Benz[a]anthracene	-	-	-	-	-	1.48E-01 ca
Benzo(j)fluoranthene	-	-	-	-	-	3.78E-01 ca
Benzo[a]pyrene	-	-	-	-	-	1.48E-02 ca
Benzo[b]fluoranthene	-	-	-	-	-	1.48E-01 ca
Benzo[k]fluoranthene	-	-	-	-	-	1.48E+00 ca
Chrysene	-	-	-	-	-	1.48E+01 ca
Dibenz[a,h]anthracene	-	-	-	-	-	1.48E-02 ca
Dibenzo(a,e)pyrene	-	-	-	-	-	3.78E-02 ca
Dimethylbenz(a)anthracene, 7,12-	-	-	-	-	-	4.31E-04 ca
Fluoranthene	2.29E+03	2.92E+04	5.63E+04	-	1.92E+04	2.29E+03 nc
Fluorene	2.29E+03	2.92E+04	5.63E+04	-	1.92E+04	2.29E+03 nc
Indeno[1,2,3-cd]pyrene	-	-	-	-	-	1.48E-01 ca
Methylnaphthalene, 1-	4.01E+03	5.11E+04	9.85E+04	-	3.36E+04	1.56E+01 ca
Methylnaphthalene, 2-	2.29E+02	2.92E+03	5.63E+03	-	1.92E+03	2.29E+02 nc
Naphthalene	1.88E+02	1.46E+04	2.81E+04	2.25E+02	2.20E+02	5.15E+00 ca*

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	RfD Ref	Chronic RfC (mg/m^3)	RfC Ref	GIABS	ABS	RBA
Nitropyrene, 4-	57835-92-4	No	No	1.20E+00	C	1.10E-04	C	-		-		1	0.13	1
Pyrene	129-00-0	No	Yes	-		-		3.00E-02	I	-		1	0.13	1
Tetrachloroethylene	127-18-4	No	Yes	2.10E-03	I	2.60E-07	I	6.00E-03	I	4.00E-02	I	1	-	1
Toluene	108-88-3	No	Yes	-		-		8.00E-02	I	5.00E+00	I	1	-	1
Trichloroethane, 1,1,1-	71-55-6	No	Yes	-		-		2.00E+00	I	5.00E+00	I	1	-	1
Trichloroethylene	79-01-6	Yes	Yes	4.60E-02	I	4.10E-06	I	5.00E-04	I	2.00E-03	I	1	-	1
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes	-		-		-		7.00E-03	P	1	-	1
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes	-		-		1.00E-02	X	-		1	-	1
Vinyl Chloride	75-01-4	Yes	Yes	7.20E-01	I	4.40E-06	I	3.00E-03	I	1.00E-01	I	1	-	1
Xylenes	1330-20-7	No	Yes	-		-		2.00E-01	I	1.00E-01	I	1	-	1

Site-specific

Resident Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL Child HQ=1 (mg/kg)	Dermal SL Child HQ=1 (mg/kg)	Inhalation SL Child HQ=1 (mg/kg)
Nitropyrene, 4-	-	-	1.56E+09	5.34E-01	1.30E+00	3.45E+04	3.78E-01	-	-	-
Pyrene	3.70E+06	-	1.56E+09	-	-	-	-	2.35E+03	6.45E+03	-
Tetrachloroethylene	3.65E+03	1.66E+02	1.56E+09	3.05E+02	-	3.41E+01	3.07E+01	4.69E+02	-	1.52E+02
Toluene	6.66E+03	8.18E+02	1.56E+09	-	-	-	-	6.26E+03	-	3.47E+04
Trichloroethane, 1,1,1-	2.56E+03	6.40E+02	1.56E+09	-	-	-	-	1.56E+05	-	1.34E+04
Trichloroethylene	3.43E+03	6.92E+02	1.56E+09	3.24E+00	-	8.04E-01	6.44E-01	3.91E+01	-	7.16E+00
Trimethylbenzene, 1,2,4-	1.23E+04	2.19E+02	1.56E+09	-	-	-	-	-	-	8.98E+01
Trimethylbenzene, 1,3,5-	1.03E+04	1.82E+02	1.56E+09	-	-	-	-	7.82E+02	-	-
Vinyl Chloride	1.49E+03	3.92E+03	1.56E+09	9.32E-02	-	2.39E-01	6.71E-02	2.35E+02	-	1.55E+02
Xylenes	9.05E+03	2.58E+02	1.56E+09	-	-	-	-	1.56E+04	-	9.44E+02

Site-specific

Resident Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	Noncarcinogenic SL Child HI=1 (mg/kg)	Ingestion SL Adult HQ=1 (mg/kg)	Dermal SL Adult HQ=1 (mg/kg)	Inhalation SL Adult HQ=1 (mg/kg)	Noncarcinogenic SL Adult HI=1 (mg/kg)	Screening Level (mg/kg)
Nitropyrene, 4-	-	-	-	-	-	3.78E-01 ca
Pyrene	1.72E+03	2.19E+04	4.22E+04	-	1.44E+04	1.72E+03 nc
Tetrachloroethylene	1.15E+02	4.38E+03	-	1.52E+02	1.47E+02	3.07E+01 ca**
Toluene	5.30E+03	5.84E+04	-	3.47E+04	2.18E+04	5.30E+03 sat
Trichloroethane, 1,1,1-	1.23E+04	1.46E+06	-	1.34E+04	1.32E+04	1.23E+04 sat
Trichloroethylene	6.05E+00	3.65E+02	-	7.16E+00	7.02E+00	6.44E-01 ca**
Trimethylbenzene, 1,2,4-	8.98E+01	-	-	8.98E+01	8.98E+01	8.98E+01 nc
Trimethylbenzene, 1,3,5-	7.82E+02	7.30E+03	-	-	7.30E+03	7.82E+02 sat
Vinyl Chloride	9.33E+01	2.19E+03	-	1.55E+02	1.45E+02	6.71E-02 ca
Xylenes	8.90E+02	1.46E+05	-	9.44E+02	9.37E+02	8.90E+02 sat

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

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

Subchapter II — Groundwater Quality Standards

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

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

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

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

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 diaminoatrazine).

[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

APPENDIX E/ QUALIFICATIONS OF METCO PERSONNEL

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.

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.

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.

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.

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.

Jon Jensen

Professional Title

- Staff Scientist

Credentials

- Registered through the Wisconsin Department of Safety and Professional Services as a PECFA consultant (#1294924).

Education

Includes B.S. in Geography with and Environmental Science minor from University of Wisconsin – La Crosse: Applicable courses successfully completed include Interpretation of Aerial Photographs, Intro to GIS, Advanced Remote Sensing, Fundamentals of Cartography, Biogeography, and Conservation of Global Environments.

Work Experience

With METCO since July, 2014 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.

APPENDIX F/ STANDARD OF CARE

STANDARD OF CARE

The analysis and conclusions expressed in this report are based upon data obtained from the indicated subsurface locations and from other sources discussed in this report. Actual subsurface conditions may vary and may not become evident without further assessment.

All work conducted by METCO is in accordance with currently accepted hydrogeologic and engineering practices and they neither imply nor intend warranty.

We appreciate the opportunity to be of service to you. If you have any questions or require additional information, please do not hesitate to contact us.

"I Jason T. Powell, hereby certify that I am a scientist as that term is defined in s.NR 712.03 (3), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Jason T. Powell
Staff Scientist

10/31/14
Date

"I Ronald J. Anderson, hereby certify that I am a hydrogeologist as that term is defined in s.NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Ronald J. Anderson PG
Senior Hydrogeologist/Project Manager

10/31/14
Date

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
890 Spruce Street
Baldwin, WI 54002

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

May 22, 2014

Katherine Potter
1547 County Rd D
Emerald, WI 54013

RE: **Approval of Additional Site Investigation Funding**

PECFA # 54013-9999-00-A DNR BRRTS # 03-56-000393
Emerald Service Station-Frmr, 1547 County Rd D, Emerald

Site Investigation Exceedance Request Received: May 12, 2014

The Wisconsin Department of Natural Resources (Department) received a request to exceed the $20,000 investigation cost cap for the site referenced above. The Department is approving costs that your consultant requested to complete the investigation.

The additional amount approved over the $20,000.00 Site Investigation Cap is for a Cap maintenance plan and the GIS packet. A copy of the Department worksheet for the chapter NR 747, Wisconsin Administrative Code, Usual and Customary Cost Schedule (Cost Schedule) tasks is enclosed for your reference.

Site Investigation Cap:	**$20,000.00**
Additional Site Investigation Costs Approved:	**$1,043.00**
Site Investigation Cost (Excluding Interest) Cap:	**$21,043.00**

Usual and customary costs for activities included in this approval will only be reimbursed at a rate equal to or less than what is allowed on the Cost Schedule, and are reimbursed based upon the Cost Schedule that is in effect at the time the activity is performed. Costs for activities not included in this approval are not reimbursable without prior Department authorization.

Regulatory Correspondence (Task 7, Activity RC05), Claim Submittal (Task 27, Activity CS05) and Standardized Invoice (Task 28, Activity SI05) costs are not included in the cap approved above. These activities will be reimbursed according to the task specifications and with submittal of proper supporting documentation at claim review time.

Upon completion of the investigation, you must submit a complete site investigation report with a request for closure or a request that the report be evaluated for public bidding. In addition, you must complete the web reporting requirements annually and by the end of the calendar month following completion of the investigation, per section NR 747.62(1) and (4).

The Department considers the consultant the primary controller of costs during the site investigation. This approval does not guarantee eligibility of any specific costs that have been incurred or that may be incurred in the future. Final determination regarding the eligibility of costs will be made by the claim reviewer when the entire claim, including all invoices and reports, is submitted for payment.

Thank you for your efforts to protect Wisconsin's environment. If you have any questions, please contact me in writing at the letterhead address or by telephone at 715 684-2914 ext. 117.

Sincerely,

Patrick Collins

Patrick Collins
Hydrogeologist
Remediation and Redevelopment Program

Enclosure: Usual and Customary Cost Schedule Worksheet

cc: Jason Powell – Metco
Tim Zeichert - DNR

Usual & Customary Cost Schedule Worksheet #15 (effective January 1, 2014)

PECFA #:	54013-9999-00-A
Site Name:	Emeralsd Service Station (former)
	1547 CTY Rd. D, Emerald
Date:	May 22, 2014

Grand Total
$1,043.00

#	Task	Provider	Ref Code	Activity Reference Code Description	Unit	Units	Unit Cost	Total Cost	Notes
5	Closure Request		CR15	GIS Packet Submittal (For Source Property only)	Packet	1	$483.20	$ 483.20	
35	Cap Maintenance Plan		CMP05	Cap Maintenance Plan	Plan	1	$304.80	$ 304.80	
36	Change Order Request		COR05	Change Order Request	Change Order	1	$363.60	$ 255.00	
							Grand Total	$ 1,043.00	

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709 Gillette St., Ste #3 ♦ La Crosse, WI 54603 ♦ 1-800-552-2932 ♦ Fax (608) 781-8893 Email: rona@metcohq.com ♦www.metcohq.com

May 6, 2014

7
27
28

Tim Zeichert
Wisconsin Department of Natural Resources
101 S. Webster St., PO Box 7921 (RR/5)
Madison, WI 53707

Subject: Emerald Service Station (Former) – Site Investigation cost cap exceedence request (>$20K). BRRTS #: 03-56-000393, PECFA #: 54013-9999-00-A

Dear Mr. Zeichert,

A cost estimate (using Usual & Customary schedule of charges) is being submitted for completion of the site investigation at the subject property located at 1547 County Road D in Emerald, Wisconsin. This is required due to COMM 47 rule changes (Comm 47.337(2)) which requires WDNR approval to exceed the cap, meaning any costs incurred above $20,000 after April 30, 2006, will not be eligible for reimbursement unless previously approved.

15829.90
13469.0 2500.00

As of today's date, $15,829.90 has been spent of the $20,000 Site Investigation Cap, which included a workplan, Geoprobe Project (14 borings ranging from 8 to 14 feet bgs with 40 soil samples and 14 groundwater samples collected) with field and/or laboratory analysis (GRO, Lead, VOC, PVOC's, and Naphthalene), and sampling of the on-site potable well along with five nearby potable wells for VOC's (Method 524.2). The proposed workscope to complete the site investigation includes: completion of the Soil and Groundwater Investigation Report/ Primary Closure Request, GIS Packet, and Cap Maintenance Plan. The cost estimate for the remaining workscope is as follows:

Soil and Groundwater Investigation Report	$3,985.15
GIS Packet (Source Property Only)	$ 483.20
Cap Maintenance Plan	$ 304.80
Change Order Request	$ 255.00
Total	$5,028.15

METCO is requesting a cost cap exceedence in the amount of **$858.05** (proposed additional costs to complete the investigation $5,028.15 minus the remaining investigation budget $4,170.10). This will bring the total site investigation costs to $20,858.05.

Upon state approval of the proposed workscope and budget, METCO will proceed with the project.

Attached is a draft standardized invoice form for the above workscope as required.

Should you have any questions, comments, or recommendations please contact me at our La Crosse office (608) 781-8879 or email at jasonp@metcohq.com.

Sincerely,

Jason T. Powell
Staff Scientist

Attachment

JTP:ds

c: Katherine Potter – Client
Patrick Collins - WDNR

Usual and Customary Standardized Invoice #15
January 2014 - June 2014

RR-972A

PECFA #: 54013-9999-00
BRRT's #: 03-56-000393
Site Name: Emerald Service Station
Site Address: 1547 CTY Rd D, Glenwood City (Emerald), WI

Vendor Name: _____
Invoice #: _____
Invoice Date: _____
Check #: _____

U&C Total $5,028.
Variance to U&C Total
Grand Total $5,028.

TASK	TASK DESCRIPTION	SERVICES	ACTIVITY CODE	ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAX UNIT COST	UNITS	TOTAL MAX
5	Closure Request	Commodity	CR15	GIS Packet Submittal (For Source Property only)	Packet	$483.20	1	$483.
23	Soil And GW Investigation Report		SGIR05	Soil and GW Investigation Report	Report	$3,985.15	1	$3,985.
35	Cap Maintenance Plan		CMP05	Cap Maintenance Plan	Plan	$304.80	1	$304.
36	Change Order Request		COR05	Change Order Request (cost cap exceedance requests)	Change Order	$255.00	1	$255.
Variance								
Variance								

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PECFA Program
P.O. Box 8044
Madison, Wi 53703

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

WISCONSIN
DEPT. OF NATURAL RESOURCES

November 05, 2013

Katherine Potter
1547 County Rd D
Glenwood City, WI 54013

RE: **Denial of Additional Site Investigation Funding**

PECFA # 54013-9999-00-A DNR BRRTS # 03-56-000393
Emerald Service Station-Former, 1547 County Rd D, Emerald

Site Investigation Exceedance Request Received: October 03, 2013

Site Investigation Cap:	**$20,000.00**
Additional Site Investigation Costs Approved:	**$0.00**
Site Investigation Cost (Excluding Interest) Cap:	**$20,000.00**

Usual and customary costs for activities will only be reimbursed at a rate equal to or less than what is allowed on the Cost Schedule, and are reimbursed based upon the Cost Schedule that is in effect at the time the activity is performed.

Regulatory Correspondence (Task 7, Activity RC05), Claim Submittal (Task 27, Activity CS05) and Standardized Invoice (Task 28, Activity SI05) costs are not included in the cap. These activities will be reimbursed according to the task specifications and with submittal of proper supporting documentation at claim review time.

Upon completion of the investigation, you must submit a complete site investigation report with a request for closure or a request that the report be evaluated for public bidding. In addition, you must complete the web reporting requirements annually and by the end of the calendar month following completion of the investigation, per NR 747.62(1) and (4).

The Department considers the consultant the primary controller of costs during the site investigation. This approval does not guarantee eligibility of any specific costs that have been incurred or that may be incurred in the future. Final determination regarding the eligibility of costs will be made by the claim reviewer when the entire claim, including all invoices and reports, is submitted for payment.

Thank you for your efforts to protect Wisconsin's environment. If you have any questions, please contact me in writing at the letterhead address or by telephone at (608) 266-5788.

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September 26, 2013

Patrick Collins
Wisconsin Department of Natural Resources
890 Spruce Street
Baldwin, WI 54002

Subject: Emerald Service Station – Site Investigation cost cap exceedence request (>$20K).
BRRTS #: 03-56-000393, PECFA #: 54013-9999-00

Dear Mr. Collins,

On behalf of the Responsible Party, a cost estimate (using Usual & Customary schedule of charges) is being submitted for additional site investigation work at the subject property located at 1547 County Road D in Glenwood City (Emerald), Wisconsin. This is required due to COMM 47 rule changes (Comm 47.337(2)) which requires state approval to exceed the cap, meaning any costs incurred above $20,000 after April 30, 2006, will not be eligible for reimbursement unless previously approved.

As of today's date, $10,178.00 has been spent of the $20,000 Site Investigation Cap, which included workplan, Potable Well Field Reconnaissance, Potable Well Sample, and Geoprobe Project (14 borings ranging from 8 to 14 feet below ground surface (bgs) with 40 soil samples and 14 groundwater samples collected) with field and/or laboratory analysis (GRO, VOC, PVOC's, Naphthalene, and Lead). The cost estimate to complete the site investigation includes: Drilling Project with four soil borings to approximately 14 feet bgs, one soil boring to approximately 20 feet bgs (to further define vertical extent in the source area) and convert them to monitoring wells (to approximately 14 feet bgs with water table ranging from 6-9 feet bgs), two rounds of groundwater monitoring from all site wells (5 total) for laboratory analysis (VOC/PVOC, Naphthalene, Dissolved Lead, Nitrate/Nitrite, Sulfate, Dissolved Iron and Manganese), sample the on-site private well and up to 4 of the nearest neighboring private wells for laboratory analysis (VOC's Method 524.2), hydraulic conductivity testing, surveying, waste disposal, and completion of the Soil and Groundwater Investigation Report. The cost estimate for the above work scope is as follows:

Drilling Project (w/installation of five MW's)		$ 7,172.40
Soil Boring/MW Permit (1)		$ 234.40
Access Agreement (4 – private wells)		$ 680.00
Groundwater Monitoring (two events)		$ 2,383.70
Laboratory Analysis		$ 2,073.00
Surveying		$ 1,227.50
Hydraulic Conductivity Testing		$ 789.10
Waste Disposal		$ 1,165.70
Soil and Groundwater Investigation Report		$ 4,728.90
Change Order Request		$ 363.60
	Total	$20,818.30

METCO is requesting a cost cap exceedence in the amount of **$10,996.30** (proposed additional investigation costs ($20,818.30) minus the remaining investigation budget ($9,822.00)).

Upon state approval of the proposed workscope and budget, METCO will proceed with the site investigation.

Attached is a updated site layout map with proposed monitoring well locations, site overview map, data tables, and draft standardized invoice form for the above workscope as required.

Should you have any questions, comments, or recommendations please contact me at our La Crosse office (608) 781-8879 or email at jasonp@metcohq.com.

Sincerely,

Jason T. Powell
Staff Scientist

JTP:ds

Attachments

c: Katherine Potter - Client
Tim Zeichert - WDNR

SITE LAYOUT MAP

EMERALD SERVICE STATION

METCO
709 Gillette Street, Ste 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience™

EMERALD, WISCONSIN

DRAWN BY: ED

DATE: 06/28/2012

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

SCALE: 1 INCH = 30 FEET

0 15 30

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

● - GEOPROBE BORING LOCATION

- PROPOSED MONITORING WELL LOCATION

- POTABLE WELL LOCATION

○ - POWER POLE

- MONEHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

TAVERN
1546 COUNTY ROAD D

RESIDENTIAL
2698 154TH AVENUE

COUNTY ROAD D

PARKING LANE

RESIDENTIAL
1549 COUNTY ROAD D

GRASS

LP TANK

AWNING

FORMER EMERALD SERVICE STATION
1547 COUNTY ROAD D

CONCRETE

GRAVEL

FORMER SERVICE BAY

GARAGE

STORAGE TRAILER

FENCE

RESIDENTIAL
1543 COUNTY HWY D

GRASS

GRAVEL DRIVEWAY

RESIDENTIAL
1541 COUNTY ROAD D

154TH AVENUE

G-1 G-2 G-3 G-4 G-5 G-6 G-7 G-8 G-9 G-10 G-11 G-12 G-13 G-14

T-1 T-2 T-3

SITE OVERVIEW MAP

EMERALD SERVICE STATION

METCO
709 Gillette Street, Ste 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience

EMERALD,
WISCONSIN

DRAWN BY: ED

DATE: 06/28/2012

▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION

• - GEOPROBE BORING LOCATION

⊛ - POTABLE WELL LOCATION

○ - POWER POLE

⊕ - MONEHOLE

APPROXIMATE PROPERTY BOUNDRIES

FENCE

BURIED TELEPHONE LINE

BURIED FIBER OPTIC LINE

SEWER LINE

WATER LINE

OVERHEAD POWER LINE

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

SCALE: 1 INCH = 70 FEET

155TH AVENUE

RESIDENTIAL
2695 155TH STREET

TRAILER HOUSE

TAVERN

TAVERN
1546 COUNTY ROAD D

GARAGE

2696 154TH AVENUE

RESIDENTIAL
2698 154TH AVENUE

154TH AVENUE

RESIDENTIAL
2685 154TH AVENUE

RESIDENTIAL
2685 154TH AVENUE

RESIDENTIAL
1532 COUNTY ROAD D

RESIDENTIAL
1526 COUNTY ROAD D

COUNTY ROAD D

PARKING LANE

RESIDENTIAL
2703 156TH AVENUE

1557 COUNTY ROAD D

NO ADDRESS

RESIDENTIAL
1551 COUNTY ROAD D

RESIDENTIAL
1549 COUNTY ROAD D

GRASS

LP TANK

ASPHALT

CONCRETE

GRAVEL

POWER SERVICE BAY

GARAGE

STORAGE TRAILER

FENCE

FORMER EMERALD
SERVICE STATION
1547 COUNTY ROAD D

RESIDENTIAL
1543 COUNTY ROAD D

GRAVEL DRIVEWAY

RESIDENTIAL
1541 COUNTY ROAD D

Soil Analytical Results Summary
Emerald Service Station LUST Site BRRTS# 03-56-000393

Sample ID	Depth (feet)	Date	PID	Lead (ppm)	DRO (ppm)	GRO (ppm)	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	1,2,4-Trime-thylbenzene (ppb)	1,3,5-Trime-thylbenzene (ppb)	Xylene (Total) (ppb)	Other VOC's (ppb)
G-1-1	3.5	04/16/13	0	**448**	NS	45	**420**	480	<25	1100	**2790**	4300	1930	**8830**	NS
G-1-2	8.0	04/16/13	350	NS	NS	**262**	<250	460	<250	**6600**	<250	38000	**14700**	**9790**	NS
G-1-3	12.0	04/16/13	300	NS	NS	**400**	**2120**	**12100**	<250	**5800**	**17900**	27300	10000	**66200**	NS
G-2-1	3.5	04/16/13	0	33.6	NS	<10	**96**	103	<25	110	550	127	83	598	NS
G-2-2	8.0	04/16/13	150	NS	NS	<10	**67**	256	<25	56	37	220	193	376	NS
G-3-1	3.5	04/16/13	0	**156**	NS	18	**390**	1090	<25	410	680	1760	630	3080	NS
G-3-2	8.0	04/16/13	500	**65.6**	NS	**3500**	**274**	**36000**	<300	**62000**	1450	**316000**	**101000**	**320000**	SEE VOC SPREAD-SHEET
G-3-3	10.0	04/16/13	400	NOT SAMPLED											
G-4-1	3.5	04/16/13	0	10.7	NS	<10	<25	<25	<25	<25	<25	<25	<25	<75	NS
G-4-2	8.0	04/16/13	370	NS	NS	**2780**	**3130**	**25300**	<250	**29600**	1290	**208000**	**82000**	**99700**	NS
G-4-3	12.0	04/16/13	310	NS	NS	**249**	**600**	**7100**	<25	1930	750	11800	4400	**25600**	NS
G-5-1	3.5	04/16/13	0	NOT SAMPLED											
G-5-2	8.0	04/16/13	300	NS	NS	93	**249**	212	<25	239	61	350	1640	900	NS
G-5-3	10.0	04/16/13	280	NOT SAMPLED											
G-6-1	3.5	04/16/13	0	9.64	NS	<10	<25	<25	<25	<25	<25	<25	<25	<75	NS
G-6-2	8.0	04/16/13	0	NS	NS	<10	<25	<25	<25	<25	<25	<25	<25	<75	NS
G-6-3	10.0	04/16/13	0	NOT SAMPLED											
G-7-1	3.5	04/16/13	0	NOT SAMPLED											
G-7-2	8.0	04/16/13	0	NOT SAMPLED											
G-7-3-	10.0	04/16/13	0	NOT SAMPLED											
G-7-4	14.0	04/16/13	0	NOT SAMPLED											
G-8-1	3.5	04/16/13	0	NOT SAMPLED											
G-8-2	8.0	04/16/13	0	NOT SAMPLED											
G-8-3	12.0	04/16/13	0	NOT SAMPLED											
G-9-1	3.5	04/16/13	0	NOT SAMPLED											
G-9-2	8.0	04/16/13	0	NOT SAMPLED											
G-9-3	10.0	04/16/13	0	NOT SAMPLED											
G-10-1	3.5	04/16/13	0	NOT SAMPLED											
G-10-2	8.0	04/16/13	0	NOT SAMPLED											
G-10-3	10.0	04/16/13	0	NOT SAMPLED											
G-11-1	3.5	04/16/13	0	NOT SAMPLED											
G-11-2	8.0	04/16/13	0	NOT SAMPLED											
G-11-3	10.0	04/16/13	0	NOT SAMPLED											
G-12-1	3.5	04/16/13	0	NOT SAMPLED											
G-12-2	8.0	04/16/13	0	NOT SAMPLED											
G-12-3	10.0	04/16/13	0	NOT SAMPLED											
G-13-1	3.5	04/16/13	0	NOT SAMPLED											
G-13-2	8.0	04/16/13	0	NOT SAMPLED											
G-14-1	3.5	04/16/13	0	31.4	NS	<10	**150**	185	<25	32	77	119	152	512	NS
G-14-2	8.0	04/16/13	400	NS	NS	**460**	**920**	**15900**	<250	**6600**	640	32000	**11800**	**68300**	NS
NR720				50	100	100	5.5	2900	---	---	1500	---	---	4100	
NR746 Table 1				---	---	---	8500	4600	---	2700	38000	83000	11000	42000	
NR746 Table 2				---	---	---	1100	---	---	---	---	---	---	---	

Bold = NR720 Exceedance
Bold/Underline = NR746 Exceedance
NS = Not Sampled

Soil Analytical Results Summary
Emerald Service Station LUST Site BRRTS# 03-56-000393

Well Sampling Conducted on April 16, 2013

VOC's	G-3-2	NR720 Bold = Exceedance	NR746 Table 1 Bold/Underline = Exceedance	NR746 Table 2 Bold/Underline = Exceedance
Solids Percent	82.3	==	==	==
Lead/ppm	65.6	50	==	==
GRO/ppm	3500	100	==	==
Benzene/ppb	274	5.5	8500	1100
Bromobenzene/ppb	<130	==	==	==
Bromodichloromethane/ppb	<270	==	==	==
Bromoform/ppb	<300	==	==	==
tert-Butylbenzene/ppb	<200	==	==	==
sec-Butylbenzene/ppb	5200	==	==	==
n-Butylbenzene/ppb	34000	==	==	==
Carbon Tetrachloride/ppb	<250	==	==	==
Chlorobenzene/ppb	<160	==	==	==
Chloroethane/ppb	<420	==	==	==
Chloroform/ppb	<490	==	==	==
Chloromethane/ppb	<1810	==	==	==
2-Chlorotoluene/ppb	<160	==	==	==
4-Chlorotoluene/ppb	<140	==	==	==
1,2-Dibromo-3-chloropropane/ppb	<480	==	==	==
Dibromochloromethane/ppb	<140	==	==	==
1,4-Dichlorobenzene/ppb	<330	==	==	==
1,3-Dichlorobenzene/ppb	<300	==	==	==
1,2-Dichlorobenzene/ppb	<380	==	==	==
Dichlorodifluoromethane/ppb	<570	==	==	==
1,2-Dichloroethane/ppb	<360	4.9	600	540
1,1-Dichloroethane/ppb	<190	==	==	==
1,1-Dichloroethene/ppb	<210	==	==	==
cis-1,2-Dichloroethene/ppb	<240	==	==	==
trans-1,2-Dichloroethene/ppb	<290	==	==	==
1,2-Dichloropropane/ppb	<95	==	==	==
2,2-Dichloropropane/ppb	<460	==	==	==
1,3-Dichloropropane/ppb	<210	==	==	==
Di-isopropyl ether/ppb	<110	==	==	==
EDB (1,2-Dibromoethane)/ppb	<200	==	==	==
Ethylbenzene/ppb	36000	2900	4600	==
Hexachlorobutadiene/ppb	<950	==	==	==
Isopropylbenzene/ppb	9000	==	==	==
p-Isopropyltoluene/ppb	2760	==	==	==
Methylene chloride/ppb	<570	==	==	==
Methyl tert-butyl ether (MTBE)/ppb	<300	==	==	==
Naphthalene/ppb	62000	==	2700	==
n-Propylbenzene/ppb	44000	==	==	==
1,1,2,2-Tetrachloroethane/ppb	<120	==	==	==
1,1,1,2-Tetrachloroethane/ppb	<230	==	==	==
Tetrachloroethene (PCE)/ppb	<490	==	==	==
Toluene/ppb	1450	1500	38000	==
1,2,4-Trichlorobenzene/ppb	<790	==	==	==
1,2,3-Trichlorobenzene/ppb	<1290	==	==	==
1,1,1-Trichloroethane/ppb	<380	==	==	==
1,1,2-Trichloroethane/ppb	<230	==	==	==
Trichloroethene (TCE)/ppb	<280	==	==	==
Trichlorofluoromethane/ppb	<860	==	==	==
1,2,4-Trimethylbenzene/ppb	316000	==	83000	==
1,3,5-Trimethylbenzene/ppb	101000	==	11000	==
Vinyl Chloride/ppb	<210	==	==	==
m&p-Xylene/ppb	239000	4100	42000	==
o-Xylene/ppb	81000			==

= = No Exceedences
NS = Not Sampled

Geoprobe Groundwater Analytical Results Summary
Emerald Service Station LUST Site BRRTS# 03-56-000393

Sample ID	Date	Lead (ppm)	DRO (ppm)	GRO (ppm)	Benzene (ppb)	Ethyl Benzene (ppb)	MTBE (ppb)	Naph-thalene (ppb)	Toluene (ppb)	Trimethyl-benzenes (ppb)	Xylene (Total) (ppb)	Other VOC's (ppb)
G-1-W	04/16/13	NS	NS	NS	**44**	**790**	<23	**780**	*313*	**5500**	**6090**	NS
G-2-W	04/16/13	NS	NS	NS	0.34	0.70	<0.23	<1.7	<0.69	<3.6	1.82-2.45	NS
G-3-W	04/16/13	NS	NS	NS	<12	*330*	<11.5	**271**	<34.5	**1930**	**2670**	NS
G-4-W	04/16/13	NS	NS	NS	<4.8	52	<4.6	*41*	<13.8	*381*	207	NS
G-5-W	04/16/13	NS	NS	NS	<0.24	3.4	<0.23	<1.7	<0.69	4.67	8.8-9.43	NS
G-6-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-7-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-8-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-9-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-10-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-11-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-12-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-13-W	04/16/13	NS	NS	NS	<0.24	<0.55	<0.23	<1.7	<0.69	<3.6	<1.32	NS
G-14-W	04/16/13	NS	NS	NS	<0.24	26.5	<0.23	6.4	<0.69	74.5	72.9	NS
POTABLE WELL	04/16/13	NS	NS	NS	<0.24	<0.27	<0.26	<0.49	<0.24	<0.57	<0.94	SEE VOC SPREAD-SHEET
ENFORCE MENT STANDARD **ES = Bold**		15	-	-	5	700	60	100	800	480	2000	
PREVENTIVE ACTION LIMIT *PAL = Italics*		1.5	-	-	0.5	140	12	10	160	96	400	

NS = Not Sampled
(ppb) = parts per billion (ppm) = parts per million
DRO = Diesel Range Organics
GRO = Gasoline Range Organics

Groundwater Analytical Results Summary
Emerald Service Station LUST Site BRRTS# 03-56-000393

Well Sampling Conducted on April 16, 2013

VOC's Well Name	POTABLE WELL	ENFORCE MENT STANDARD = ES – Bold	*PREVENTIVE ACTION LIMIT = PAL - Italics*
Benzene/ppb	<0.24	**5**	*0.5*
Bromobenzene/ppb	<0.33	==	==
Bromodichloromethane/ppb	<0.27	==	==
Bromoform/ppb	<0.34	==	==
Bromomethane/ppb	<0.98	==	==
Carbon Tetrachloride/ppb	<0.25	==	==
Chlorobenzene/ppb	<0.24	==	==
Chloroethane/ppb	<0.62	==	==
Chloroform/ppb	<0.28	==	==
Chloromethane/ppb	<0.81	==	==
2-Chlorotoluene/ppb	<0.35	==	==
4-Chlorotoluene/ppb	<0.29	==	==
Dibromochloromethane/ppb	<0.2	==	==
Dibromoethane/ppb	<0.41	==	==
1,4-Dichlorobenzene/ppb	<0.25	==	==
1,3-Dichlorobenzene/ppb	<0.3	==	==
1,2-Dichlorobenzene/ppb	<0.28	==	==
Dichlorodifluoromethane/ppb	<0.27	==	==
1,2-Dichloroethane/ppb	<0.41	==	==
1,1-Dichloroethane/ppb	<0.3	==	==
1,1-Dichloroethene/ppb	<0.31	**5**	*0.5*
cis-1,2-Dichloroethene/ppb	<0.32	==	==
trans-1,2-Dichloroethene/ppb	<0.25	==	==
1,2-Dichloropropane/ppb	<0.32	==	==
2,2-Dichloropropane/ppb	<0.45	==	==
1,3-Dichloropropane/ppb	<0.26	==	==
trans-1,2-Dichloropropene/ppb	<0.22	==	==
cis-1,2-Dichloropropene/ppb	<0.2	==	==
1,1-Dichloropropene/ppb	<0.34	==	==
Ethylbenzene/ppb	<0.27	**0.05**	*0.005*
Hexachlorobutadiene/ppb	<0.48	**700**	*140*
Isopropylbenzene/ppb	<0.3	==	==
p-Isopropyltoluene/ppb	<0.3	==	==
Methylene chloride/ppb	<0.35	==	==
Methyl tert-butyl ether (MTBE)/ppb	<0.26	==	==
Naphthalene/ppb	<0.49	**60**	*12*
Styrene/ppb	<0.23	**100**	*10*
1,1,2,2-Tetrachloroethane/ppb	<0.45	==	==
1,1,1,2-Tetrachloroethane/ppb	<0.29	==	==
Tetrachloroethene (PCE)/ppb	<0.27	==	==
Toluene/ppb	<0.24	**5**	*0.5*
1,2,4-Trichlorobenzene/ppb	<0.24	**800**	*160*
1,1,1-Trichloroethane/ppb	<0.33	==	==
1,1,2-Trichloroethane/ppb	<0.34	==	==
Trichloroethene (TCE)/ppb	<0.3	==	==
Trichlorofluoromethane/ppb	<0.26	==	==
1,2,3-Trichloropropane/ppb	<0.91	**5**	*0.5*
Trichlorotrifluoroethane/ppb	<0.41	==	==
1,2,4-Trimethylbenzene/ppb	<0.31		
1,3,5-Trimethylbenzene/ppb	<0.26	**480**	*96*
Vinyl Chloride/ppb	<0.18	==	==
m&p-Xylene/ppb	<0.69		
o-Xylene/ppb	<0.25	**2000**	*400*

NS = not sampled, NM = Not Measured
Q = Analyte detected above laboratory method detection limit but below practical quantitation limit.
= = No Exceedences
(ppb) = parts per billion

Usual & Customary Standardized Invoice

PECFA #: 54013-9999-00 **Vendor Name:** _____

BRRT's #: 03-56-000393 **Invoice #:** _____

Site Name: Emerald Service Station **Invoice Date:** _____

Site Address: 1547 County Road D, Glenwood City (Emerald), WI **Check #:** _____

Personal information you provide may be used for a secondary purposes [Privacy Law, s. 15.04 (1) (m), Stats.].

TASK CODE/ACTIVITY REFERENCE CODE	TASK DESCRIPTIONS/ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAXIMUM REIMBURSEABLE UNIT COST	UNITS INVOICED	UNIT COST CLAIMED	AMOUNT CLAIMED
1	GROUNDWATER SAMPLING					
GS05	Sample Collection	WELL	$69.00	15.00	$69.00	$1,035.00
GS10	Incremental Sample Collection (natural attentuation)	WELL	$45.40	5.00	$45.40	$227.00
GS15	Incremental Sample Collection (cadmium & lead)	WELL	$25.00	10.00	$25.00	$250.00
GS20	Measure Water Levels (for wells not being sampled)	WELL	$14.00		$-	$-
GS25	Primary Mob/Demob	SITE	$598.20	1.00	$598.20	$598.20
GS30	Temp Well Abandonment	WELL	$25.70		$-	$-
2	ANNUAL GROUNDWATER MONITORING REPORTING					
AGMR05	Annual GW Monitoring	REPORT	$784.50		$-	$-
AGMR10	Annual GW Monitoring (DNR Form 4400-194) with LNAPL Removal per SIR guidance document (RR-628)	REPORT	$990.90		$-	$-
3	LNAPL ASSESSMENT & REMOVAL					
LAR05	Removal Activity (Limited to Quarterly)	WELL	$45.40		$-	$-
LAR06	LNAPL Sample Collection (1 per site)	SITE	$19.60		$-	$-
LAR10	Primary Mob/Demob	SITE	$493.40		$-	$-
4	WASTE DISPOSAL					
	CONSULTANT SERVICES					
WD05	Consultant Coordination	SITE	$130.60	1.00	$130.60	$130.60
	COMMODITY SERVICES					
WD10	Groundwater Sample and/or Purge	DRUM	$40.10	1.00	$40.10	$40.10
WD15	Drill Cuttings	DRUM	$103.00	7.00	$103.00	$721.00
WD17	Landfill Environmental Fee (support documentation must be provided)	ACTUAL COST	ACTUAL COST			
WD20	Free Product	DRUM	$113.10		$-	$-
WD25	Primary Mob/Demob	SITE	$274.00	1.00	$274.00	$274.00
5	CLOSURE REQUEST					
CR05	Primary Closure Request	SUBMITTAL	$1,969.50		$-	$-
CR10	Closure Request with LNAPL Reporting (incremental to CR05)	SUBMITTAL	$1,096.90		$-	$-
CR15	GIS Packet Submittal (For Source Property only)	PACKET	$483.20		$-	$-
CR20	GIS Packet Submittal (For off-site Properties only)	PER ADDITIONAL PROPERTY	$212.10		$-	$-
6	LETTER REPORT/ADDENDUM					
LRA05	Letter Report/Addendum	LETTER	$989.80		$-	$-
7	REGULATORY CORRESPONDENCE					
RC05	Regulatory Correspondence	LETTER/STATUS UPDATE	$122.80		$-	$-

TASK CODE/ACTIVITY REFERENCE CODE	TASK DESCRIPTIONS/ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAXIMUM REIMBURSEABLE UNIT COST	UNITS INVOICED	UNIT COST CLAIMED	AMOUNT CLAIMED
8	WELL ABANDONMENT					
	CONSULTANT SERVICES					
WAB05	Coordination	SITE	$155.10		$-	$-
WAB10	Water column < 30 ft	FT	$2.40		$-	$-
WAB15	Water column > 30 ft	FT	$8.40		$-	$-
WAB20	Bentonite Pellets (50lb bag - 1/4" pellet)	BAG	$10.30		$-	$-
WAB25	Portland Cement (94lb bag)	BAG	$7.80		$-	$-
WAB30	Primary Mob/Demob	SITE	$345.00		$-	$-
	COMMODITY SERVICES					
WAB35	Well Abandonment Mob/Demob	SITE	$392.90		$-	$-
WAB40	Well Abandonment (2 inch)	FT	$5.30		$-	$-
WAB45	Well Abandonment (4 inch)	FT	$6.20		$-	$-
WAB50	Well Abandonment (6 inch)	FT	$7.60		$-	$-
9	INVESTIGATION WORKPLAN PREPARATION					
IWP05	Investigation Workplan Preparation	REPORT	$1,382.50		$-	$-
10	INITIAL SITE SURVEY - FEATURES AND WELL ELEVATIONS					
	CONSULTANT SERVICES					
IS05	Consultant Coordination of Initial Site Survey - Features and Well Elevations	SURVEY	$111.60	1.00	$111.60	$111.60
IS10	Subsequent Surveys	WELL	$104.90		$-	$-
	COMMODITY SERVICES					
IS15	Initial Survey	SURVEY	$1,115.90	1.00	$1,115.90	$1,115.90
11	POTABLE WELL FIELD RECONNAISSANCE					
PWFR05	Potable Well Field Reconnaissance	SITE	$555.70		$-	$-
12	DIRECT PUSH					
	CONSULTANT SERVICES					
DP05	0 - 24 ft bgs W/ Continuous Soil Sampling	FT	$5.10		$-	$-
DP10	> 24 ft bgs W/ Continuous Soil Sampling	FT	$5.70		$-	$-
DP15	Groundwater Profiling (No Soil Sampling)	FT	$2.20		$-	$-
DP20	Groundwater Sample Collection (to be used in conjunction with activity DP05 or DP10)	EACH	$34.30		$-	$-
DP25	Temporary Well Installation	EACH	$47.50		$-	$-
DP30	Primary Mob/Demob	SITE	$487.70		$-	$-
	COMMODITY SERVICES					
DP35	0 - 24 ft bgs W/ Continuous Soil Sampling	FT	$6.60		$-	$-
DP40	> 24 ft bgs W/ Continuous Soil Sampling	FT	$8.60		$-	$-
DP45	Groundwater Profiling (no soil sampling)	FT	$6.20		$-	$-
DP50	Groundwater Sample Collection (cost for tubing)	FT	$0.40		$-	$-
DP55	Expendable Drive Point	EACH	$13.80		$-	$-
DP60	Borehole Abandonment	FT	$1.20		$-	$-
DP65	Concrete Penetration	EACH	$19.10		$-	$-
DP70	Groundwater Sample Collection (to be used in conjunction with activity DP35 or DP40)	EACH	$37.40		$-	$-
DP75	Temporary Well Installation (use DP45 to advance this borehole)	FT	$5.00		$-	$-
DP80	Mob/Demob (Includes Decon)	SITE	$501.00		$-	$-

TASK CODE/ACTIVITY REFERENCE CODE	TASK DESCRIPTIONS/ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAXIMUM REIMBURSEABLE UNIT COST	UNITS INVOICED	UNIT COST CLAIMED	AMOUNT CLAIMED
13	DRILLING					
	CONSULTANT SERVICES					
13.a	CONSULTANT OVERSIGHT DRILLING IN UNCONSOLIDATED SOILS - WITH SOIL SAMPLING					
DR05	For depth interval 0 - 25 ft bgs	FT	$5.10	76.00	$5.10	$387.60
DR10	For depth interval 26 - 50 ft bgs	FT	$5.40		$-	$-
DR15	For depth interval 51 - 75 ft bgs	FT	$6.90		$-	$-
DR20	Primary Mob/Demob	SITE	$564.80	1.00	$564.80	$564.80
13.b	CONSULTANT OVERSIGHT DRILLING IN UNCONSOLIDATED SOILS - WITHOUT SOIL AND/OR GROUNDWATER SAMPLING					
DR25	Consultant Oversight	FT	$1.50		$-	$-
DR30	Primary Mob/Demob	SITE	$481.10		$-	$-
13.c	CONSULTANT OVERSIGHT DRILLING IN BEDROCK					
DR35	Consultant Oversight	FT	$5.90		$-	$-
DR40	Primary Mob/Demob	SITE	$564.80		$-	$-
	COMMODITY SERVICES					
13.d	DRILLING IN UNCONSOLIDATED SOILS - WITH SOIL SAMPLING					
DR45	0 - 25 ft bgs	FT	$15.90	76.00	$15.90	$1,208.40
DR50	26 - 50 ft bgs	FT	$17.50		$-	$-
DR55	51 - 75 ft bgs	FT	$20.50		$-	$-
13.e	DRILLING IN UNCONSOLIDATED SOILS - WITHOUT SOIL AND/OR GROUNDWATER SAMPLING					
DR60	Drilling in Unconsolidated Soils	FT	$11.40		$-	$-
13.f	DRILLING IN BEDROCK					
DR65	Drilling in Bedrock	FT	$31.60		$-	$-
DR70	Bedrock Drilling Setup Charge	EACH	$154.30		$-	$-
DR75	Air Compressor	DAY	$406.10		$-	$-
14	MONITORING WELL INSTALLATION					
	CONSULTANT SERVICES					
	CONSULTANT OVERSIGHT MONITORING WELL INSTALLATION					
MWI05	0 - 25 ft bgs	FT	$3.70	70.00	$3.70	$259.00
MWI10	26 - 75 ft bgs	FT	$2.60		$-	$-
	COMMODITY SERVICES					
MWI15	2 inch PVC Casing	FT	$15.90	70.00	$15.90	$1,113.00
MWI20	Well Development	WELL	$140.60	5.00	$140.60	$703.00
MWI25	Mob/Demob (For development of grout or slurry sealed wells)	SITE	$522.50		$-	$-
15	MISCELLANEOUS DRILLING ACTIVITIES AND SUPPLIES					
MDT05	Drill Rig Mob/Demob (includes decontamination)	MOB/DEMOB	$917.50	1.00	$917.50	$917.50
MDT10	Well Cover/flushmount	EACH	$193.00	5.00	$193.00	$965.00
MDT15	Stickup Well Cover	EACH	$156.10		$-	$-
MDT20	Bumper Guard Posts	EACH	$66.00		$-	$-
MDT21	Drum 55-gallon DOT steel	DRUM	$52.50	8.00	$52.50	$420.00
MDT25	Commodity service provider (drilling & direct push) Per Diem (includes meals and overnight stay per person, maximum of 2 persons)	EACH	$193.60	2.00	$193.60	$387.20
MDT30	Well Repair (Department approval is required prior to conducting this activity.)	WELL	$80.40		$-	$-
MDT35	Borehole Abandonment	FT	$5.20	6.00	$5.20	$31.20
MDT40	Concrete Penetration	EACH	$69.40	1.00	$69.40	$69.40
MDT41	Private Utility Locate	EACH	$111.60		$-	$-
MDT45	Pad Locks	EACH	$7.60	5.00	$7.60	$38.00
16	HAND AUGER BORING					
HA05	Hand Augering	BORING	$85.70		$-	$-
HA10	Primary Mob/Demob	SITE	$529.10		$-	$-

TASK CODE/ACTIVITY REFERENCE CODE	TASK DESCRIPTIONS/ACTIVITY REFERENCE CODE DESCRIPTION	UNIT	MAXIMUM REIMBURSEABLE UNIT COST	UNITS INVOICED	UNIT COST CLAIMED	AMOUNT CLAIMED
17	SURFACE SOIL/SEDIMENT/WATER SAMPLING					
SSWS05	Sampling	SAMPLE LOCATION	$20.50		$-	$-
SSWS10	Primary Mob/Demob	SITE	$430.90		$-	$-
18	VAPOR SCREENING					
VS05	Vapor Screening	SITE	$202.30		$-	$-
19	HYDRAULIC CONDUCTIVITY TESTING					
HCT05	Hydraulic Conductivity Testing	WELL	$55.80	3.00	$55.80	$167.40
HCT10	Mob/Demob	SITE	$621.70	1.00	$621.70	$621.70
20	SOIL BORING/MONITORING WELL PERMITS					
SBMWP05	Soil Boring/Monitoring Well Permit	PERMIT	$234.40	1.00	$234.40	$234.40
SBMWP10	Permit Fee (copy of permit & fee receipt required)	PERMIT FEE	PERMIT FEE		$-	$-
21	ACCESS AGREEMENTS					
AA05	Access Agreements	PROPERTY	$382.80	4.00	$170.00	$680.00
22	SOIL INVESTIGATION REPORT					
SIR05	Soil Investigation Report	REPORT	$3,172.30		$-	$-
23	SOIL AND GROUNDWATER INVESTIGATION REPORT					
SGIR05	Soil and Groundwater Investigation Report	REPORT	$4,728.90		$-	$4,728.90
24	LIMITED SOIL EXCAVATION					
	CONSULTANT SERVICES					
LSE05	Consultant Oversight for Limited Soil Excavation	TON	$4.70		$-	$-
LSE10	Mob/Demob	SITE	$792.30		$-	$-
	COMMODITY SERVICES					
LSE13	Laboratory	LAB SCHEDULE	See Lab Schedule Task 24 total		$-	$-
LSE15	Limited Soil Excavation	TON	$47.00		$-	$-
LSE16	Landfill Environmental Fee (support documentation must be provided)	ACTUAL COST	ACTUAL COST		$-	
25	REMEDIATION SYSTEM SHUT DOWN					
SSD05	Permanent	SITE	$1,043.30		$-	$-
SSD10	Temporary	SITE	$313.60		$-	$-
SSD15	Primary Mob/Demob	SITE	$451.00		$-	$-
26	SITE SPECIFIC RCL CALCULATIONS FOR DIRECT CONTACT RISK					
SSRCL05	SSRCL Calculations	SITE	$368.30		$-	$-
27	CLAIM SUBMITTAL					
CS05	Claim Submittal	CLAIM	$558.00		$-	$-
28	STANDARDIZED INVOICE					
SI05	Standardized Invoice	INVOICE	$16.80		$-	$-
29	OCCURRENCE CLASSIFICATION					
OC05	Occurrence Classification (only eligible for score sheets that are completed & received by the department on or before February 28, 2008).	LETTER/STATUS UPDATE	$119.40		$-	$-
30	MEETING WITH REGULATORS					
MR05	Meeting with Regulators	MEETING	$332.60		$-	$-
31	CONSULTANT OVERNIGHT PER DIEM					
COPD05	Overnight	NIGHT	$108.30	1.00	$108.30	$108.30
32	DEED RESTRICTION PREPARATION					
DRP05	Deed Restriction Preparation	DEED	$169.70		$-	$-
33	SCHEDULE OF LABORATORY MAXIMUMS	SEE ATTACHED SCHEDULE				$2,073.00
34	CONSULTANT INCREMENTAL MOB/DEMOB					
IMD05	Incremental Mob/Demob	SITE	$273.50	1.00	$273.50	$273.50
35	CAP MAINTENANCE PLAN					
CMP05	Cap Maintenance Plan	PLAN	$304.80		$-	$-
36	CHANGE ORDER REQUEST (includes cost cap exceedence requests)					
COR05	Change Order Request	CHANGE ORDER	$363.60	1.00	$363.60	$363.60
					TOTAL AMOUNT CLAIMED	$20,818.30

Effective Schedule Date: July 2012 to

MATRIX	ANALYTE REFERENCE CODE	REIMBURSABLE ANALYTE	UNITS	MAXIMUM REIMBURSABLE UNIT COST	UNITS INVOICED	UNIT COST CLAIMED	AMOUNT CLAIMED TASK 33	AMOUNT CLAIMED TASK 24		
AIR	A1	Benzene	SAMPLE	$42.80		$-	$-			
	A2	BETX	SAMPLE	$47.10		$-	$-			
	A3	GRO	SAMPLE	$43.90		$-	$-			
	A4	VOC's	SAMPLE	$68.50		$-	$-			
WATER	W1	GRO/PVOC	SAMPLE	$27.80		$-	$-			
	W2	PVOC	SAMPLE	$25.70		$-	$-			
	W3	PVOC + 1,2 DCA	SAMPLE	$41.70		$-	$-			
	W4	PVOC + Naphthalene	SAMPLE	$28.90	6	$28.90	$173.40			
	W5	VOC	SAMPLE	$68.50	6	$68.50	$411.00			
	W6	PAH	SAMPLE	$69.50		$-	$-			
	W7	Lead	SAMPLE	$11.80	10	$11.80	$118.00			
	W8	Cadmium	SAMPLE	$12.90		$-	$-			
	W9	Hardness	SAMPLE	$11.80		$-	$-			
	W10	BOD, Total	SAMPLE	$22.50		$-	$-			
	W11	Nitrate	SAMPLE	$10.70	5	$10.70	$53.50			
	W12	Total Kjeldahl	SAMPLE	$19.30		$-	$-			
	W13	Ammonia	SAMPLE	$16.10		$-	$-			
	W14	Sulfate	SAMPLE	$9.70	5	$9.70	$48.50			
	W15	Iron	SAMPLE	$9.70	5	$9.70	$48.50			
	W16	Manganese	SAMPLE	$9.70	5	$9.70	$48.50			
	W17	Alkalinity	SAMPLE	$9.70		$-	$-			
	W18	Methane	SAMPLE	$43.90		$-	$-			
	W19	Phosphorous	SAMPLE	$17.20		$-	$-			
	W20	VOC Method 524.2	SAMPLE	$167.90	5	$167.90	$839.50			
	W21	EDB Method 504	SAMPLE	$90.90		$-	$-	UNITS	UNIT COST CLAIMED	UNIT MAX
SOILS	S1	GRO	SAMPLE	$23.60	3	$23.60	$70.80		$0.00	$23.60
	S2	DRO	SAMPLE	$28.90		$-	$-		$0.00	$28.90
	S3	GRO/PVOC	SAMPLE	$26.80		$-	$-		$0.00	$26.80
	S4	PVOC	SAMPLE	$24.60		$-	$-		$0.00	$24.60
	S5	PVOC + 1,2 DCA + Naphthalene	SAMPLE	$47.10		$-	$-		$0.00	$47.10
	S6	PVOC + Naphthalene	SAMPLE	$34.30	3	$34.30	$102.90		$0.00	$34.30
	S7	VOC	SAMPLE	$68.50		$-	$-		$0.00	$68.50
	S8	SPLP Extraction VOC only	SAMPLE	$48.20	7	$-	$-		$0.00	$48.20
	S9	PAH	SAMPLE	$69.50		$-	$-		$0.00	$69.50
	S10	Lead	SAMPLE	$11.80		$-	$-		$0.00	$11.80
	S11	Cadmium	SAMPLE	$13.90		$-	$-			
	S12	Free Liquid	SAMPLE	$10.70		$-	$-			
	S13	Flash Point	SAMPLE	$24.60		$-	$-			
	S14	Grain Size - dry	SAMPLE	$40.70		$-	$-			
	S15	Grain Size - wet	SAMPLE	$54.60		$-	$-			
	S16	Bulk Density	SAMPLE	$12.90		$-	$-			
	S17	Permeability	SAMPLE	$39.60		$-	$-			
	S18	Nitrogen as Total Kjeldahl	SAMPLE	$19.30		$-	$-			
	S19	Nitrogen as Ammonia	SAMPLE	$16.10		$-	$-			
	S20	% Organic Matter	SAMPLE	$27.80		$-	$-			
	S21	TOC as NPOC	SAMPLE	$54.60		$-	$-			
	S22	Soil Moisture Content	SAMPLE	$6.50		$-	$-			
	S23	Air Filled Porosity	SAMPLE	$24.60		$-	$-			
	S24	% Total Solids	SAMPLE	$6.50		$-	$-			
	S25	Field Capacity	SAMPLE	$26.80		$-	$-			
	S26	TCLP Lead	SAMPLE	$79.20	1	$79.20	$79.20			
	S27	Cation Exchange (Ca, MG, & K)	SAMPLE	$25.70		$-	$-			
	S28	TCLP Cadmium	SAMPLE	$79.20		$-	$-			
	S29	TCLP Benzene	SAMPLE	$79.20	1	$79.20	$79.20			
LNAPL Fluid Property Suite	LFPS01	Viscosity	SAMPLE	$534.60		$-	$-			
		Density	SAMPLE							
		Interfacial tension I (LNAPL/water [dyne/cm])	SAMPLE							
		Interfacial tension II (LNAPL/air [dyne/cm])	SAMPLE							
		Interfacial tension III (water/air) [dyne/cm])	SAMPLE							
			TASK 33 TOTAL		$2,073.00					
				TASK 24 TOTAL		$-				
					TOTAL LAB CHARGES		$2,073.00			

Collins, Patrick J - DNR

From: Jason Powell, METCO - Staff Scientist [jasonp@metcohq.com]
Sent: Monday, August 20, 2012 1:26 PM
To: Collins, Patrick J - DNR
Subject: Re: Emerald Service Station
Attachments: jasonp.vcf

Thanks Pat.

Jason Powell
METCO - Staff Scientist
jasonp@metcohq.com / 608.781.8879
709 Gillette Street - Suite 3, La Crosse WI 54603
www.metcohq.com

On 8/9/2012 1:14 PM, Collins, Patrick J - DNR wrote:

> Jason,
>
> I received the workplan for this site. Let this e-mail serve as your notice to proceed. Please make sure to sample the private well associated with this site. It may be a shared well.
>
> Patrick J. Collins
> Hydrogeologist
> Bureau of Remediation and Redevelopment
> Wisconsin Department of Natural Resources
> (☎) phone: (715) 684-2914 ext. 117
> (☎) fax: (715) 684-5940
> (✉) e-mail: Patrick.Collins@Wisconsin.gov

TR 8/9/12 NTP email COPY

LUST Investigation Field Procedures Workplan

Emerald Service Station
1547 County Highway D
Glenwood City (Emerald), Wisconsin

July 31, 2012
by METCO
WDNR File Reference #: 03-56-000393
PECFA Claim #: 54013-9999-00

METCO

Excellence through experience™

This document was prepared by:

Jason T. Powell
Staff Scientist

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

METCO
Excellence through experience™
1421 State Road 16♦ La Crosse, WI 54601 ♦ 1-800-552-2932 ♦ Fax (608) 781-8893 Email: rona@metcohq.com ♦www.metcohq.com

July 31, 2012

WDNR BRRTS#: 03-56-000393
PECFA Claim #: 54013-9999-00

Katherine Potter
1547 County Road D
Glenwood City, WI 54013

Dear Ms. Potter,

Enclosed is our "LUST Investigation Field Procedures Workplan" concerning the Emerald Service Station site in Glenwood City (Emerald), 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: Patrick Collins – WDNR

Table of Contents

OBJECTIVES....1
INTRODUCTION....2
SITE BACKGROUND....3
SITE CONDITIONS....3
SCOPE OF WORK....4
METCO PROCEDURES AND METHODS....5
SCHEDULE FOR INVESTIGATION PROJECT....9
APPENDIX A/SITE MAPS....11
APPENDIX B/INVESTIGATION CHECKLIST....12
APPENDIX C/LUST SAMPLING GUIDELINES....13
APPENDIX D/WDNR DOCUMENTS....14
APPENDIX E/PROJECT DOCUMENTS....15
APPENDIX F/HEALTH AND SAFETY PLAN....16
APPENDIX G/QUALIFICATIONS....17

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

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 (WDSPS) 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 WDSPS Bureau of PECFA.

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

INTRODUCTION

Site Name

Emerald Service Station

Site Address

1547 County Highway D
Glenwood City (Emerald), Wisconsin

Legal Description

NW ¼, SW ¼, Section 18, Township 30 North, Range 15 West, St Croix County

Contact or Client

Katherine Potter
1547 County Highway D
Glenwood City, WI 54013
(715) 928-0550

WDNR Project Manager

Patrick Collins
Wisconsin Department of Natural Resources
890 Spruce Street
Baldwin, WI 54002
(715) 684-2914

Consultant

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

SITE BACKGROUND

Facility

A gas station operated on the subject property from approximately the 1950's until 1972. Former UST's include a 1,000-gallon leaded gasoline and a 2,000-gallon leaded gasoline. The UST's were removed on August 20, 1992. Currently the subject property is used for residential purposes.

On July 30, 1990, Gottfried Environmental Services completed three soil borings in the area of the UST's during a Preliminary Site Assessment. Soil samples were collected from the bottom of each boring at depths ranging from 66 to 75 inches below ground surface (bgs) for PID analysis. PID analysis indicated that petroleum contamination was present in all three soil samples (T-1, T-2, and T-3). The two soil samples (T-1 and T-3) indicating the highest PID response were submitted for laboratory analysis (BTEX and FID-gasoline). Laboratory analysis confirmed the presence of petroleum contamination and was subsequently reported to the WDNR. The WDNR then required that a site investigation be conducted at the Emerald Service Station property.

The nearest known LUST site exists approximately 4 miles to the north of the subject property. Several UST's are known to have existed at the former Fleming Motors property, approximately 400 feet to the north of the subject property. However, the environmental status of the Fleming Motors property is currently unknown.

Potential Risks and Impacts

The subject property and surrounding properties are all served by private potable wells. Potable well locations will be researched further during the site investigation. The on-site potable well and possibly other nearby wells will be sampled for VOC's during the site investigation.

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

SITE CONDITIONS

Topography

According to the USGS Hydrologic Atlas, Emerald is located in the southern portion of the St. Croix River Basin. This area is characterized by a relatively flat glacial outwash plain and numerous kettle lakes.

The elevation of the site is approximately 1,150 feet above Mean Sea Level

(MSL). See Appendix A for site location.

Geology

Based on local well construction reports, native unconsolidated materials in this area generally consist of 15 to 20 feet of clay, which is underlain by sand. The unconsolidated materials are underlain by sandstone bedrock at approximately 50 to 100 feet below ground surface.

Hydrology

The nearest surface water is an intermittent unnamed creek, which exists approximately 300 feet to the south of the subject property.

Hydrogeology

Based on local well construction reports, groundwater exists at approximately 100 feet below ground surface. Groundwater flow direction is not known at this time, but is expected to be generally toward the south to southwest. Perched groundwater may exist in this area.

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 10 to 15 borings to 40 feet with soil and groundwater (if encountered) sampling. The Geoprobe will be used to collect soil samples at various depths in order to determine the general extent of contaminants in the subsurface environment.

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

1. Determine general subsurface geotechnical characteristics.
2. Determine general extent of the contaminants in the unconsolidated deposits.

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

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

Drilling Project (if required)

METCO has proposed 6 to 8 boreholes to be completed on/off site. METCO has also proposed 4 to 6 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 WDSPS 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
- 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.

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.

Quality Assurance/Quality Control/Waste Management

All drilling and sampling equipment advanced into the subsurface is cleaned between sampling locations. This consists of washing with a biodegradable Alconox solution and rinsing with potable water. Wash and rinse water are

disposed of atop an isolated area of asphalt for evaporation or discharged into a local storm sewer.

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

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

Variances

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

SCHEDULE FOR INVESTIGATION PROJECT

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

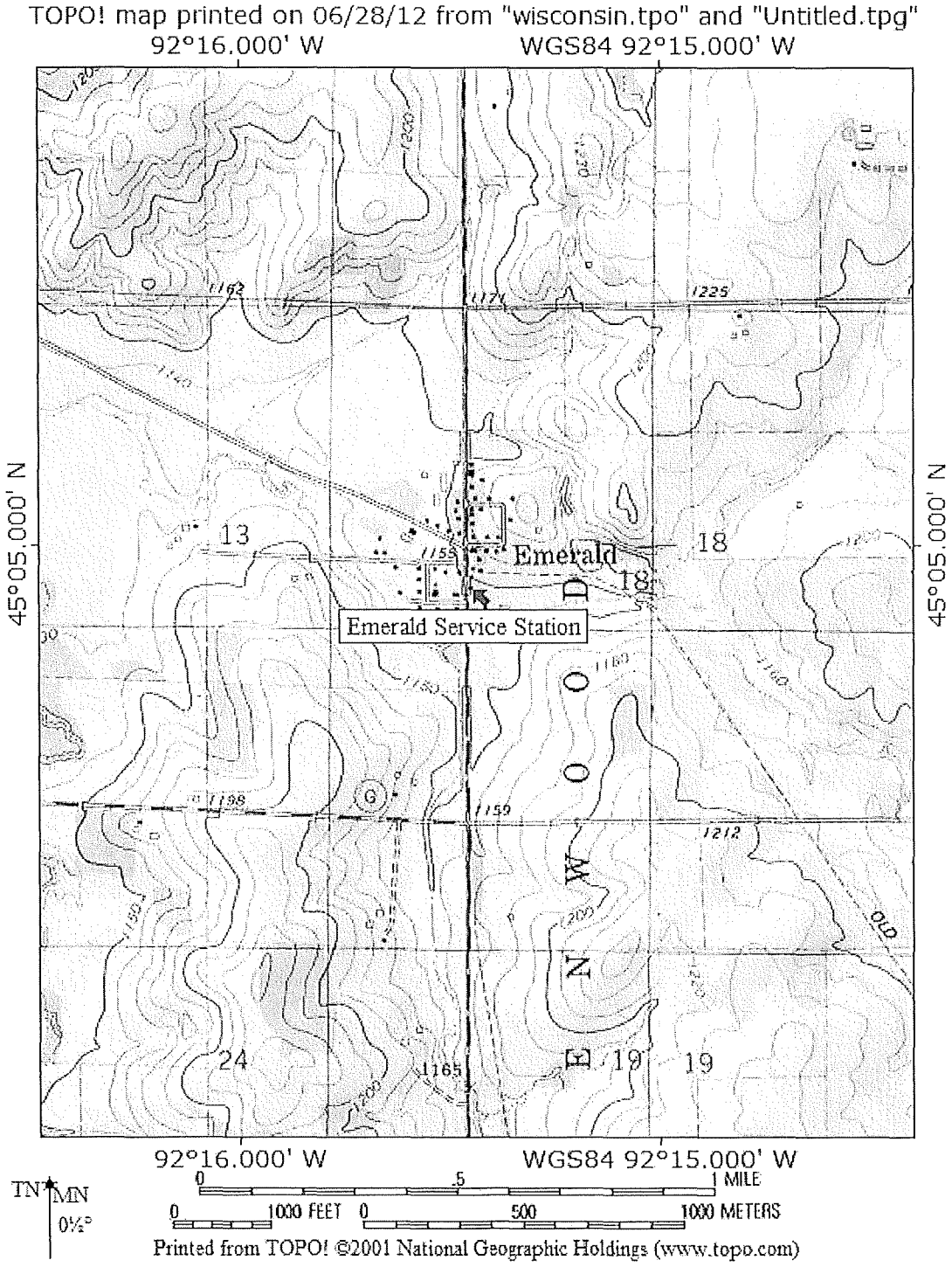
1) METCO submits a LUST Investigation Project proposal to client (done).
2) Proposal acceptance by client. METCO notifies the WDNR that a consultant has been contracted (done).
3) Client obtains PECFA Packet and Site Eligibility Letter from PECFA (done).
4) METCO submits a LUST Investigation Field Procedures Workplan to client and WDNR for review and approval (7/31/12).
5) METCO conducts Geoprobe Project (2-4 weeks). More than one field mobilization may be needed to complete project depending on complexity of the site and project (1 month to receive lab results).
6) Depending on the results of the investigation, METCO prepares a brief summary report or final report and sends copies to client and WDNR (2 months after lab results are received).

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

APPENDIX A/SITE MAPS



SITE LOCATION MAP – CONTOUR INTERVAL 10 FEET
EMERALD SERVICE STATION – EMERALD, WI
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM

SITE LAYOUT MAP

EMERALD SERVICE STATION

METCO
709 Gillette Street, Suite 3
La Crosse, WI 54603
Tel: (608) 781-8879
Fax: (608) 781-8893
Excellence through experience™

EMERALD.
WISCONSIN

DRAWN BY: ED

DATE: 06/28/2012

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

SCALE:
1 INCH = 30 FEET
0 15 30

- PROPERTY LINE
▲ - SITE ASSESSMENT SOIL SAMPLING LOCATION
● - PROPOSED GEOPROBE BORING LOCATION
⊛ - POTABLE WELL LOCATION

TAVERN
1546 COUNTY HWY D

RESIDENTIAL
1549 COUNTY HWY D

GRASS

FENCE

GRASS

T-1

T-2

T-3

1,000-G

2,000-G

ASPHALT

AWNING

FORMER EMERALD SERVICE STATION
1547 COUNTY HWY D

GRAVEL

FORMER SERVICE BAY

SHED

GRASS

COUNTY HIGHWAY D

RESIDENTIAL
2698 154TH AVENUE

GRASS

FENCE

GRASS

GRASS

FENCE

RESIDENTIAL
1543 COUNTY HWY D

GRASS

FENCE

GRASS

GRAVEL DRIVEWAY

RESIDENTIAL
1541 COUNTY HWY D

154TH AVENUE

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

APPENDIX C/LUST SAMPLING GUIDELINES

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_2SO_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_2SO_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_2SO_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_2SO_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_2SO_4	28 days
Organic Carbon SW846 9060/ EPA 415.1	40 ml Glass	4°C, pH<2 with H_2SO_4 or HCL	28 days
Phenol, Total EPA 420.1	1 Liter Glass	4°C, pH<2 with H_2SO_4	28 days
Phosphorus, Total EPA 365.3	250 mL HDPE	4°C, pH<2 with H_2SO_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.

APPENDIX D/WDNR DOCUMENTS

HAZARDOUS SUBSTANCE/WASTE RELEASES:

INTERIM SOIL CLEANUP GUIDELINES--PETROLEUM CONTAMINATION

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

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(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

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

(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

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

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

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

Subchapter II — Groundwater Quality Standards

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

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

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

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

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 diaminoatrazine).

[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

APPENDIX E/PROJECT DOCUMENTS

GOTTFRIED ENVIRONMENTAL SERVICES
ELI M. GOTTFRIED R.S., C.S.T.
P.O. BOX 1645
EAU CLAIRE, WI. 54702-1645
715-835-1634

20 August, 1990

Department of Natural Resources
990 Hillcrest Suite 104
Baldwin, WI. 54002

To Pat Collins:
Re: Site Assessment for Brandt site - Emerald

Enclosed please find a copy of the site assessment report for the Brandt site - Emerald City WI., performed on 30 July, 1990. Note the enclosed documents:

1. U.S.T. Work Summary - Preliminary Site Assessment
2. Plot Plan
3. Laboratory Report

If you have any questions concerning this report, please feel free to contact me at the above address and/or phone number.

Sincerely yours,

Eli M. Gottfried
R.S., C.S.T.

GOTTFRIED ENVIRONMENTAL SERVICES
ELI M. GOTTFRIED R.S., C.S.T.
P.O. BOX 1645
EAU CLAIRE, WI. 54702-1645
715-835-1634

27 August, 1990

U.S.T. Work Summary
Preliminary Site Assessment

TANK OWNER: Gerome Brandt
STREET: Route 3 Glenwood
CITY: Emerald City STATE: WI. ZIP: 547

COMPANY NAME: NA - Company no longer in service
CONTACT: Gerome Brandt
PHONE NO.: 715-265-4377

INITIAL CONTACT DATE: 30 July, 1990
FACILITY LOCATION: CTH D and 154th Ave, Emerald
NUMBER OF TANKS: 2
DATE TANK(S) LAST FILLED: 1972
EST. DATE LAST USED: 1972. It is not known if tanks were pumped dry after final use.
EST. TANK AGE: 24 years
MATERIAL LAST STORED IN TANK(S): gasoline - regular
EST. TANK CAPACITY: 1000gal; 2000gal.
CONSTRUCTION MATERIAL: bare steel (assumed - no excavation has been done to date).

PRECISION TESTED: No REASON: NA
DATE TESTED: NA LEAK RATE: NA

INVENTORY PROBLEM: No direct contact has been made w/ the tank owner. Therefore it is not known if inventory problems have existed.

CONTRACTOR: McDonald's Petroleum Service
ADDRESS: Route 3 Box 311 Chippewa Falls WI. 54729 723-2059

EMERGENCY PERSONNEL CONTACTED: Jack Harvey - Boyceville Fire Department

START DATE: 30 July, 1990 COMPLETION: Open

TANK CONDITION: Unknown

SOIL PROFILE: 0-12" concrete mixed w/ dark brown heavy silt loam; 12-90" dark gray heavy silt loam w/ many large mottles throughout profile.

MATERIALS, METHODS: Core sampling of soils and groundwater were taken by drilling down along the ends of each tank w/ a

solid stem auger mounted on a P/U truck. Samples were retrieved using a 3-1/4" open bucket soil auger. Field screening was accomplished using an Eirtech CGI and a head-space analysis. In some instances, direct readings of soil vapors were taken by putting the CGI probe directly into the borehole. Additional samples were collected in laboratory jars and submitted to an EPA-approved laboratory for more in-depth analyses.

FIELD TEST RESULTS:

Sample	Location	Depth	Result
T-1	N.1000gal	66"	>10,000 ppm
T-2	between tnks	72"	5,000 ppm
T-3	S.2000gal	75"	>10,000 ppm

LABORATORY RESULTS: samples expressed as mg/kg

Analysis	T-1	T-3
Benzene	1.9	<1.0
Ethylbenzene	22	3.9
Toluene	9.3	<1.0
Xylene	130	19
Gasoline	690	160

Note: Regarding field testing, T-1 and T-3 results were obtained by placing probe directly in bore hole. T-3 results were obtained by doing a head space analysis. All samples had a strong old gasoline smell.

IMMEDIATE ACTION: No immediate remediation has taken place. Tanks have not been excavated out.

SUGGESTED REMEDIAL ACTION: It is suggested that the following actions be taken as soon as possible:

1) Tanks should be excavated out.
2) Soils immediately under the tanks should be removed.
3) Determination of the geology of the area to ensure that no creviced bedrock or fracture conditions exist that may enhance contaminant movement.
4) If contaminant migration appears to have taken place, additional soil-vapor analyses should be undertaken to determine the direction and extent of contaminant movement.

TANK FATE: NA

COMMENTS: Both field screening and lab results suggest that soils under the existing tanks have been contaminated with gasoline and/or a fuel product. The relatively low concentrations of BETX suggest that volatiles have dissipated, leaving the halogenated compounds behind. Due to the nature of soils in the immediate vicinity of the tanks (heavy silt loam), and the fact that the area above the tanks

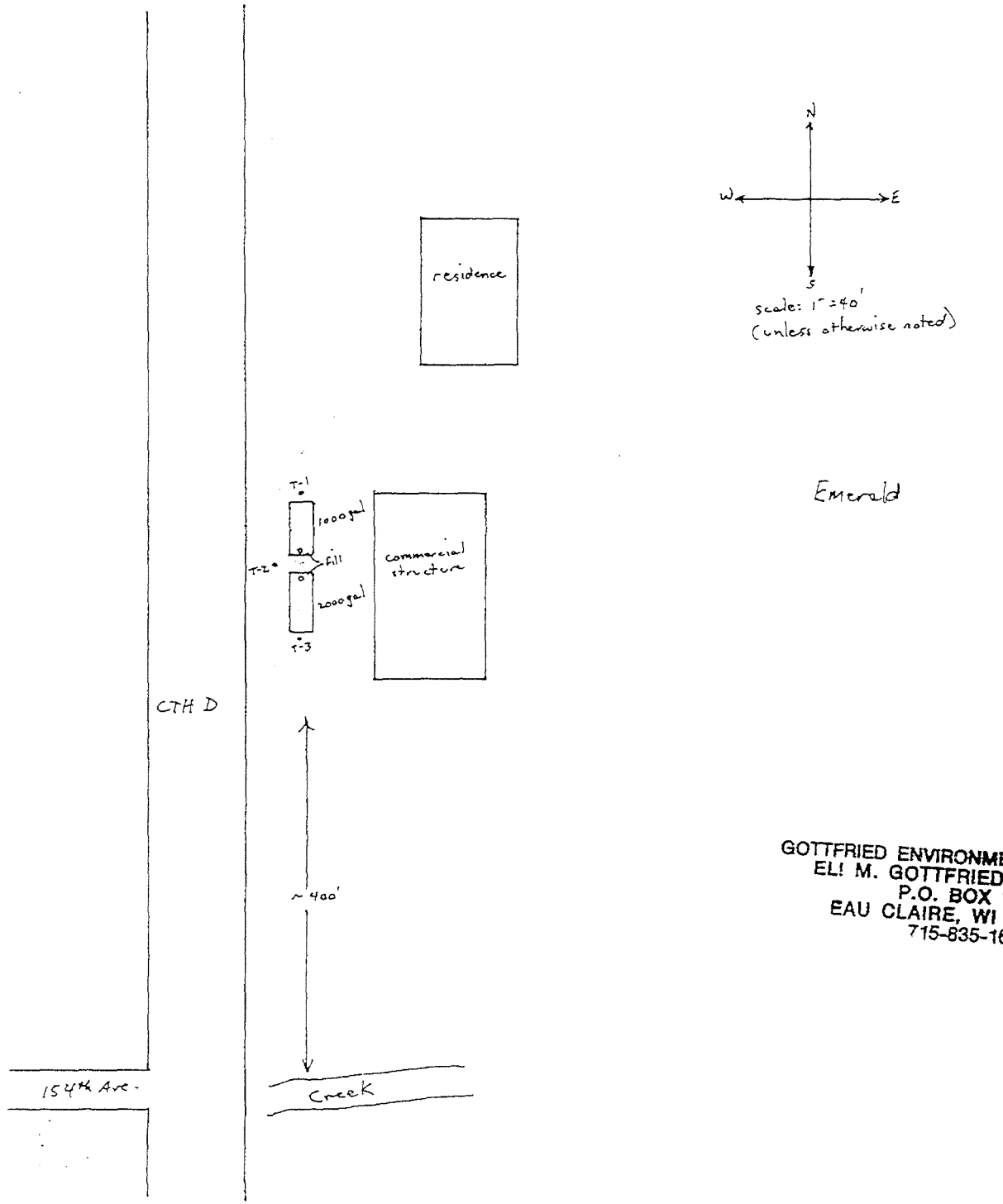
is blacktopped, it is likely that contamination has remained localized. Remediation therefore, may involve excavation of soils in the immediate area around the tanks. Of concern is the presence of considerable mottling in the soils (suggesting seasonally saturated soils) and the location of a small stream approximately 500 feet south of this site. It is important that, at the time of excavation, groundwater (if present) and the surface waters be sampled for possible contamination.

If you have any questions concerning this report, please feel free to contact me at the address and/or phone number noted at the top of page 1.

Sincerely yours,

Eli M. Gottfried
R.S., C.S.T.

Brandt



scale: 1" = 40'
(unless otherwise noted)

Emerald

GOTTFRIED ENVIRONMENTAL SERVICES
ELI M. GOTTFRIED R.S., C.S.T.
P.O. BOX 1645
EAU CLAIRE, WI 54702-1645
715-835-1634

SERCO Laboratories

1931 West County Road C2 St. Paul Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 2172 PAGE 1
08/09/90

Gottfried Environmental
606 Congress St.
Eau Claire, WI 54703

DATE COLLECTED: 07/30/90
DATE RECEIVED: 08/06/90
COLLECTED BY : CLIENT
DELIVERED BY : CLIENT
SAMPLE TYPE : SOIL

Attn: Eli Gottfried

SERCO SAMPLE NO:	63970	63980
SAMPLE DESCRIPTION:	N-66 Brandt	2S-72
ANALYSIS:		
Benzene, mg/kg	1.9	<1.0A
Ethylbenzene, mg/kg	22	3.9
Toluene, mg/kg	9.3	<1.0A
Xylene, mg/kg	130	19
FID Scan, mg/kg, as #2 fuel oil	B	B
FID Scan, mg/kg, as gasoline	690	160

A: Increased detection limits due to high level of contamination.
B: Unable to quantify due to the presence of gasoline.

All analyses were performed using EPA or other accepted methodologies. Samples that may be of an environmentally hazardous nature will be returned to you. Other samples will be stored for 30 days from the date of this report, then disposed of by SERCO LABORATORIES. Please contact me if other arrangements are needed.

Report submitted by,

Diane J. Anderson

Diane J. Anderson
Project Manager

< means "not detected at this level". 1 mg = 1000 ug.

Member

File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Suite 104, 990 Hillcrest
Baldwin, WI. 54002

August 31, 1990 File ref: 4400

Jerome Brandt
Rt.3
Glenwood City, WI. 54013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: Soil Contamination at Former Service Station in Emerald, WI.

Dear Mr. Brandt:

The Department of Natural Resources has been notified that petroleum contamination was discovered during a tank closure site assessment at the above facility. The purpose of this letter is to inform you of your legal responsibilities to address this situation.

Wisconsin Statute 144.76(3) states: "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."

Releases from underground storage tanks are also regulated by federal law. The Environmental Protection Agency (EPA) administers the federal law and has the authority to take enforcement actions against parties not cooperating with the state.

Because a hazardous substance has been released to the environment, you are responsible for conducting an investigation to determine the extent of contamination and potential for groundwater impact. Remedial actions must be taken to clean up contaminated soils and groundwater, if applicable. An immediate concern is the need to identify any risks of explosive or toxic vapors and/or water well contamination.

Generally, the sooner a release is discovered and responded to, the smaller the damaging impacts and the cost of remediation are. Please be sure that all products, soils, wastewater or sludges are disposed of or treated in an approved manner.

The department requests that within 15 days of receiving this letter that you notify this office in writing whether you have hired an experienced environmental consultant to conduct a remedial investigation to assess the environmental impact. Please provide the following information:

1) Verification that you have hired a consultant
2) The name of the consultant
3) The date that the remedial investigation is to begin

The Department requires that you have a qualified environmental engineer or hydrogeologist direct the remedial investigation. Your consultant may contact this office to obtain our guidelines for conducting a remedial investigation. Enclosed is a list of environmental consultants and engineers qualified to perform the necessary work.

Two copies of the reports containing complete documentation of the investigation and clean up shall be sent to this office when completed. The Department is experiencing a backlog of leaking underground storage tank cases of emergency status and your case will be reviewed as time permits. You are reminded, however, that you have a legal obligation to take the steps necessary to clean up the discharge in a timely manner.

You are encouraged to contact the Department of Industry, Labor, and Human Relations (DILHR), the state agency that administers the Petroleum Environmental Cleanup Fund (PECFA). This fund will reimburse you for eligible costs associated with the remedial investigation and cleanup. DILHR should be contacted at (608) 267-4545 to obtain current information regarding the PECFA program. A summary of the PECFA program is enclosed.

Your cooperation in this matter will be appreciated. Please be aware that your ability to use PECFA funds is dependent on your cooperation in adequately addressing this problem.

If you have any questions regarding this letter, please feel free to contact me at (715) 684-2914.

Sincerely,

Patrick J. Collins

Patrick J. Collins
Hydrogeologist

Enclosures

cc: Bill Evans WD
John Paddock WD
John Andersen, DILHR
Eli Gottfried

APPENDIX F/HEALTH AND SAFETY PLAN

SAFETY PLAN INFORMATION

Code: METCO METCO Project No: C2100

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: Emerald Service Station

Site Address: 1547 County Highway D Site Address City: Glenwood City (Emerald)

Site Address State: WI Site Address Zip Code: 54013 Site Address County: St Croix

WDNR Contact: Patrick Collins Fire Dept. Contact: Glenwood City

Project Date: 7/13/2012 Tank Removal Contractor:

General Contractor: METCO

TANK INFORMATION

Tank Sizes\Contents

Tank 1:	1000	Contents:	Leaded Gasoline	Age:	Removed
Tank 2:	2000	Contents:	Leaded Gasoline	Age:	Removed
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	☐	Tank Closure	☐	Install Tank Leak Detection	☐
Tank/Pipe Removal	☐	Tank\Pipe Repair	☐	Install Spill Protection	☐
Petroleum Release Investigation	☑	Install Remedial System	☐	Install Overfill Protection	☐
Leak Detection Testing	☐	Install Monotoring Wells	☑	Install Kard System	☐

Other Geoprobe Soil Borings

Backgro☐☐formation st☑s Complete ☑ Ir ☐

TYPE OF SITE

SITE HEALTH AND SAFETY PLAN

POTENTAIL HEALTH AND SAFETY HAZARDS (check all appropriate)

Handling\transfer of product: ☐
* Fire
* Explosions

General Construction: ☑
* Electrical Hazards
* Physical Injury

Confined Space Entry: ☐
* Explosions

Heavy Equipment: ☑
Noise: ☑
Oxygen Depletion: ☐
Excavation ☐
* Cave-ins
* Falls, slips

Poisonous plants: ☐
Other (Specify):

Snakes: ☐
Insects: ☐
Rodents: ☐
Heat: ☑
Cold: ☑

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

EVALUATION OF CHEMICAL HAZARDS (MSDS sheets attached)

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

ON-SITE PERSONNEL RESPONSIBILITIES

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

METHOD TO CONTROL POTENTIAL HEALTH AND SAFETY HAZARDS

MONITORING INSTRUMENTS

Combustible Gas Indicator: ☐

Action Levels		Action
0-10% LEL	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 catrridge:
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: Glenwood City	911
Hospital Emergency Room: Baldwin Area Medical Center	(715) 684-3311
Poison Control Center: Milwaukee	(800) 222-1222
Police St Croix County Sheriff	911
Fire Dept: Glenwood City	911
Hazardous Waste Response Center:	800-943-0003 Wisconsin EPA 800-424-8802

Location Address: 1547 County Highway D, Glenwood City (Emerald), WI

EMERGENCY ROUTES (attach maps)

Hospital: Baldwin Area Medical Center (730 10th Avenue, Baldwin, WI) - .Travel south 0.4 miles on County Hwy D. Turn right onto County Hwy G and travel 5.7 miles to US Hwy 63. Turn left onto Hwy 63 and travel 7.6 miles into Baldwin. Hospital will be on left.

Other:

EMERGENCY PROCEDURES

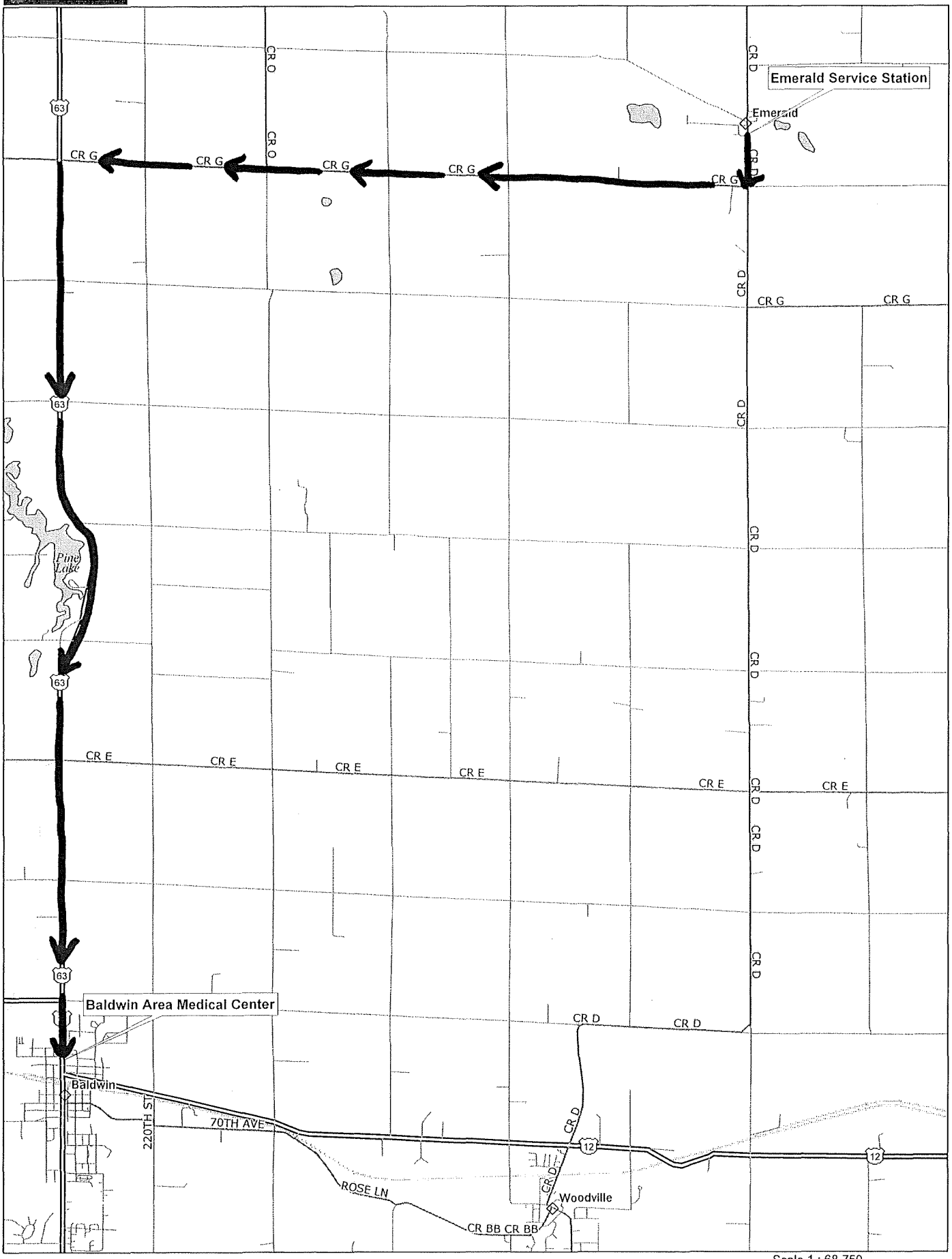
If an emergency develops at the site, the discoverer will take the following course of action:

* 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:		
Client Contact: Katherine Potter		(715) 928-0550
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. Emegency phone numbers
10. Know where the job site book is



TN
MN (0.3°W)

Scale 1 : 68,750
1" = 1.09 mi
Data Zoom 11-5

TN

MN (0.3°W)

Scale 1 : 12,800

1" = 1,066.7 ft

Data Zoom 14-0

APPENDIX G/QUALIFICATIONS

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.

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.

Eric J. Dahl

Professional Title

- Hydrogeologist

Credentials

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

Education

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

Post-Graduate Education

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

Work Experience

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

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.

Brandon A. Walker

Professional Title

- Staff Scientist

Credentials

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

Education

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

Work Experience

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

Troy J. Moseley

Professional Title

- Hydrogeologist

Credentials

- Registered through the Wisconsin Department of Commerce as a PECFA consultant (#1188544).

Education

Includes B.S. in Geology with a Hydrogeology concentration from the University of Wisconsin – Eau Claire. Applicable courses successfully completed include Hydrogeology I & II, Environmental Geology, Engineering Geology and Geophysics, Geochemistry, Field Geology I, Rocky Mountain Field Studies, Glacial Geology, Structural Geology, Sedimentology & Stratigraphy, and Mineralogy & Petrology.

Work Experience

With METCO since August 2011 as a Hydrogeologist. 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.

Collins, Patrick J - DNR

From: Ron Anderson, METCO - Environmental Division [rona@metcohq.com]
Sent: Tuesday, February 07, 2012 1:13 PM
To: Collins, Patrick J - DNR
Subject: Re: Emerald 03-56-000393

All of the Agent Status paperwork is done and submitted. All that is yet to do is for DSPS to place a lien on the property, which they will not do until their "audit" is done.

thanks, ron

On 2/6/2012 2:49 PM, Collins, Patrick J - DNR wrote:

> Ron,
>
> In the back of my mind I remember you telling me that you were seeking agent status on this site.
> Can you give me an update? Thanks
>
> Patrick J. Collins
> Hydrogeologist
> Bureau of Remediation and Redevelopment
> Wisconsin Department of Natural Resources
> (☎) phone: (715) 684-2914 ext. 117
> (☎) fax: (715) 684-5940
> (✉) e-mail: Patrick.Collins@Wisconsin.gov

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: 8/1/05

FILE REF:

TO: File

FROM:

SUBJECT: Katherine Potter

167' Deep Well.

Discussed their site with them. They stopped in to get info on consultants.

ENVIRONMENTAL & REGULATORY SERVICES DIVISION
BUREAU OF PECFA
P.O. Box 8044
Madison, Wisconsin 53708-8044
TDD #: (608) 264-8777
Fax #: (608) 267-1381
http://www.commerce.state.wi.us
http://www.wisconsin.gov
Jim Doyle, Governor
Cory L. Nettles, Secretary

Wisconsin
Department of Commerce

December 8, 2003

Jerome Brandt
Route 3
Glenwood City, WI 54013

RE: **Case Transfer to the Wisconsin Department of Natural Resources (WDNR)**

Commerce # 54012-9999-00 WDNR BRRTS # 03-56-000393
Service Station (Former), County Rd D, Emerald

Dear Mr. Brandt:

On September 5, 1996, the Wisconsin Department of Natural Resources (WDNR) transferred this case to the Wisconsin Department of Commerce (Commerce). Commerce has regulatory oversight of "low and medium risk" sites, while the WDNR maintains regulatory oversight of "high risk" sites and sites that have not yet been classified.

Based on a review of the case file, the site investigation has not been completed, nor is there any indication that activities are being completed to investigate and/or remediate this contaminated property. Commerce has made an attempt to obtain additional information regarding this type of activity in a letter to you dated October 16, 2002. Additional technical information has not been provided. Due to the lack of information necessary to make an accurate determination regarding the risk classification of this site, the site remains unclassified. Therefore, the case file for this site is being transferred back to the WDNR for regulatory oversight. Future correspondence regarding this site should be directed to the Danielle Wincentsen at (715) 623-4190, Ext. 3126, at the following address:

Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
223 E. Steinfest Rd
Antigo, WI 54409

If you have any questions about this letter, please contact me in writing at the letterhead address or by telephone at (608) 261-5401.

Sincerely,

Shawn A. Wenzel
Hydrogeologist
Site Review Section

cc: Case File

ENVIRONMENTAL & REGULATORY SERVICES DIVISION
BUREAU OF PECFA
P.O. Box 8044
Madison, Wisconsin 53708-8044
TDD #: (608) 264-8777
Fax #: (608) 267-1381
http://www.commerce.state.wi.us
http://www.wisconsin.gov
Scott McCallum, Governor
Philip Edw. Albert, Secretary

Wisconsin
Department of Commerce

October 16, 2002

Katherine A Potter.
1547. CTH D.

Mr. Jerome Brandt
Route 3
Glenwood City, WI 54013

RE: **Request for Site Update**

Commerce # 54012-9999-00 WDNR BRRTS # 03-56-000393
Service Station (Former), County Rd D, Emerald

2 UST's – 1-1,000-gallon unknown contents; 1-2,000-gallon unknown contents

Dear Mr. Brandt:

The Wisconsin Department of Commerce (Commerce) is requesting information regarding activities associated with petroleum contamination at the site referenced above. According to information in the case file, petroleum contamination was discovered at the site on August 30,1990. The most recent correspondence in the file is dated August 20, 1990, prepared by Gottfried Environmental Services.

Commerce requests that you submit any more recent information and provide a plan to fulfill your responsibility to address the petroleum contamination. Under current regulations, many sites require little or no cleanup actions after adequate characterization and risk assessment are performed.

Be aware that periods of inactivity and non-compliance can affect PECFA eligibility (if applicable) and, specifically, deem a percentage of the interest on your PECFA loan as not eligible for reimbursement. In addition, Commerce can pursue enforcement actions if you do not respond to this request for information. **Within 30 days, please inform Commerce in writing of your intentions to bring this case to closure.**

Your prompt attention to this request is appreciated. If you have any questions, please contact me in writing at the letterhead address or by telephone at (608) 266-0593.

Sincerely,

Brian F. Taylor
Hydrogeologist
Site Review Section

cc: Case File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Donald R. Winter, District Director

990 Hillcrest Street
Suite 104
Baldwin, Wisconsin 54002
TELEPHONE 715-684-2914
FAX 715-684-5940

September 5, 1996

Jerome Brandt
Route 3
Glenwood City WI 54013

WDNR #03-56-000393
PECFA #
ST. CROIX COUNTY

SUBJECT: Transfer of File for Your Petroleum Conatination Case, Former Service Station, Emerald, WI

Dear Mr. Brandt:

This letter is to notify you that the Department of Natural Resources (DNR) has an open file regarding contamination at the above site, and this file is being transferred to the newly created Department of Commerce.

The 1995-97 state budget bill made significant changes in the way state government manages discharges to the environment from petroleum storage tank systems. As of July 1, 1996, the Department of Commerce is responsible for governmental oversight of environmental cleanup activities at properties contaminated by petroleum storage systems when contamination has not impacted groundwater above state preventative action levels.

Information presented to the DNR to date shows that this site falls into the group of sites identified for transfer. Therefore, we are transferring your file to the Department of Commerce effective immediately. Commerce will provide all future oversight of your cleanup at this property, including determination of file closure. We thank you for the efforts you have made to date to address the contamination.

All future contacts regarding contamination at this site should be directed to the Department of Commerce. You may contact Commerce at either (608) 266-2424 or (608) 267-3753. Correspondence should be addressed to:

PECFA Bureau
Environmental and Regulatory Services Division
Department of Commerce
P.O. Box 7969
Madison, WI 53707-7969

Please include both your PECFA claim number, if you have one, and your DNR site identification number in your correspondence. The PECFA program reimbursement staff have also been transferred to Commerce from the Department of Industry, Labor and Human Relations (DILHR), effective July 1, 1996.

Sincerely,

Patrick J. Collins

Patrick Collins
Hydrogeologist

c: Department of Commerce

**********PHONE LOG **********

SITE NAME: Jerome Brandt LOCATION: Amery

TO:

FROM: CONTACT: Rick Van Blaricom TELEPHONE: 1-268-7486

AGENCY/FIRM: DATE: 8-23-92

****

CONVERSATION SUMMARY:

Was not in - secretary a City hall gave business number to try to contact him at 1-268-2264

****

SIGNATURE: FOLLOW-UP REQUIRED? ___YES ___NO

REFERRED TO:

Department of Natural Resources

SOLID WASTE MANAGEMENT FACILITY CONTACT FORM

Form 4400-106 6-86

NOTE: DO NOT USE THIS FORM WHEN DOCUMENTING INSPECTIONS AT HAZARDOUS WASTE AND SOLID WASTE FACILITIES. SEE BACK SIDE OF THIS FORM FOR MORE INFORMATION.

ATTN: File Swensen Oil

License Number _ _ _ _ _

☐ Residuals Management SW/3 ☐ District _____

EPA ID Number

☐ Hazardous Waste Management SW/3 Unit _____ ☐ Environmental Enforcement EE/5

WI- _ _ _ _ _ _ _ _ _ _ _ _

Facility ID Number

☐ Systems Management SW/3 ☐ _____

_ _ _ _ _ _ _ _ _ _

Facility/Company Name	Location (Address or ¼¼)	City, State, Zip Code

Facility Type	District	County	Contact Method	Date	Time (24-Hour Clock)
Gas Station			☐ Telephone ☐ In-Person	8/23/91 (M M D D Y Y)	_ _ _ _

Facility Representative Contacted	Title or Position of Representative	Telephone Number (include area code)
EMERD Station		( )

Jim Swensen

Jerome Brant ? Want them to pull tanks ASAP

Dissagreement over who is to be responsible to supply consultant for Clean up.

265-9554

Cathy Father Lives in station ~~Case~~ Now a House and wants to put in Septic System. Needs tanks Removed soon.

Jim Swensen

Jerdme BRANT.

Check if additional sheets attached ☐

By

JIM - SWENSEN

- JEROME BRANT

TANKS STILL IN PLACE

SOUTH EM

JEROME BRANT [X] * [X]

JIM SWENSEN OWNS TANKS

WHEN THE TANKS ARE TO BE REMOVED

CATHY POTTER

265-4554

GLEN WOOD.

TELEPHONE LOG

SITE NAME/ID#: Emerald, WI DATE/TIME:

CONTACT: Gerry Brandt - TELEPHONE NUMBER: 265-4377

DEPARTMENT/ AGENCY:

SUMMARY: Main Street, Emerald, St. Croix
Gas Station - Since 1972, closed.
Heavy -

Jerome Brandt, Rt 3 Glenwood
D C+D & E 154 ave,
2 tanks,
72" 600 ppm as Gasoile -

* 9/10/90
Cathy Potter stopped in - She rents property, Pallet factory
Wanted to know status.

9/11/90

Told him that I sent letter. because
he is the owner. He is responsible.
I talked w/ Jim Swenson, tank owner.
He appears to accept responsibility.
Jerry said that tanks are empty.
He helped replace tanks back when
his uncle had the station. ± 30-40 years
Replaced because they leaked.
Most wells in area are 160-170" deep.

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Jerome Brandt
Rt 3
Glenwood City, WI 54013

4. Article Number
P464540 989

Type of Service:
- ☐ Registered
- ☒ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ COD
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee
X Jerome Brandt

6. Signature — Agent
X

7. Date of Delivery
9-4-90

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Apr. 1989 *U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

UNITED STATES POSTAL SERVICE

OFFICIAL BUSINESS

SENDER INSTRUCTIONS

Print your name, address and ZIP Code in the space below.
- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

RECEIVED
SEP 07 1990
Baldwin DNR

U.S.MAIL

PENALTY FOR PRIVATE USE, $300

RETURN TO

Print Sender's name, address, and ZIP Code in the space below.

Pat Collins - WDNR
Suite 104 990 Hillcrest
Baldwin, WI 54002

File

State of Wisconsin \ **DEPARTMENT OF NATURAL RESOURCES**

Carroll D. Besadny
Secretary

Suite 104, 990 Hillcrest
Baldwin, WI. 54002

August 31, 1990 File ref: 4400

Jerome Brandt
Rt. 3
Glenwood City, WI. 54013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RE: Soil Contamination at Former Service Station in Emerald, WI.

Dear Mr. Brandt:

The Department of Natural Resources has been notified that petroleum contamination was discovered during a tank closure site assessment at the above facility. The purpose of this letter is to inform you of your legal responsibilities to address this situation.

Wisconsin Statute 144.76(3) states: "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."

Releases from underground storage tanks are also regulated by federal law. The Environmental Protection Agency (EPA) administers the federal law and has the authority to take enforcement actions against parties not cooperating with the state.

Because a hazardous substance has been released to the environment, you are responsible for conducting an investigation to determine the extent of contamination and potential for groundwater impact. Remedial actions must be taken to clean up contaminated soils and groundwater, if applicable. An immediate concern is the need to identify any risks of explosive or toxic vapors and/or water well contamination.

Generally, the sooner a release is discovered and responded to, the smaller the damaging impacts and the cost of remediation are. Please be sure that all products, soils, wastewater or sludges are disposed of or treated in an approved manner.

The department requests that within 15 days of receiving this letter that you notify this office in writing whether you have hired an experienced environmental consultant to conduct a remedial investigation to assess the environmental impact. Please provide the following information:

1) Verification that you have hired a consultant
2) The name of the consultant
3) The date that the remedial investigation is to begin

The Department requires that you have a qualified environmental engineer or hydrogeologist direct the remedial investigation. Your consultant may contact this office to obtain our guidelines for conducting a remedial investigation. Enclosed is a list of environmental consultants and engineers qualified to perform the necessary work.

Two copies of the reports containing complete documentation of the investigation and clean up shall be sent to this office when completed. The Department is experiencing a backlog of leaking underground storage tank cases of emergency status and your case will be reviewed as time permits. You are reminded, however, that you have a legal obligation to take the steps necessary to clean up the discharge in a timely manner.

You are encouraged to contact the Department of Industry, Labor, and Human Relations (DILHR), the state agency that administers the Petroleum Environmental Cleanup Fund (PECFA). This fund will reimburse you for eligible costs associated with the remedial investigation and cleanup. DILHR should be contacted at (608) 267-4545 to obtain current information regarding the PECFA program. A summary of the PECFA program is enclosed.

Your cooperation in this matter will be appreciated. Please be aware that your ability to use PECFA funds is dependent on your cooperation in adequately addressing this problem.

If you have any questions regarding this letter, please feel free to contact me at (715) 684-2914.

Sincerely,

Patrick J. Collins

Patrick J. Collins
Hydrogeologist

Enclosures

cc: Bill Evans WD
John Paddock WD
John Andersen, DILHR
Eli Gottfried

GOTTFRIED ENVIRONMENTAL SERVICES
ELI M. GOTTFRIED R.S., C.S.T.
P.O. BOX 1645
EAU CLAIRE, WI. 54702-1645
715-835-1634

20 August, 1990

Department of Natural Resources
990 Hillcrest Suite 104
Baldwin, WI. 54002

To Pat Collins:
Re: Site Assessment for Brandt site - Emerald

Enclosed please find a copy of the site assessment report for the Brandt site - Emerald City WI., performed on 30 July, 1990. Note the enclosed documents:

1. U.S.T. Work Summary - Preliminary Site Assessment
2. Plot Plan
3. Laboratory Report

If you have any questions concerning this report, please feel free to contact me at the above address and/or phone number.

Sincerely yours,

Eli M. Gottfried
R.S., C.S.T.

GOTTFRIED ENVIRONMENTAL SERVICES
ELI M. GOTTFRIED R.S., C.S.T.
P.O. BOX 1645
EAU CLAIRE, WI. 54702-1645
715-835-1634

27 August, 1990

U.S.T. Work Summary
Preliminary Site Assessment

TANK OWNER: Gerome Brandt
STREET: Route 3 Glenwood
CITY: Emerald City **STATE:** WI. **ZIP:** 547

COMPANY NAME: NA - Company no longer in service
CONTACT: Gerome Brandt
PHONE NO.: 715-265-4377

INITIAL CONTACT DATE: 30 July, 1990
FACILITY LOCATION: CTH D and 154th Ave, Emerald
NUMBER OF TANKS: 2
DATE TANK(S) LAST FILLED: 1972
EST. DATE LAST USED: 1972. It is not known if tanks were pumped dry after final use.
EST. TANK AGE: 24 years
MATERIAL LAST STORED IN TANK(S): gasoline - regular
EST. TANK CAPACITY: 1000gal; 2000gal.
CONSTRUCTION MATERIAL: bare steel (assumed - no excavation has been done to date).

PRECISION TESTED: No **REASON:** NA
DATE TESTED: NA **LEAK RATE:** NA

INVENTORY PROBLEM: No direct contact has been made w/ the tank owner. Therefore it is not known if inventory problems have existed.

CONTRACTOR: McDonald's Petroleum Service
ADDRESS: Route 3 Box 311 Chippewa Falls WI. 54729 723-2059

EMERGENCY PERSONNEL CONTACTED: Jack Harvey - Boyceville Fire Department

START DATE: 30 July, 1990 **COMPLETION:** Open

TANK CONDITION: Unknown

SOIL PROFILE: 0-12" concrete mixed w/ dark brown heavy silt loam; 12-90" dark gray heavy silt loam w/ many large mottles throughout profile.

MATERIALS, METHODS: Core sampling of soils and groundwater were taken by drilling down along the ends of each tank w/ a

solid stem auger mounted on a P/U truck. Samples were retrieved using a 3-1/4" open bucket soil auger. Field screening was accomplished using an Eirtech CGI and a head-space analysis. In some instances, direct readings of soil vapors were taken by putting the CGI probe directly into the borehole. Additional samples were collected in laboratory jars and submitted to an EPA-approved laboratory for more in-depth analyses.

FIELD TEST RESULTS:

Sample	Location	Depth	Result
T-1	N.1000gal	66"	›10,000 ppm
T-2	between tnks	72"	5,000 ppm
T-3	S.2000gal	75"	›10,000 ppm

LABORATORY RESULTS: samples expressed as mg/kg

Analysis	T-1	T-3
Benzene	1.9	‹1.0
Ethylbenzene	22	3.9
Toluene	9.3	‹1.0
Xylene	130	19
Gasoline	690	160

Note: Regarding field testing, T-1 and T-3 results were obtained by placing probe directly in bore hole. T-3 results were obtained by doing a head space analysis. All samples had a strong old gasoline smell.

IMMEDIATE ACTION: No immediate remediation has taken place. Tanks have not been excavated out.

SUGGESTED REMEDIAL ACTION: It is suggested that the following actions be taken as soon as possible:

1) Tanks should be excavated out.
2) Soils immediately under the tanks should be removed.
3) Determination of the geology of the area to ensure that no creviced bedrock or fracture conditions exist that may enhance contaminant movement.
4) If contaminant migration appears to have taken place, additional soil-vapor analyses should be undertaken to determine the direction and extent of contaminant movement.

TANK FATE: NA

COMMENTS: Both field screening and lab results suggest that soils under the existing tanks have been contaminated with gasoline and/or a fuel product. The relatively low concentrations of BETX suggest that volatiles have dissipated, leaving the halogenated compounds behind. Due to the nature of soils in the immediate vicinity of the tanks (heavy silt loam), and the fact that the area above the tanks

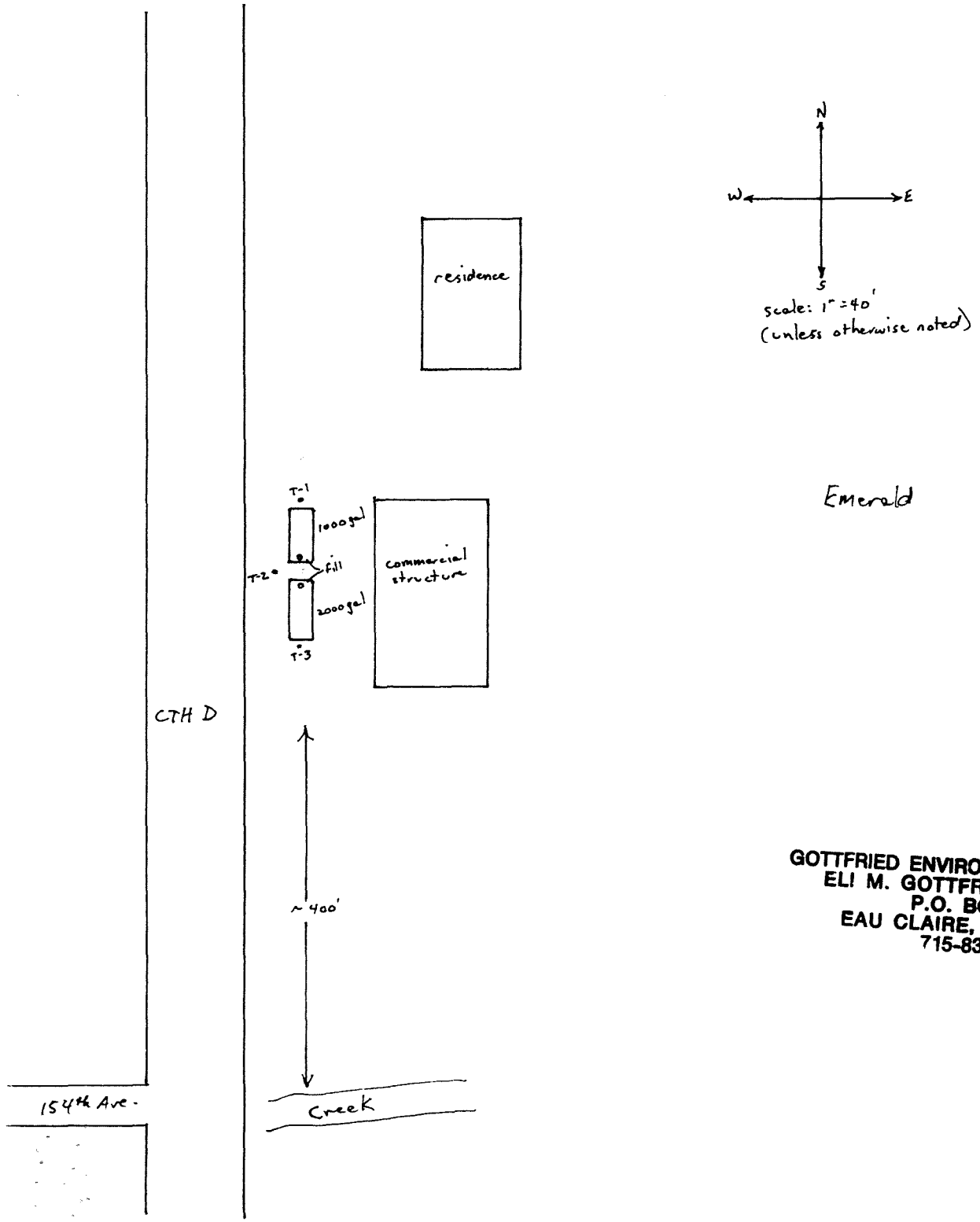
is blacktopped, it is likely that contamination has remained localized. Remediation therefore, may involve excavation of soils in the immediate area around the tanks. Of concern is the presence of considerable mottling in the soils (suggesting seasonally saturated soils) and the location of a small stream approximately 500 feet south of this site. It is important that, at the time of excavation, groundwater (if present) and the surface waters be sampled for possible contamination.

If you have any questions concerning this report, please feel free to contact me at the address and/or phone number noted at the top of page 1.

Sincerely yours,

Eli M. Gottfried
R.S., C.S.T.

Brandt



GOTTFRIED ENVIRONMENTAL SERVICES
ELI M. GOTTFRIED R.S., C.S.T.
P.O. BOX 1645
EAU CLAIRE, WI 54702-1645
715-835-1634

SERCO Laboratories

1931 West County Road C2 St Paul Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 2172 PAGE 1
08/09/90

Gottfried Environmental
606 Congress St.
Eau Claire, WI 54703

DATE COLLECTED: 07/30/90
DATE RECEIVED: 08/06/90
COLLECTED BY : CLIENT
DELIVERED BY : CLIENT
SAMPLE TYPE : SOIL

Attn: Eli Gottfried

SERCO SAMPLE NO:	63970	63980
SAMPLE DESCRIPTION:	N-66 Brandt	2S-72

ANALYSIS:

Benzene, mg/kg	1.9	<1.0A
Ethylbenzene, mg/kg	22	3.9
Toluene, mg/kg	9.3	<1.0A
Xylene, mg/kg	130	19
FID Scan, mg/kg, as #2 fuel oil	B	B
FID Scan, mg/kg, as gasoline	690	160

A: Increased detection limits due to high level of contamination.
B: Unable to quantify due to the presence of gasoline.

All analyses were performed using EPA or other accepted methodologies. Samples that may be of an environmentally hazardous nature will be returned to you. Other samples will be stored for 30 days from the date of this report, then disposed of by SERCO LABORATORIES. Please contact me if other arrangements are needed.

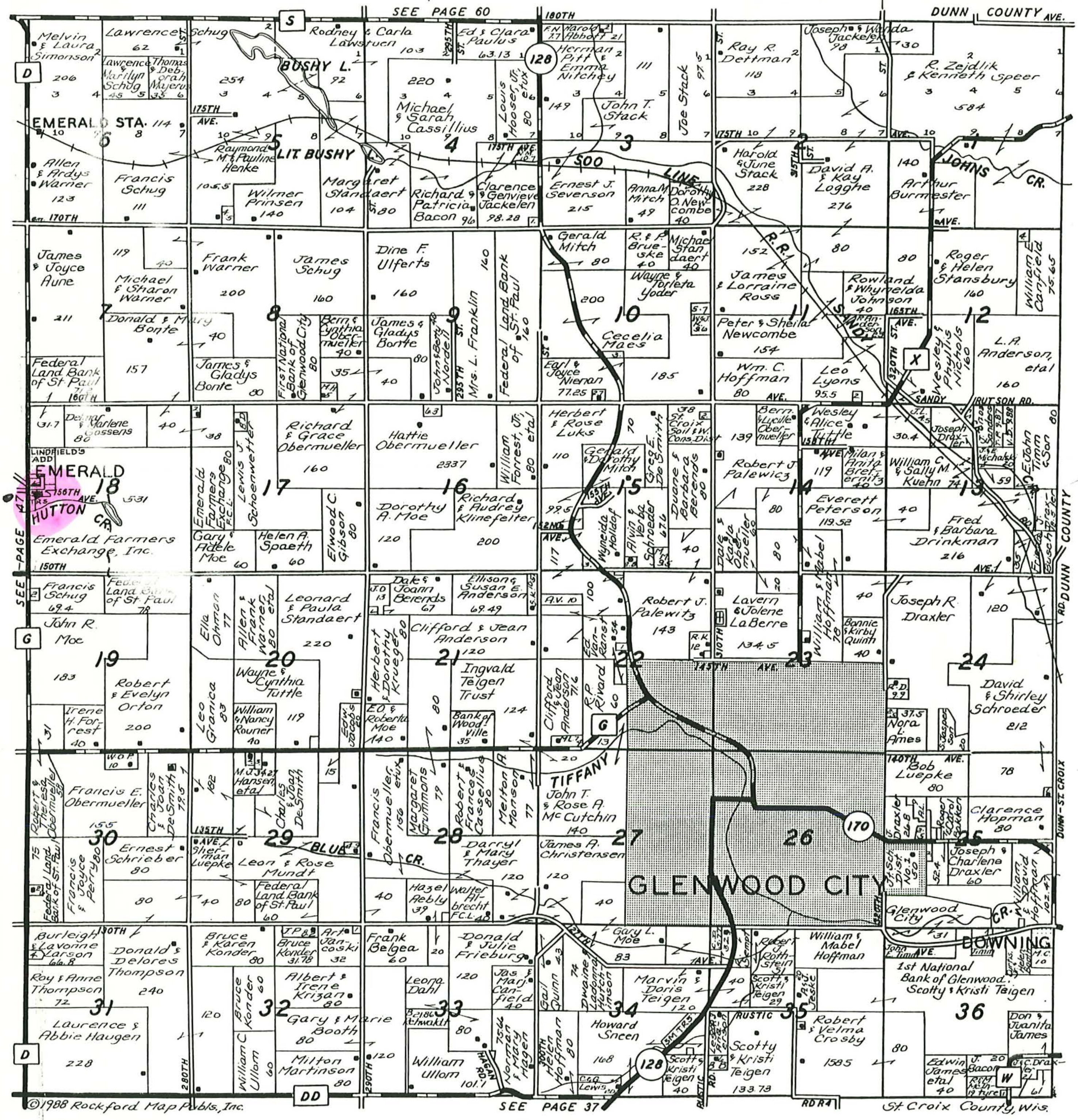
Report submitted by,

Diane J. Anderson
Project Manager

< means "not detected at this level". 1 mg = 1000 ug.

Member

GLENWOOD T.30N.-R.15W.



REV. 10/89

DEPARTMENT OF NATURAL RESOURCES
LEAKING UNDERGROUND STORAGE TANK

COMPUTER TRACKING
FORM 4400 #393

PMN#: 3093 FID#:

SITE NAME: Former Service Station

PROJECT MGR:

ADDRESS: Emerald, WI.

SUPPORT PERSON: TN CITY VIL

DISTRICT: WD COUNTY: St. Croix MNDI:

LEGAL DESC: NW 1/4 SW 1/4 SEC 18 T 30 R 15 E (W)

DATE OF INITIAL CONTACT: 8 / 30 / 90 (mo day yr)

DATE OF RP LETTER: 8 / 31 / 90 (mo day yr)

DATE SITE CLOSURE APPROVED: / / (mo day yr)

LUST TRUST ELIGIBLE: (x)
X 1 = FEDERAL
___ 2 = NON-FEDERAL

STATUS: (X)
___ 1 = STATE LEAD
X 2 = RP LEAD

PRIORITY SCREENING: (X)
___ 1 = HIGH SCORE:
X 2 = MEDIUM
___ 3 = LOW
___ 4 = UNKNOWN

(see worksheet on back)

FUNDING SOURCE: (X)
X 1 = RESPONSIBLE PARTY
___ 2 = LUST TRUST FUND
___ 3 = ENVIRONMENTAL RESPONSE FUND
___ 4 = SUPER FUND
___ 5 = NONE
___ 6 = OTHER

(X AS APPROPRIATE)	DATE INITIATED (MO DAY YR)	DATE COMPLETED (MO DAY YR)	COMMENTS:
___ NO ACTION TAKEN			
___ EMERGENCY	/ /	/ /	
___ EMERGENCY RESPONSE	/ /	/ /	
X FIELD INVESTIGATION	7 / 30 / 90	/ /	Add. RI needed
___ REMEDIAL ACTION	/ /	/ /	
___ LONG TERM MONITORING	/ /	/ /	

FIRM OR PERSON RESPONSIBLE: Jerome ~~James~~ Brandt

CONTACT: Jerome ~~James~~ Brandt

ADDRESS: Rt. 3
Glenwood City, WI 54013

PHONE: 715 / 265-4377
(list additional on separate list & attach)

CONSULTANT:

CONTACT:

ADDRESS:

PHONE: /

AMOUNT COMMITTED: $. AMOUNT SPENT: $.
(list additional on separate list & attach)

PECFA REVIEW REQUESTED:(X) ___YES ___NO

DATE PECFA REQUEST RECEIVED:(mo day yr) / /

	KNOWN IMPACTS:(x)	POTENTIAL IMPACTS:(X)
FIRE/EXPLOSION THREAT		
CONTAMINATED PRIVATE WELL		
CONTAMINATED PUBLIC WELL		
GROUNDWATER CONTAMINATION	X	
SOIL CONTAMINATION	X	
OTHER:		

SUBSTANCES:(X) QUANTITY DISCHARGED:(gals)
___ LEADED GAS ___ VOCS
___ UNLEADED GAS ___ PESTICIDE
___ DIESEL
___ FUEL OIL
X UNKNOWN HYDROCARBONS
___ OTHER

ENFORCEMENT ACTION TAKEN

01=INF. CONTACT,RESP INITIATED
02=RP LETTER,RESP INITIATED
03=NTC OF NON COMPLIANCE
06=INSPECTION LETTER
07=RESPONSE RECEIVED
11=CLOSE OUT
14=NOTICE OF VIOLATION
18=ADMIN. ORDER FINAL
20=ADMIN. ORDER CANCELLED
23=REFERRAL TO DOJ
25=REFERRAL TO EPA
99=OTHER ACTION:

ACTION (code from above)	DATE (mo/day/yr)	COMMENT:
99	8 / 30 / 90	Discussed CN w/ Eli Gottfried
___	/ /	
___	/ /	
___	/ /	

(for additional action codes see instructions/list additional on separate list and attach)

OVER ALL CASE COMMENT: Boring adjacent to tanks showed high levels of CN Reported by Eli Gottfried,

LUST CASE PRIORITY SCREENING WORKSHEET

HIGH FACTORS: (DEFINITION: Any case which presents an actual threat to human health, or has a high potential of causing a threat to human health and property; and/or any case which has caused or has a high potential of causing substantial impacts to the soil waters and air of the State of Wisconsin)

HIGH FACTORS:

____ Contaminated private or public well >NR140 enf. std.
____ Explosive or toxic vapors in structures
____ Threat of fire

HIGH OR MEDIUM FACTORS: (write in choice of high or medium)

____ Floating product (medium if no receptors within 1 mile)
____ Known gw contamination (private or public well <140 enf. std.
____ Impacted surface water--wetland, trout stream, etc. impacted
____ saturated soil contamination

MEDIUM FACTORS: (DEFINITION: Any case which does not appear to be an immediate threat to human health or vital natural resources but which shows levels of contamination that may cause substantial environmental impacts if left unaddressed.)

X Moderate soil contamination with moderate potential for impacting groundwater.
____ Impacted surface water--no critical habitat threats.

LOW FACTORS: (DEFINITION: Any case where contamination has been documented, but which presents limited potential for any immediate threat to human health and vital natural resources.)

____ Soil contamination which appears to have a limited potential for impacting groundwater.
____ Initial remedial action has substantially reduced environmental threat.

UNKNOWN FACTOR: (DEFINITION: Any case where some indication of contamination is present, but due to incomplete or inaccurate information the level of threat to human health or the environment can not be assessed at this time.)

____ Inadequate information to assign a high, medium, or low ranking.

OVERALL RANKING: The screening rank for the site along with the date of ranking. This may be updated when additional information is received. Special circumstances for a particular case may be taken into account in the comment section. The District LUST coordinator may independently set the ranking of a site based upon "special circumstances."

Circle one & date, indicate in priority screening box opposite side ____ HIGH ____ (8/31/90) (MEDIUM) ____ LOW ____ UNKNOWN

COMMENT: May be upgraded to High Priority after additional investigation

---

NUMERICAL LUST SCORING WORKSHEET (complete for LUST cases ranked HIGH)

1. GROUNDWATER & SOILS: (circle one)

POINTS	Documented Petroleum Contamination:	POINTS	
20	Municipal well	8	Soil & gw within 1200' of a public well
18	>6 private wells	6	Soil & gw within 1200' of one or more private wells
16	4 - 6 private wells	4	GW contamination, no wells within 1200'
14	2 - 3 private wells	2	Soil contamination
12	1 private well		

2. EXPLOSIVE OR TOXIC VAPORS: (circle one)

POINTS CONFIRMED	POTENTIAL	
20	10	Explosive levels in a residence or building
16	8	Explosive levels in a sewer or structure
12	6	Toxic levels in a residence or building

Note: Explosive levels determined to be >20% LEL as per an explosivity meter; toxicity levels are based on OSHA permissible exposure limits (PEL)

3. HYDROGEOLOGIC SETTING: (circle one)

POINTS	
12	Highly permeable sub-soils (gravel, well sorted sand, fractured bedrock or utilities capable of intercepting and directing flow) and groundwater within 25 feet of the ground surface.
10	Highly permeable sub-soils and groundwater more than 25 feet below ground surface.
8	Moderately permeable sub-soils (silty sands, silty gravel, clayey sands) and groundwater within 25 feet of ground surface
6	Moderately permeable sub-soils and groundwater greater than 25 feet below ground surface.
4	Low permeability sub-soils (silt, clayey silt, sand clays) and groundwater within 25 feet of ground surface.
2	Low permeability sub-soils and groundwater greater than 25 feet below ground surface.

4. TYPE OF PRODUCT: (circle one)

POINTS	NOTE: Add 4 points if free product is present. (score in parentheses)
8 (12)	Gasoline, mixture of gasoline and other products, other light petroleum products.
6 (10)	Diesel, fuel oil
2 (6)	Bunker oil, other heavy oils or crude fractions

____ TOTAL SCORE (indicate score in priority screening box on opposite side)